Evaluation of the IHS Injury Prevention Specialists Program, 1987-1991.

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Injuries are one of the leading causes of death among the American Indians and Alaska Natives. For 1986-1988, there were 2,603 deaths among persons 1-44 years of age. The injury death rate for American Indian and Alaska Natives 25-44 years of age was three times higher than the US-All Races rate. There were 10,306 hospitalizations of American Indians and Alaska Natives in FY 1989 due to injuries and poisonings. Over 330,000 outpatient visits occur annually for injuries. To treat and transport the injured costs an estimated $100 million annually. A conservative estimate of the societal costs of all injuries that occurred in the US in 1980 was $75-$100 billion.

Less easily measured costs include pain, grief, family and social disruption, and the social and psychologic effects of disfigurement and long-term disability, such as those caused by severe burns, epilepsy from head injury, limitations of mobility from spinal cord injury, amputations, traumatic arthritis, and severe reduction in mental function from head injury.

The number of severe injuries could be substantially reduced in the US by greater application of current knowledge. The application of current knowledge to implement a variety of injury control interventions can substantially reduce the incidence, severity, and accompanying cost of injury. The potential savings to the IHS are in the millions of dollars for interventions for which data are available.

In addressing this public health problem the Indian Health Service (IHS), Office of Environmental Health and Engineering, Division of Environmental Health, developed what is known as the Injury Prevention Specialists Fellowship Program (IPSFP) in 1987. This program was necessitated by several factors. First, a short or virtually non-existent supply of trained injury prevention specialists was available. Second, education was hindered by time requirements, since few academic institutions offered injury prevention and related courses in short spans of time. Such courses were frequently offered over a period of several semesters and usually affiliated with a multi-year undergraduate or graduate degree. Third was cost. The cost to move IHS health professionals away from their duty stations to attend an academic institution for several years and eventually earn a degree not directly related to injury prevention was cost prohibitive. Given the limited number of personnel in the United States trained in injury prevention, the clear need for qualified, professional personnel in the IHS, and the magnitude of the injury problem, the IHS developed an Injury Prevention Specialist Fellowship to address this unmet need.

Requirements for an individual to be considered eligible to participate in the fellowship program are a Bachelor's Degree (Masters degree preferred) in a health field, employment by IHS or a tribal/health corporation, and a minimum five years experience in the field of public health, including a minimum of two years experience directly associated with injury control programs.

As background, the IHS IPSFP requires only six weeks of travel during the fellowship year. A fellowship year normally begins April of one year and ends the following year in May. A geographic move is not necessary; all fellowship work is accomplished at the individual's current duty station.

"The primary objective of the fellowship program is to increase the knowledge of public health professionals about injury epidemiology; effective, available strategies for primary prevention and control; and the skills necessary to develop a stronger and permanent base from which to build more effective injury control programs". The IPSFP, Classes of 1987-1990, has been successfully completed by 60 fellows, each having earned a IHS certificate recognizing him/her as an Injury Prevention Specialist. It is expected that an additional 19 other fellows, Class of 1991, will also receive their certificate after formal presentation of their special project, May 1, 1992. Below is the IPSFP curriculum that has been followed by Classes 1987-1991. Some of the changes that have occurred since its inception are noted below.

Fellowship Curriculum:

1. May (5 days) - Classes of 1987-1991, Baltimore, Maryland.
Course: "Issues in Injury Control", Professor Stephen Teret, J.D., M.P.H., Director, Injury Prevention Center, School of Hygiene and Public Health, The Johns Hopkins University. Course provides an introduction to the etiology of injuries and the size of the problem in economic and human terms.
2. July (3 weeks); Class of 1987, University of Minnesota.

Classes of 1988-1991, University of Michigan.

1. Required Course: "Epidemiology of Injuries", Professors Jess Kraus, Ph.D., UCLA School of Public Health and Leon Robertson, Ph.D. Course describes current research in injury causation and explores intervention

methodologies. Course Electives: Selected by fellow, usually "Fundamentals of Biostatistics" or "Microcomputer Applications in Epidemiology".
2. September; Classes of 1987-1991, Gallup, NM (one week). Class of 1991, Gallup, NM (two and one-half days). Field exercise: "Implementation of an Injury Surveillance System and Development of Intervention Strategies", Leon Robertson, Ph.D.. Course provides both academic and didactic means to investigate significant factors to injury occurrence.
3. Spring (usually April or May, 2 days), Classes of 1987-1991, Rockville, Maryland.
Formal presentation: "Injury Prevention Specialist Symposium". Each fellow makes a formal presentation of his/her special project to Public Health Service, IHS officials. A final written report, suitable for publication, is due at the same time.

The IHS IPSFP is now into its fifth year of existence and if all members of the Class of 1991 graduate, a total of 79 individuals will have completed the program. So, five years and 79 individuals later I felt that it's time that the IPSFP be evaluated. The author, a fellow of the Class of 1991, chose to conduct a comprehensive evaluation of the IHS IPSFP by surveying all alumni and the current Class of 1991 fellows. Survey questionnaire data are analyzed and several recommendations are offered for the purpose of further improving the IPSFP.

Methods and Materials

To determine if fellow's perceived/identified training needs for this specialized area of public health were met, a survey questionnaire was developed and mailed to each fellow to complete. Specifically, attitudinal data collected through two different survey questionnaires were analyzed and included the following:
* How did the fellows evaluate the academic training? (Johns Hopkins and Summer Epidemiology Institute)
* How did the fellows rate the field surveillance training in Gallup, NM?
* Overall, how did the fellows evaluate the program?
* How highly would fellows recommend the fellowship program to their peers?
* How many fellows have been successful getting their fellowship project published?
* What one factor was most challenging in completing the fellowship program?
* How many fellows are tribally enrolled members?
* What positions do fellows currently hold?

I wanted the instrument to be as simple to read and to complete as possible and not require more than fifteen minutes on average. All 79 fellows, alumni and the current Class of 1991 were asked sixteen identical questions. Alumni were asked nine more questions pertaining to their injury prevention activities subsequent to their fellowship. The names and addresses of all IPSFP alumni and of those participating in the current Class of 1991 were obtained from the IHS Injury Prevention Manager. After much effort, accurate addresses and telephone numbers were acquired for each fellow. I contacted each of the other 78 fellows mid-February, 1992, to introduce myself, obtain an accurate address, and briefly explain the purpose of the survey questionnaire and the importance of their active and timely participation. I explained that I would briefly contact each fellow a second time, approximately four weeks after the mailing, to ascertain whether the questionnaire was received and if it was completed and returned. As noted in the cover letter, results of the study would be forwarded to all fellows once the project was completed.

The survey instrument was pre-tested on six friends. Some were familiar with the IHS IPSFP and some were not. Minor adjustments were made to the survey questionnaire following the pretest. A larger envelope with each fellow's address contained the following; cover letter briefly explaining purpose of survey questionnaire, survey questionnaire, self-addressed postage-paid envelope and plastic bag containing a package of Swiss-Miss Hot Cocoa mix and a Lipton Tea bag. Each fellow was encouraged to take a break and enjoy a fresh cup of hot chocolate and/or tea while completing the survey questionnaire. Approximately one month after mailing the survey questionnaire, each fellow was telephoned and asked two questions: 1) Did you receive the questionnaire? 2) Did you return the survey questionnaire? Each fellow was thanked again for his/her time and information in responding to the questionnaire. As explained in the cover letter and the initial telephone conversation, all survey questionnaire responses were handled anonymously and any identifiers on the return envelope were immediately obliterated.

Results

The total response rate, when adjusted for returned mail, was 100 percent! A response was received from each and every fellow. More survey questionnaires were received from Class of 1990 fellows than there were fellows for that year. A possible explanation: fellows may have been confused about they Class year. As an example, the Class of

1991 fellows were selected to participate in 1990, attended all courses in 1991 and made formal presentation in 1992.

Discussion

Integral components to the IPSFP are the academic courses and field surveillance training. Fellows were asked to rate each session on a scale, 1=poor and 5 =excellent. Johns Hopkins, Summer Epidemiology Institute, and Field Surveillance Training were rated a mean of 4.19, 4.42, 4.09, respectively. Space was also provided on the questionnaire for comment; comments for Johns Hopkins and Summer Epidemiology Institute were 60% and 67% positive in nature, respectively. Comments for the Field Surveillance Training were 45% positive.

The number of enrolled members (federally-recognized American Indian Tribe or Alaska Native Corporation) for Classes 1987-1991 were 29 of 77, or 38% . Not enrolled 48 of 77 (62%). Fellows enrolled 1987-1991 by sex were evenly distributed, 14 female and 15 male. Fellows not enrolled 1987-1991 by sex were 25% female and 75% male.

Nearly 50% of the fellows currently occupy one of the three following positions: Service Unit Sanitarian, District Sanitarian, or Injury Prevention Specialist. Less than 7% of the fellows the past five years have been physician or nurse. Other positions currently occupied by fellows include Acting Area EHS Officer; Acting Associate Director, OEHE; Acting Director, EHS; Director, EHS; Physical Therapist; Program Analyst; Health Planner; Tribal Health Director; and Tribal Safety Officer. Several fellows who formally held field positions while participating in the IPSFP are now serving in more administrative/management level positions such as Director, Environmental Health Services (EHS) and Acting Area EHS Officer. This provides even greater support to IHS Area Injury Prevention programs. Injury prevention program activities are a high priority for 79% of the fellow supervisors. Some of these supervisors identifying injury prevention efforts as high priority are alumni of the IPSFP.

Factors making the fellowship program most challenging to complete were time for project (42%) and collecting data (40%). Academic courses, field surveillance exercise and the formal presentation together made up only 18% . Fellows' comments on what areas of the fellowship program should be expanded included the following: additional time was needed to discuss injury epidemiology, more time to finish project, add one week at an Injury Prevention Center, provide some time at the CDC.

Fellows are expected to complete a paper on their special study suitable for publication in a national journal. Of the 60 fellows who completed the fellowship program (1987-90) only 4 (7%) have been published. 37% of the alumni stated that they have written papers/reports related to injury prevention after the fellowship.

The alumni of Classes of 1987-90 rated the IPSFP very high. Fellow's personal and professional satisfaction (1=minimal and 5=very rewarding) had a mean score of 4.6. Classes 1987-91 stated that they would highly recommend the IPSFP to other health professionals. The level of recommendation (1=not recommended and 5 =highly recommended) had a mean score of 4.6.

One of the most important aspects of the program is the positive action taken as a result of fellows' specific studies. 30 alumni or 52% stated that positive action has been taken as a direct result of their special study (see Table below). Action taken resulting from fellows' special studies include the following: cross-walk signs and lighting problems investigated, guardrails added, legislation introduced to mandate bar server-training state wide, shooting club and rifle range established, etc..

Of the 76 fellows who characterized their own study, 50% were epidemiologic and 21% were injury intervention/implementation studies. Alumni projects average level of completion was 88.8%. The number of projects more than 90% complete for which fellows recommended a follow-up was 68. Of the 14 projects that were less than 90% complete, 11 fellows said the project should be completed and/or a follow-up conducted.

Conclusion

Overall, the IPSFP received rave reviews from alumni and the current Class of 1991 fellows. The following recommendations are offered on behalf of all IPSFP fellows, for the distinct purpose of further improving an already exceptional program. Recommendations:

1. More fellowship projects published in national journals.
2. More physician and nurse involvement and participation in the IPSFP.
3. Evaluate the effectiveness of the field surveillance portion of the IPSFP.
4. More recruitment and participation of enrolled members in the IPSFP.
5. An additional session be added to IPSFP preferably between September and May.
6. IHS should further explore various methods to have IPSFP credentialed by a nationally recognized body, e.g., the American Public Health Association or The John Hopkins University Injury Prevention Center.

Table: EXAMPLES OF POSITIVE ACTION TAKEN SUBSEQUENT TO FELLOWS' SPECIAL PROJECTS, CLASSES 1987-1990

* CROSS-WALK SIGNS, LIGHTING PROBLEMS INVESTIGATED
* GUARDRAIL ADDED
* "HEADS UP" PROGRAM FOR SCHOOLS FUNDED BY DEMONSTRATION PROJECT GRANT
* FIRST RESPONDER TRAINING BEING CONDUCTED & SYSTEM DEVELOPMENT
* LEGISLATION INTRODUCED TO MANDATE SERVER TRAINING STATEWIDE
* MILE MARKERS PLACED ON TWO BIA ROADS
* PEDESTRIAN WALK-WAY INSTALLED
* SHOOTING CLUB AND RIFLE RANGE ESTABLISHED
* STREET LIGHTING INSTALLED AND REDUCED PEDESTRIAN COLLISIONS AND ASSAULTS
* EDUCATION OF PERSONS RESPONSIBLE FOR ENFORCING THE LAW