A Method of Allocating Resources for Health Education Services by the Indian Health Service

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DOCUMENTED EFFORTS to define a community's requirements for health education services are blatently absent from the literature. Similar absences are noted when one searches for information on health education staffing schemes. One reason may be that so many types of health educators working in different agencies and at different levels preclude efforts to standardize health education across community lines and establish a base of commonality.

For example, the recommended number of health educators assigned to a given area was reported to range from 1 per 5,000 population (*1*) to 1 per 150,000, ac-

cording to Ross Alexander, president of California Health Educators, in a 1974 personal communication. The assignment of health educators seems to be based more on the availability of funds or on the need for health educators as seen by health authorities, rather than on a community's requirements or on the amount of service that can be given in one person-year of health education.

Staffing formulas for health service and other work situations are not new; hospitals and private industry have been using them for years. However, to date there are few organized and realistic health education service and staffing schemes that can be used as a guide in the development, implementation, and evaluation of health education work.

The Indian Health Service (IHS) has determined the requirements for providing health education services in its service units and the allocation of staff to meet these requirements. The information presented here may provide a formula or model that can be applied to other situations, although I recognize that the model I describe is not universally applicable. The formula suggested is a normative standard, which may be more useful in similar situations (such as Indian reservations) than in dissimilar situations (such as New York City). Or, to use Green's example (*2*), it may be more reasonable to compare specific patient education programs in similar kinds of hospitals than to compare similar programs in dissimilar hospitals.

Some health educators will not support the idea of expressing health education work in terms of available service minutes per person-year as I do here. These educators may argue that the discipline is not yet advanced enough to suggest the kind of specificity expressed here. However, health authorities are hiring health educators to work at many levels. These positions require justification, funds, and accountability. My hope is that the model will stimulate the development of other health education service and staffing schemes.

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The IHS Health Education Program

The Indian Health Service of the Department of Health, Education, and Welfare serves approximately 498,000 people. From its headquarters and 9 area offices or regions, a full complement of public health professionals provide technical supervision and consultation to 86 service units.

At the service units or primary care facilities, the comprehensive health services generally available include curative, preventive, and rehabilitative activities. The health education program is an integral part of Indian Health Service operations. IHS educators work in clinics, schools, and communities. Although they serve a relatively small and homogeneous population, they often must deal with linguistic, cultural, educational, and geographic barriers.

Approximately 80 health educators are employed by the IHS. In 1974, there was an average of 1 health educator for 6,200 people in a service unit, based on 80 health educators for 498,000 people. Three categories of health educators are employed: public health educators (MPH in public health education), community health educators (usually a BS or MS in a related field), and a small number of health education assistants (most are health education aides or interpreters, or both, and currently 2 years of college are recommended for these persons).

The health education program is aimed at raising the health status of the Indian population through patient education, community services, school health, and staff support (*3*). Specific program components are: encouragement of the self-determination concept; patient education; school health education; resource utilization and coordination; in-service staff education; community organization; consumer education that is related to optimum use of available health services; promotion of health careers; and consumer involvement in the identification and solution of health problems.

Factors Affecting Health Education Needs

Unlike most Americans, Indians have a unique health culture heavily linked with nature and based on living in harmony with the elements (*4*). Gross differences exist in the levels of health of the Indian population and the general U.S. population (*5*). For example, the death rate from accidents among Indians is three times the all-

races rate. Cirrhosis of the liver is the 4th leading cause of death among Indians, but it is 10th in the United States. The crude death rate for cirrhosis of the liver has increased 221 percent since 1955. The crude death rates for suicide, diabetes mellitus, and homicide have also increased considerably during this period. The neonatal death rate is 2.3 times the U.S. all-races rate. The postneonatal mortality rate, an important indicator for determining the health culture in a community, is four times that of the U.S. white population. Otitis media has been the most frequently reported disease among Indians and Alaska Natives in recent years. In 1971, "strep" throat and scarlet fever replaced gastroenteritis as the second leading cause of illness. Influenza and pneumonia are the fourth and fifth leading notifiable diseases (*5*).

The severity of health problems, environmental factors, low economic level (*6*), geographic isolation, high alcoholism rates, and low education level clearly point up the need for education and community organization efforts if Indians are to assume greater responsibilities for managing or solving their health problems.

A health education staffing formula, based on the aforementioned program components, has been developed. The formula states that 1 health education person-year can adequately provide for 4,430 people. The following list of factors is important for determining staffing formulas for health educators, not only in Indian communities but also in other communities; these factors may justify deviations from the suggested health educator-population staffing formula for Indian communities.

Population characteristics: Density, education level, percentage of adults with less than 9 years of education (information available from census data); income, percentage of families with less than $5,000 a year income and percentage of persons earning less than $2,000—below poverty level (information available from census data); extent of dependence upon medical services—some service units report that more than 90 percent of the families are seeking medical services annually; level of acculturation with dominant society; language barriers; age distribution; and school enrollment.

Health services: Range of services provided; number and type of health service personnel available; number, type, and size of health service facilities; and influence, if any, of traditional healers.

Community factors: Number and type of community schools; level of development and organization of the community; physical characteristics such as transportation, communication, climate, travel time to cover the assigned area.

If quality services are to be provided by the Indian Health Service, it is unrealistic for health educators to serve large populations because the success of health programs on Indian reservations cannot depend on the mass media, implementing ordinary health information programs, or engaging in similar pursuits. In Indian settings, the effectiveness of a health education program is directly proportional to the health educator's opportunity to work with individual families, professional staff, and the community.

The following description of health education services and the philosophy of health education work is essential to clarify the way a staffing formula was devised (*7*).

Services and Philosophy

Patient services. The suggested working philosophy in the provision for patient services is simple. Only the patient knows what we as professionals need to know in order to do our jobs better. The patient is an expert in how he lives, what his needs are, and what he wants. Although the goal of the health educator is to strive toward preventing illness in a population rather than curing its illnesses, the Indian Health Service health educator does have an obligation in the curative services scheme (*8*).

In patient education, the health educator strives toward improving interpersonal communications in clinical settings. Constantly sensitive to a breakdown of communications between the patient and the health staff, the health educator plans and facilitates measures to reduce or eliminate common misunderstandings. Organized patient-education services require complete cooperation of the clinical staff. The health educator should be engaged directly in at least one continuous clinical education activity at each service unit. At some service units this activity may be assisting in discussions on diabetes with small groups of students, and at another it may be working with the medical staff to develop educational prescriptions.

Minimum acceptable policy at the service units should be that every patient has easy access to verbal or written information about his or her condition and has an opportunity to base decisions on a clear understanding of available alternatives (*9*). Patients must also be assisted with managing their disorders after they leave the health facility. The health educator's role is to assure that these services are provided, by working with appropriate staff and by limited direct teaching of patients when necessary. No more than 5 percent of health educator time per person-year should be spent in direct patient teaching and no more than 10 percent in organizing and participating in planned patient education programs.

Community services. Service to the community consists of engaging in activities that stimulate and create individual and group teaching and learning situations so that the people can study and solve their health problems in the manner most suitable for them. Community services are those which help to ease the decision-making process in organized community settings and include consumer education activities. Existing health data at all service units suggest that Indian people may not have been adequately informed about available health services.

At each service unit, the health educator is to develop, implement, coordinate, and evaluate an interdisciplinary

system for regularly informing the community about health services available and to gear this system especially toward persons who are in need of services but do not seek them. Health educators are to determine who these people are and where they are located and to see that they are personally contacted. In short, the health educator is to consistently promote optimal use of health services and facilities as an ongoing program activity. Approximately 30–35 percent of each health educator's person-year is suggested for community services. A detailed breakdown of time per activity spent in community services would be unrealistic because of varying conditions and priorities at the service units.

Staff support services. Providing staff support services is the most basic and fundamental requirement of each health educator. Health educators must work closely with all staff members and assist all key staff in identifying and strengthening the educational components of their work. Health educators working with these key staff members should develop and keep current a file of the salient health behaviors that staff in each major service unit discipline believe their patients need to adopt. Approximately 30 percent of a health educator's time is suggested for staff support services. (At the Blackfeet Service Unit, it was determined that 12 hours of health educator time were available per key staff member per year.)

School health education services. Health education services in schools are provided in four ways. The health educator (*a*) explores ways to intervene into the school health education curriculum and participates in teacher in-service training, (*b*) promotes health career programs for Indian students, (*c*) provides limited, direct instructional services in the schools, and (*d*) promotes school health programs, such as immunization campaigns and testing for tuberculosis. The health educator must exercise extreme tact in working with teachers of Indian children to insure that appropriate health education materials are included in health-related subjects.

Children have the greatest potential for change in health behavior, because health values are forged early in life. Organized services in schools should begin with Head Start programs. The health educator should provide health education materials and information where possible and, when the time is right, gradually intervene in the health education curriculum for Indian students. Such intervention should be planned to bring about a more comprehensive and practical course in personal health. The primary objective is to help Indian students make wise decisions affecting their health.

School health education services should constitute 20 to 25 percent of the health educator's time. In some locations such services may take as much as 30 percent, depending upon local health problems, priorities, and working relationships. A health educator should not spend more than 5 percent of his available time in direct instructional activities unless that instruction is for teacher in-service training activities.

The Blackfeet Service Unit

A staffing formula was devised by application of the aforementioned factors to the population on the Blackfeet Indian Reservation in Montana. This reservation was selected because it is representative of most major reservations in the United States in terms of population size, health problems, access to health services, and other characteristics.

The age-sex breakdown of the Blackfeet population in 1975 was as follows:

Age	*Total*	*Male*	*Female*
Under 5	696	346	350
5–14	1,633	812	821
15–24	968	480	488
25–34	576	286	290
35–44	471	234	237
45–54	372	185	187
55–64	261	129	132
65 and over	255	127	128
Total	5,232	2,599	2,633

The following are the health education service requirements of one person-year of work for the Blackfeet Service Unit population of 5,210 persons in 1974. (The total time required for this is 102,837 minutes per year.) The actual percentages of time allocated for each type of service appears in the first line of each grouping. These percentages may change to reflect differences among other population groups served. The second line in each category, entitled service per unit, is near constant for all reservation populations. For example, patient education efforts by the health educator should be directed to a suggested 15 percent of the population regardless of size. (While a greater percentage of patients are in need of education, only about 15 percent might take full advantage of direct education services by a health educator. Therefore, a 15 percent minimum is suggested to maximize the effectiveness of a health educator's efforts.) The time per service line in each category will obviously vary according to population, as will the number of units line. The last line in each grouping is a compilation of the required service minutes per year based on specific factors present in each population. A total of 88,600 service minutes are available per health educator person-year. A full work-year contains 124,800 minutes, but only 71 percent is available for actual work performance because annual and sick leave, nonhealth education related administrative duties, and training constitute approximately 29 percent of the available work-year. Therefore, the 102,837 minutes required per year divided by the 5,210 population equals 20 minutes per person, and the 88,600 service minutes available divided by 20 equals 4,430 people per health educator.

The table shows the maximum combination of health education personnel requirements by population range according to the staffing formula and the effect of plac-

Personnel needed for health education work according to population size

Population ranges	Number required				
	Public health educator	Community health educator	Health education assistant	Clerks	Total
Per Indian Health Service area	1	0	0	0.5	1.5
0–3,324	[1] 1	0	0	0	0
3.325–5,370	[2] 1	1	0	0.5	1.5
5,371–7,974	[2] 1	1	1	1.0	3.0
7,975–12,404	1	1	1	1.5	4.5
12,405–15,948	1	1	2	2.0	6.0
15,949–20,378	1	2	2	2.5	7.5

[1] Part time.
[2] May have either 1 public health educator or 1 community health educator.

ing additional types of health educators at the same location.

Patient education service
Time per person-year: 15.2 percent
Service per unit: 15 percent of 5,210 population
Time per service: 20 minutes per person (0.33 hour)
Total time per year: 15,630 minutes (260 hours)

Staff support—key staff members
Time per person-year: 21.8 percent
Service per unit: 31 staff, excluding clinical, maintenance, laboratory, and X-ray personnel.
Time per service: 720 minutes per person (12.0 hours)
Total time per year: 22,320 minutes (372 hours)

Community services
Time per person-year: 38.1 percent
Service per unit; 50 percent of population (population 18 years old and older equals 50 percent of total population)
Time per service: 15 minutes per person over 18 years old
Total time per year: 39,075 minutes (651 hours)

School services
Time per person-year: 24.9 percent
Curriculum development and teacher in-service training:
Time per person-year: 11.8 percent
Service per unit: 15 percent of 86 teachers (based on national ratio of 25 students per teacher: 2,152 students ÷ 25 students = 86 teachers)
Time per service: 960 minutes per teacher
Total time per year: 12,384 minutes (206 hours)
Health career promotion:
Time per person-year: 3.16 percent
Service per unit: 5 percent of 2,152 students
Time per service: 30 minutes per student (0.50 hour)
Total time per year: 3,240 minutes (54 hours)
Direct instruction:
Time per person-year: 1.5 percent
Service per unit: 20 percent of 86 classes (allows health educator to teach 1 session of 20 percent of all classes, 2 sessions of 10 percent of all classes, or 3 sessions of 5 percent of all classes plus 5 percent of health educator's time for preparation)
Time per service: 90 minutes per class (1.5 hours)
Total time per year: 1,548 minutes (26 hours)
School health:
Time per person-year: 8.4 percent
Service per unit: 100 percent of 9 reservation schools
Time per service: 960 minutes per school (16.0 hours)
Total time per year: 8,640 minutes (144 hours)

Discussion

Before the development of the criteria presented here, requirements for health education services differed considerably throughout the Indian Health Service. The criteria have now been officially adopted by the Indian Health Service and are being used to justify all future expenditures of funds for health education personnel and to provide a frame of reference for the establishment of health education staffing standards that will be equitable across the Service.

The implementation of these criteria for health education services at the Blackfeet Service Unit and at other locations has resulted in significant improvements, notably increased job satisfaction and confidence by health educators and greater awareness and respect for health education work by other health professionals. Naturally, there are obvious limitations. A health educator will have difficulties in successfully carrying out a precise plan of work expressed in service minutes. As a guide for the health educator in planning his work year, the criteria have been very helpful; however, priorities change and unforeseen events occur that require adjustments throughout the year.

These criteria are used as a guide for planning and developing standards of performance for Indian Health Service health educators, as well as for assuring an equitable distribution of health education personnel throughout the Indian Health Service.

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