

Frequency of Worksite Health Promotion Activities

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Abstract: The first National Survey of Worksite Health Promotion Activities surveyed a random sample of all private sector worksites with 50 or more employees, stratified by number of employers, geographic location, and type of industry. The 1,358 completed interviews constituted a response rate of 83.1 per cent. Of responding worksites 65.5 per cent had one or more areas of health promotion activity with slightly more than 50 per cent of activities initiated within the previous five years. Overall prevalence by type of activity included health risk assessment (29.5 per cent), smoking cessation (35.6 per cent), blood pressure control and treatment (16.5

per cent), exercise/fitness (22.1 per cent), weight control (14.7 per cent), nutrition education (16.8 per cent), stress management (26.6 per cent), back problem prevention and care (28.5 per cent), and off-the-job accident prevention (19.8 per cent). Mean number of activities across all worksites was 2.1 and for worksites with activities, 3.2. Activity frequency increased with worksite size, was highest in the western region (2.34) and lowest in the northeast (1.96), and varied considerably by industry type. The majority of worksites paid the entire cost of these activities. (*Am J Public Health* 1989; 79: 16–20.)

Introduction

The worksite has been identified as an appropriate target for health promotion activities. Rationales for the workplace as an advantageous site for the efficient delivery of health promotion include: the large amount of time spent there by the majority of the population, the economic and other incentives for employers to invest in employee health promotion, the opportunity to mobilize peer pressure to help employees make desirable changes in health habits, as well as increasing reports of implementation of risk factor reduction at the worksite and some reports of program success.^{1–11}

Response rates varied greatly in the three industry-specific^{12–14} and six statewide surveys of health promotion activities performed between 1978 and 1986^{15–20} and one survey (Colorado) included in their denominator only those worksites with an ongoing activity or planned programs. The reported percentage of worksites with at least one health promotion activity ranged from 17 per cent to 78 per cent. Surveys generally covered hypertension control, smoking cessation, weight control, nutrition, exercise/fitness, stress management and sometimes covered accident prevention, cancer risk reduction, mental health counseling, drug abuse education/referral, and cardiopulmonary resuscitation (CPR). In each survey, the prevalence of any activity and of most specific types of activities increased with worksite size. The results of one survey (California) supported the premise that employers are adopting these activities at an accelerating rate. This paper presents results of the first systematic nationwide assessment of worksite health promotion activities, including descriptive data on worksites surveyed, the employee population, and the frequency and nature of the activities.

Methods

The target population was all worksites in the private sector in the United States with 50 or more employees. The 1984 Dun and Bradstreet listing of private corporation work-

sites was used to identify a sample of worksites representative with respect to employee size, geographic location, and type of industry. The employee size reported by the worksite (which often differed from the size in the Dun and Bradstreet listing) was used for analysis and reporting purposes. Worksites identified as having 50 or more employees in the Dun and Bradstreet listing but reporting fewer than 50 employees were retained in the sample.

A sample of worksites was selected in each of two size categories. In the first category (50–99 employees), 600 worksites were selected with equal probability and allocated proportionally to the number of worksites in the universe in each of 24 classes defined by geographic region (four classes) and type of industry (six classes). In the second category (100 or more employees), 3,000 worksites were selected with equal probability and allocated proportionally to the number of worksites in the universe in each of 72 classes defined by geographic region (four classes), size of worksite (three classes), and type of industry (six classes). The sample selection used the Probability Minimum Replacement Method.²¹

Each sample site was randomly assigned to an interview list so that each list constituted a valid probability sample. Telephone interviews were conducted until a sufficient number of completed interviews was achieved to give coefficients of variation of about 5 per cent for the natural prevalence estimates. Once a list was begun, all the worksites on that list were contacted to ensure a valid probability sample. The 1,700 (Table 1) worksites in the final sample led to 1,358 completed interviews (320 for the employee size 50–99, and 1,038 for employee size ≥ 100).

Sampling weights were equal within each of the two size categories but, to avoid bias from nonresponse, the sampling weights of the respondents were adjusted so that their sum was equal to the number of worksites in the survey population. Because the sample of worksites was not a simple random sample and ratio adjustments were applied to the sample weights, special computer software was used for the computation of frequencies²² and means.²³

The instrument consisted of six sections. The introductory section confirmed that the appropriate worksite had been contacted, that the most appropriate person was being interviewed, and established the extent to which the employer, union, and employee group were providing financing and/or logistical support for these activities. The respondents at each worksite were queried about the demographic characteristics of the workforce, their own position and job respon-

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Editor's Note: see also related editorial p. 11 this issue.

TABLE 1—Telephone Contact Results

	No. of Employees					
	<100		100+		Total	
	n	%	n	%	n	%
Original sample	400	100	1300	100	1700	100
Active at time of data collection*	400	100	1235*	100	1635	100
Completed interviews	320	80	1038	84.0	1358	83.1
Unable to complete interview†	67	16.9	190	15.4	257	15.7
Other‡	13	3.3	7	0.6	20	1.2

*65 worksites went out of business after sample selection but before name/address files were received.

†Out of business, unable to contact, refusal.

‡Incorrect worksite size from Dun and Bradstreet list.

sibilities, and the presence of nine types of health promotion activities: health risk assessment, smoking cessation, blood pressure screening and treatment, exercise and physical fitness, weight control, nutrition education, stress management, back problem prevention and care, and off-the-job accident prevention. Worksites with at least one type of activity were asked to distinguish between passive activities, such as policy or information, and active employee participation, and to characterize the latter types, if present.

A lead letter to worksites introduced the survey and was followed by a computer-assisted telephone interview (CATI) with the person identified by that worksite as most familiar with its health promotion activities. Survey questions were displayed for the interviewer in program-controlled sequences on computer terminals, and responses were entered directly into the computer. The computer automatically performed checks for valid codes, consistency, and completeness.

There were 1,358 completed interviews, a response rate of 83.1 per cent (Table 1). The remaining 16.9 per cent included worksites which refused to participate, gave only partial data, could not be located, or were out of business. To complete an interview small worksites averaged three contacts and large worksites, four. Average interview time was 30 minutes.

Data analysis included frequencies and means, with frequency estimates of the universe obtained using RTIFREQS²² and means using SESUDAAN,²³ both accessed through SAS software.²⁴

Results

Worksites

Dun and Bradstreet data tended to overstate worksite size compared to worksite report. As a result, 137 of worksites reported having fewer than 50 employees despite contrary information in the sampling database. All surveyed worksites are included in the final sample to reflect the total universe based upon the original sampling frame. However, as worksites with fewer than 50 employees were not intentionally sampled, results for the 1–99 employee worksites cannot be generalized to the universe of worksites of that size.

Stratifying variables and frequencies based on worksite responses are displayed in Table 2. Although worksite size is an explanatory factor in the occurrence of all types of health promotion activities, unadjusted prevalences are used to

accurately present baseline data by geographic region and industry type.

Workforce

Full-time employees (working 35 hours or more per week) made up over three-fourths of the workforce at 73 per cent (SE 1.4) of the worksites. Only 13.1 per cent (SE 1.1) of all worksites reported having no blue collar employees. The blue collar percentage of the population tended to decrease with increasing worksite size, with little regional variation.

Some union representation was reported by 25.5 per cent (SE 1.4) of worksites, with frequency varying directly with worksite size. A majority of represented employees was most frequent in the northeast United States (27.4 per cent SE 3.3). The percentage of blue collar workers, male workers, workers less than age 30, and workers represented by a union did not affect probability of a worksite having one or more health promotion activities.

Slightly more than one-half (51.6 per cent SE 2.3) of reported health promotion activities were initiated during the previous five years and 11.3 per cent (SE 1.6) within the prior 12 months. Longer duration activities included those in place 6–10 years (17.6 per cent SE 2.1), 11–20 years (10.4 per cent SE 1.3), and more than 20 years (8.6 per cent SE 1.4).

Health Promotion Activities

At least one type of health promotion activity was reported by 65.5 per cent (SE 1.7) of all worksites surveyed, with 2.1 (SE 0.1) activities per worksite for all responding worksites versus 3.3 (SE 0.1) for worksites with activities. For all worksites means increased from 1.37 (SE 0.1) in the smallest size (<100) to 4.64 (SE 0.3) in worksites with 750 or more employees. Interregional activity ranged from 1.96 (SE 0.2) (northeast region) to 2.34 (SE 0.2) (western region), considerably less than across industry type ranging from 1.47 (SE 0.2) in the "Other" category (Table 2) to 2.64 (SE 0.3) in the "Utilities Transportation Communications industry" (UTC).

The overall and worksite size specific prevalence rates for the nine activity types are shown in Table 2. For each, frequency increased with worksite size. Worksites with 750+ employees had an overall activity frequency of 87.6 per cent (SE 3.9), 1.6 times that of worksites with fewer than 100 employees, which was 55.5 per cent (SE 2.8). Frequency differences between the largest size (750+) and the next largest size (250–749) groups were generally greater than between the three smaller size groupings for each activity type. Frequency differences were small among regions but more pronounced among industries, and rank order by industry varied considerably by activity type.

Of all worksites, 29.5 per cent (SE 1.4) had some type of health risk assessment (HRA) activity. Health risk assessment activities were defined as any activity designed to measure employee health status or health risk, such as health risk appraisal, health examinations, physicals, or screenings. Periodic health or physical examination was available at 77.4 per cent (SE 2.3)* of these worksites and included blood pressure screening, 55.4 per cent (SE 3.1); tests of physical fitness, 15.0 per cent (SE 2.5); cancer screening, 19.5 per cent (SE 2.2); and blood tests for cholesterol, 28.3 per cent (SE 2.8) or sugar, 39.0 per cent (SE 2.8). A health risk assessment questionnaire was available at 24.0 per cent (SE 2.4) of all

*Frequencies for each specific activity are reported as a per cent of worksites with each type of activity.

TABLE 2—Frequency of Health Promotion Activities by Stratifying Variables [Prevalence in Per Cent and Standard Error (SE)]

Variables	% Total Worksite	Any Activity	Health Risk Assessment	Smoking Cessation	Blood Pressure Control	Exercise Fitness	Weight Control	Nutrition Education	Stress Mgmt.	Back Problem Prevention & Care	Off-the-Job Accident Prevention
Worksite Size											
<100 employees	50.2	55.5 (2.8)	18.5 (2.0)	30.1 (2.4)	8.8 (1.7)	14.7 (1.8)	8.6 (1.7)	9.3 (1.7)	15.1 (1.7)	19.2 (2.0)	12.8 (1.6)
100–249	30.5	71.0 (2.8)	34.6 (2.4)	38.4 (2.9)	19.0 (1.8)	23.2 (2.2)	14.2 (1.9)	20.4 (2.3)	33.6 (2.7)	34.9 (2.5)	21.0 (2.4)
250–749	12.9	80.4 (2.7)	41.1 (2.9)	40.0 (3.4)	24.0 (2.7)	32.4 (3.0)	22.5 (2.5)	21.9 (3.0)	37.6 (3.2)	40.7 (3.3)	33.1 (3.2)
750+	6.6	87.6 (3.9)	66.1 (5.4)	57.6 (5.4)	48.8 (5.8)	53.4 (5.6)	47.9 (5.8)	47.7 (4.9)	59.6 (5.3)	46.4 (5.3)	36.8 (5.8)
Region											
Northeast	23.6	62.9 (3.8)	26.8 (3.0)	36.0 (3.4)	15.6 (2.6)	23.0 (1.6)	11.0 (1.7)	16.3 (2.9)	23.5 (2.5)	23.7 (2.7)	20.5 (2.9)
North Central	25.4	67.0 (2.6)	33.5 (2.8)	35.7 (3.3)	17.1 (2.1)	22.8 (2.4)	16.4 (2.4)	19.2 (2.8)	26.2 (2.1)	27.9 (1.8)	19.4 (2.0)
South	32.6	61.8 (3.3)	25.7 (2.0)	30.1 (2.4)	16.4 (1.6)	19.3 (1.8)	14.1 (1.7)	16.1 (1.9)	24.7 (1.7)	31.7 (2.6)	21.4 (2.3)
West	18.4	73.4 (4.0)	33.9 (3.9)	44.2 (3.4)	17.0 (2.5)	24.9 (4.7)	17.9 (3.9)	15.3 (2.8)	34.4 (3.0)	30.1 (2.4)	16.6 (3.2)
Industry Type											
Manufacturing	29.4	65.1 (3.2)	30.1 (2.9)	34.3 (3.0)	18.2 (2.0)	16.7 (2.0)	11.0 (1.7)	10.9 (1.7)	19.8 (2.0)	30.9 (2.4)	20.0 (2.4)
Wholesale/Retail	15.7	60.0 (4.6)	14.4 (2.9)	35.0 (4.3)	14.3 (3.1)	18.0 (4.1)	11.5 (3.4)	15.9 (3.1)	21.0 (3.5)	22.2 (3.2)	18.3 (3.3)
Utilities/Transportation/Communications	3.6	77.9 (6.3)	42.6 (9.6)	21.2 (5.6)	17.5 (6.0)	19.6 (6.7)	13.7 (7.2)	17.0 (6.6)	45.1 (5.7)	35.6 (6.7)	51.3 (7.8)
Financial/Real Estate/Insurance	6.2	60.1 (6.7)	31.4 (5.9)	32.9 (7.8)	13.5 (4.0)	31.3 (5.8)	20.3 (4.5)	19.7 (6.1)	39.1 (6.3)	11.9 (3.5)	10.7 (3.5)
Service	37.5	70.7 (2.4)	35.3 (2.3)	42.0 (2.2)	17.9 (1.7)	28.5 (2.3)	20.1 (2.2)	23.6 (2.4)	33.3 (2.2)	30.3 (2.0)	16.7 (1.8)
Other (includes Construction, Fishing, and Mining)	7.5	51.3 (6.1)	21.5 (4.1)	18.6 (4.7)	9.1 (2.6)	13.5 (4.2)	4.5 (1.6)	5.1 (1.6)	11.7 (3.5)	33.8 (4.1)	29.5 (4.5)
All Worksites		65.5 (1.7)	29.5 (1.7)	35.6 (1.5)	16.5 (1.1)	22.1 (1.2)	14.7 (1.2)	16.8 (1.3)	26.6 (1.2)	28.5 (1.2)	19.8 (1.3)

worksites with HRA activity, but at only 2.9 per cent (SE 0.15) of UTC worksites. None of the “Financial/Real Estate/Insurance” (FRI) or “Other” (OTH) worksites reported mammography screening.

Smoking cessation, the most prevalent activity present in 35.6 per cent (SE 1.5) of all worksites, included formal policies restricting smoking, 76.5 per cent (SE 2.4); information, 54.3 per cent (SE 2.8); classes or workshops, 17.5 per cent (SE 2.4); directly sponsored and self-help cessation materials, 49.7 per cent (SE 2.6). Formal policies restricting smoking were most prevalent at worksites with <100 employees, 84.6 per cent (SE 3.6) and in the “services” (serv) category, 81.8 per cent (SE 3.2). Participatory activities were individual counseling, 15.1 per cent (SE 2.0), group classes or workshops, 19.9 per cent (SE 1.8), and special events or innovations, 23.7 per cent (SE 2.4).

A 16.5 per cent (SE 1.1) prevalence was reported for high blood pressure control activities, ranging from 8.8 per cent (SE 1.7) at worksites with <100 employees, to 48.8 per cent (SE 5.8) at worksites of 750+ employees. Information was provided by 90.7 per cent (SE 2.1), treatment by 23.1 per cent (SE 2.8), referral to an outside physician for treatment by 63.3 per cent (SE 3.6), and special events or innovations by 26.2 per cent (SE 2.9).

Exercise and physical fitness activities were found at

22.1 per cent (SE 1.2) of all worksites surveyed, ranging from 14.7 per cent (SE 1.8) at smaller companies (<100) to 53.4 per cent (SE 5.6) at larger companies (750+). Of worksites with exercise fitness activities, 64.8 per cent (SE 3.0) provided information, 24.9 per cent (SE 2.54) individual counseling, 58.9 per cent (SE 3.5) sponsored group classes or workshops, 26.5 per cent (SE 2.9) subsidized health club membership, 25.4 per cent (SE 2.7) held special events, and 21.5 per cent (SE 2.6) had on-site exercise facilities or equipment for employee use. Worksites with 100–249 employees had the second highest frequency of providing subsidized membership to health clubs (29.9 per cent, SE 4.9) but the lowest frequency of exercise facilities or equipment available at the worksite (13.4 per cent, SE 2.9).

Weight control activities were reported by 14.7 per cent (SE 1.2) of worksites ranging from 8.6 per cent (SE 1.7) (<100 employees) to 47.9 per cent (SE 5.8) (750+ employees). Of these, information was provided by 76.8 per cent (SE 2.9) and self-help materials by 61.5 per cent (SE 3.9). Participatory activities included individual counseling by 42.9 per cent (SE 4.0), group classes or workshops, 51.4 per cent (SE 4.4), follow-up, 48.5 per cent (SE 4.8), and special events 23.0 per cent (SE 3.5). Individual counseling was most common in MAN at 48.2 per cent (SE 8.4) and “service” (Serv) categories at 50.7 per cent (SE 5.3), and group class/workshops

most frequent by far in FRI at 90.4 per cent (SE 6.3). Frequency of follow-up programs by industry type ranged from 50.8 per cent (SE 8.4) in MAN to 17.5 per cent (SE 13.2) in UTC.

The overall frequency for nutrition education activities was 16.8 per cent (SE 1.3) ranging from 9.3 per cent (SE 1.7) at the smaller firms (<100 employees) to 47.7 per cent (SE 4.9) at the larger firms (750+ employees), including information, 89.2 per cent (SE 2.6); group classes or workshops, 42.2 per cent (SE 3.7); individual counseling, 33.3 per cent (SE 3.1); and special events or innovations, 22.8 per cent (SE 2.9). Of worksites with a food service, healthy cafeteria food choices were provided at 51.3 per cent (SE 3.8); of worksites with vending machines, 33.7 per cent (SE 3.3) provided healthy choices.

Stress management activities were found at 26.6 per cent (SE 1.2) of all worksites, ranging from 15.1 per cent (SE 1.7) (<100 employees) to 59.6 per cent (SE 5.3) (750+ employees), with increasing frequency as worksite size increased. Activities included information, 80.7 per cent of worksites (SE 2.7); individual counseling, 39.3 per cent (SE 3.0); group classes or workshops, 58.1 per cent (SE 2.5); follow-up activities, 25.3 per cent (SE 3.5); and special events, 11.5 per cent (SE 1.6). Over 80 per cent reported organizational changes to reduce stress and two-thirds provided special places to relax. The north central region had the highest prevalence for most categories of stress management activity.

Activities to prevent and care for back problems were reported at 28.5 per cent (SE 1.2) of all worksites, ranging from 19.2 per cent (SE 2.0) (<100 employees) to 46.4 per cent (SE 5.3) (750+ employees), including information, 91.4 per cent (SE 1.7); group classes or workshops, 55.5 per cent (SE 3.0); and special events or innovations, 19.7 per cent (SE 2.1).

Almost 20 per cent (SE 1.3) of all worksites had off-the-job accident prevention activities, ranging from 12.8 per cent (SE 1.6) (<100 employees) to 36.8 per cent (SE 5.8) (750+ employees) directed at auto, home, and/or recreational injuries. Information was available at 75 per cent (SE 3.2) of the worksites, group classes or workshops at 27.8 per cent (SE 3.2), and special events at 24.1 per cent (SE 2.8). A formal seat belt policy was in effect at 61.5 per cent (SE 3.4) of worksites.

For nine types of activities surveyed, most companies in all size, region, and industry strata paid the full cost of all activities, including individual counseling at 69.9 per cent (SE 3.1), group counseling or workshops at 76.9 per cent (SE 1.9), and screening at 87.4 per cent (SE 1.9).

At 85.4 per cent (SE 1.9) of worksites with participation activities, all permanent employees were eligible, with a consistent pattern for all stratifying variables. The highest frequency of limiting eligibility to top management or executives was in FRI, at 15.8 per cent (SE 6.9), even though all permanent employees were eligible at 76.8 per cent (SE 7.6) of those worksites.

Coordination of health promotion activities was exclusively in-house at 41.8 per cent (SE 2.7), both inside and outside at 36.3 per cent (SE 2.1), mostly in-house at 14.1 per cent (SE 1.4), mostly outside at 1.7 per cent (SE 0.6), and exclusively outside at 5.4 per cent (SE 1.2). This pattern was consistent across all stratifying variables.

Only 15.9 per cent (SE 1.1) of all respondent companies indicated an identifiable budget allocation for health promotion activities; 55.3 per cent (SE 3.5) did not know the amount allocated for the current year. Distribution of known budget

allocations were \$1–999 at 7.6 per cent (SE 1.9); \$1,000–9,999 at 14.2 per cent (SE 2.5); \$10,000–99,000 at 17.3 per cent (SE 2.7); and \$100,000–500,000 at 4.8 per cent (SE 2.0).

Discussion

Compared to results of statewide surveys performed during the five years prior to this survey, this national survey suggests large prevalence increases in overall health promotion activity, smoking cessation, nutrition education, and stress management; smaller increases were found in exercise/fitness; and no increase noted in weight control. Although methodological differences between surveys and lack of information on the life cycle of health promotion activities make any statements of trends tentative, the fact that greater than 50 per cent of the activities were in place for fewer than five years lends support to growing prevalence of these activities.

Employees at the 750+ worksites are at least twice as likely to have each type of activity as employees in <100 worksites, with prevalence ratios of about 5:1 for blood pressure control and treatment, weight control and nutrition education; 4:1 for stress management; and 3:1 for health risk assessment, exercise/fitness and off-the-job accident prevention. The increased likelihood of large worksites having one or more activities may be due to increased likelihood of dedicated personnel, benefits and health staff. Although regional differences are generally small, the south has a much lower prevalence for smoking cessation, which may relate to higher tolerance for smoking, concern for potential adverse regional economic effects of reduced tobacco consumption, and less state and local governmental action to restrict smoking. The south and northeast share a low relative prevalence of both health risk assessment and stress management. These differences do not correspond to known risk factor differences among employees at different size worksites.

No consistent rank order of prevalence exists among industry types although worksite size may be a confounding variable. A disproportionate number of UTC and FRI worksites are in the two largest categories, while the reverse is true for "wholesale/retail" and "other." Higher industry prevalence of some activities may reflect the type of work performed. MAN, OTH and UTC, associated with strenuous physical activity, have high rank order prevalence of back problem prevention and care activities. The need for many SER personnel to interact with customers may explain the high prevalence of smoking cessation activities, particularly smoking policies.

Prevalence rates for each of the two types of employee participation activities with the greatest evidence for effectiveness—smoking cessation and blood pressure control—are below 20 per cent, suggesting considerable expansion opportunities. Health risk assessment identifies reducible risks, and its results are frequently used to direct participants to specific behavioral change programs. Health risk assessment also supports program evaluation. Greater use of this instrument could therefore increase participation in other types of health promotion activities and permit better tracking of individual and group progress.

Although the contribution of worksite health promotion activities to achieving national health promotion objectives cannot be gauged from this study, all nine activity types support specific awareness and risk reduction objectives and their availability to tens of millions employees suggests that

the workplace be considered an important delivery site in any national risk education effort.

ACKNOWLEDGMENT

This study supported by DHSS/PHS/Office of Health Promotion and Disease Prevention and the Office of the Assistant Secretary for Planning and Evaluation under Contract Number 282-84-0089, with additional funding provided by Johnson & Johnson Health Management, Inc. The findings were presented at the meeting of the Society for Prospective Medicine, October 1987. The authors wish to thank Martha Carmel for her valuable contribution to this project.

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The Paul B. Cornely Postdoctoral Program for Minority Scholars at U-MI SPH

The University of Michigan School of Public Health has completed its first round of admissions to the post-doctoral fellowship program for minority scholars, initiated last year. The first three postdoctoral fellows began their studies last September in this two-year program:

- Thomas LaVeist received his PhD in Sociology from U-MI in 1988, and his dissertation focused on Black-White differences in infant mortality.
- Dawn Smith, MD, recently completed her MPH in Public Health Policy and Administration from U-MI and is currently working on an AIDS intervention project.
- Dr. Verna Keith was an Assistant Professor of Sociology at the University of Texas, doing work on Black-White differences in physician utilization using the National Center for Health Statistics Health Interview Survey.

The program at U-MI School of Public Health has been named the Paul B. Cornely Postdoctoral Program for Minority Scholars. Dr. Cornely is an alumnus of the University of Michigan, having received his bachelor's degree there in 1928, his MD degree in 1931, and his DrPH in 1934. Dr. Cornely was the first Black American to earn a doctorate in a public health specialty. A long-time resident of Washington, DC, he was Director of the Howard University Hospital from 1947 to 1958; founder and first President of the District of Columbia Public Health Association; and the first Black President of the American Public Health Association.

Dr. Cornely has served on a number of White House Presidential Commissions and is an honorary fellow of the Royal Society of Health and of the American College of Hospital Administrators.

For further information about the post-doctoral fellowship, contact: Jan O'Connor, Woody Neighbors, or Marshall Becker, Dean's Office, University of Michigan School of Public Health, Ann Arbor, MI 48109.