

# OCCUPATIONAL HEALTH SERVICES for EMPLOYEES

*A guide for*

*State and Local Governments*

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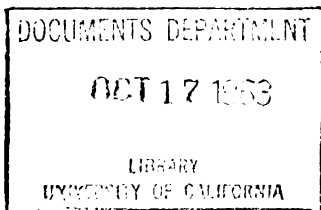
U.S. Public Health Service  
PHS # 1041



# **“ OCCUPATIONAL HEALTH SERVICES FOR EMPLOYEES**

**A Guide for State and Local Governments**

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and  
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*U.S. Dept. U.S.P.H.S.*  
**U.S. DEPARTMENT OF HEALTH, EDUCATION,  
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## Foreword

In addressing the President's Conference on Occupational Safety in March 1962, the Honorable Anthony J. Celebrezze, then Mayor of Cleveland, Ohio, and now Secretary of Health, Education, and Welfare, reported that sound management has assumed a new importance in municipal administration in the sixties. "For most cities, responsibility for providing expanded services and undertaking new programs has increased more rapidly than tax resources available to do the job. This places a high premium on doing the most effective job possible in order to get the most out of the limited resources available." Secretary Celebrezze was considering human resources.

State and local government agencies now employ over 6 million men and women. They are engaged in a wide variety of occupations, in many of which the possibility of exposure to health and safety hazards is great. The need to conserve health and promote efficiency has increased the interest of both State and local government officials in good safety and health programs. A number of these officials are seeking information on program content and on what other government agencies are doing. This publication has been prepared primarily to answer such requests and to stimulate greater interest in the health needs of government workers. It should, however, be useful to anyone who is interested in occupational health services for an employee group, since the general objectives of all occupational health programs are the same.

Material was secured from publications, and through correspondence and personal interviews. It is limited to data on health services available to employees at their place of work or nearby, in health units staffed by physicians and nurses. The environmental and clinical aspects of occupational health, workmen's compensation, and health services not directly associated with the workplace have been mentioned but are not covered. An attempt has been made to show the need for good occupational health programs and their value, and to provide suggestions for program planning.

A limited number of programs now being operated by State and local government agencies have been described in detail. The inclusion of certain programs and the omission of others does not imply a judgment as to the merits of any program. Those selected for inclusion are examples of programs developed through a variety of methods and under various auspices. They represent programs where employees in various occupations are covered rather than services designed for some particular occupational group, such as policemen or firemen.

Suggestions for program planning are based primarily upon the publications of professional organizations and other recognized authorities, thereby bringing together the best thinking in this field. Moreover, sources are given from which additional ideas and useful facts can be secured. Permission to use this material is gratefully acknowledged.

The authors wish to thank particularly the officials of State and local agencies who so generously gave time for personal interviews and provided information on their programs. They are also grateful to members of the Division of Occupational Health, who reviewed the manuscript and made constructive suggestions, and to the Public Personnel Association for its interest in the project.

## Organization of Material

The material is presented in nine sections. The first provides information on the rapid growth of employment in State and local government agencies throughout the United States and in many States and cities. Section II discusses the great loss to the work force resulting from disability and applies U.S. National Health Survey estimates of disability to government employees.

Sections III through VIII summarize information now being sought by officials interested in planning an occupational health program. Various significant facts, together with sources of more detailed information, are presented on a number of subjects. Section III comments on management's attitude toward occupational health services and the tendency toward broader objectives. Section IV discusses the scope and objectives of an occupational health program and, also the extent to which companies with programs are now providing certain types of service. The various methods used by companies in providing services and standards for professional personnel are reported in Section V. The importance of well-planned medical facilities and sources of assistance are covered in Section VI, and administration and records in Section VII. Section VIII presents cost figures from a recent survey and summarizes factors that must be considered in estimating costs; it also provides specific information on how certain companies evaluate their program and outlines standards for evaluation.

Section IX describes in detail programs now being operated by State and municipal agencies for their employees. In general, the descriptions cover such items as background, current programs, personnel and facilities, utilization of services, operating costs, program evaluation, and related benefits. The experience of these programs should be useful to officials responsible for the development and direction of programs.

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## Employment in State and Local Governments

Government ranks third as an employer of civilians. It is outranked only by the manufacturing industry and by the wholesale and retail trade. Federal, State, and local agencies employed 9.1 million civilians in 1961. As in other industries, these workers are engaged in a variety of occupations and are encountering work-associated safety and health hazards.

State and local government employees now outnumber Federal civilian employees more than two to one. Over the last 10 years, Federal employment has remained fairly constant, but State and local government employment has increased steadily (fig. 1). Monthly payrolls for State and local agencies amounted to \$2.4 billion in 1961. The Federal monthly payroll for this period was \$1.2 billion, which included payment to 1 million civilians engaged in national defense and international relations. While monthly payrolls of Federal agencies increased 40 percent between 1951 and 1961, the payrolls of State and local agencies more than doubled.

State employment increased 51 percent between 1950 and 1960, with 41 States reporting an increase of more than 25 percent (table 1). Four States (Arizona, Delaware, Montana, and Nevada) had increases of 100 percent or more, and an additional four (California, Colorado, Michigan, and New Mexico) reported increases varying from 75 to 100 percent. Employment in local government units increased 49 percent throughout the United States during the same period.

As may be expected, both State and local government employees are concentrated in thickly populated States. Table 2 ranks States according to number of such employees within the State. Eighty percent are in 23 States, with the largest numbers reported in New York, California, Ohio, Illinois, Texas, and Pennsylvania. Over 35 percent of all State and 43 percent of all local government employees are in these 6 States.

Slightly more than one-third of all local government employees are with city governments. Although these 1.7 million city workers are scattered among 18,043 municipalities, almost three-fourths of them are in cities having a population of 25,000 or more. As shown in table 3, five cities (Los Angeles, Chicago, Detroit, New York, and Philadelphia) employ 23 percent of all city employees. The total monthly payroll for employees of these five cities amounts to almost \$200 million, or 30 percent of the \$644 million paid monthly to city employees throughout the nation.

A distribution of State and local government employment by function shows that one-half of all local government and one-third of all State employees are in educational work. The combined figure is 3.1 million employees. Over 700,000 employees are in health and hospital work, 540,000 are with highway departments, and 345,000 provide police protection (table 4).

State and local governments, then, are "big business," with employment and payrolls in most States and localities increasing rapidly. These 6.6 million employees, who represent 12 percent of all workers in nonagricultural establishments, are entitled to occupational health services similar to those provided to employees of large industrial organizations.

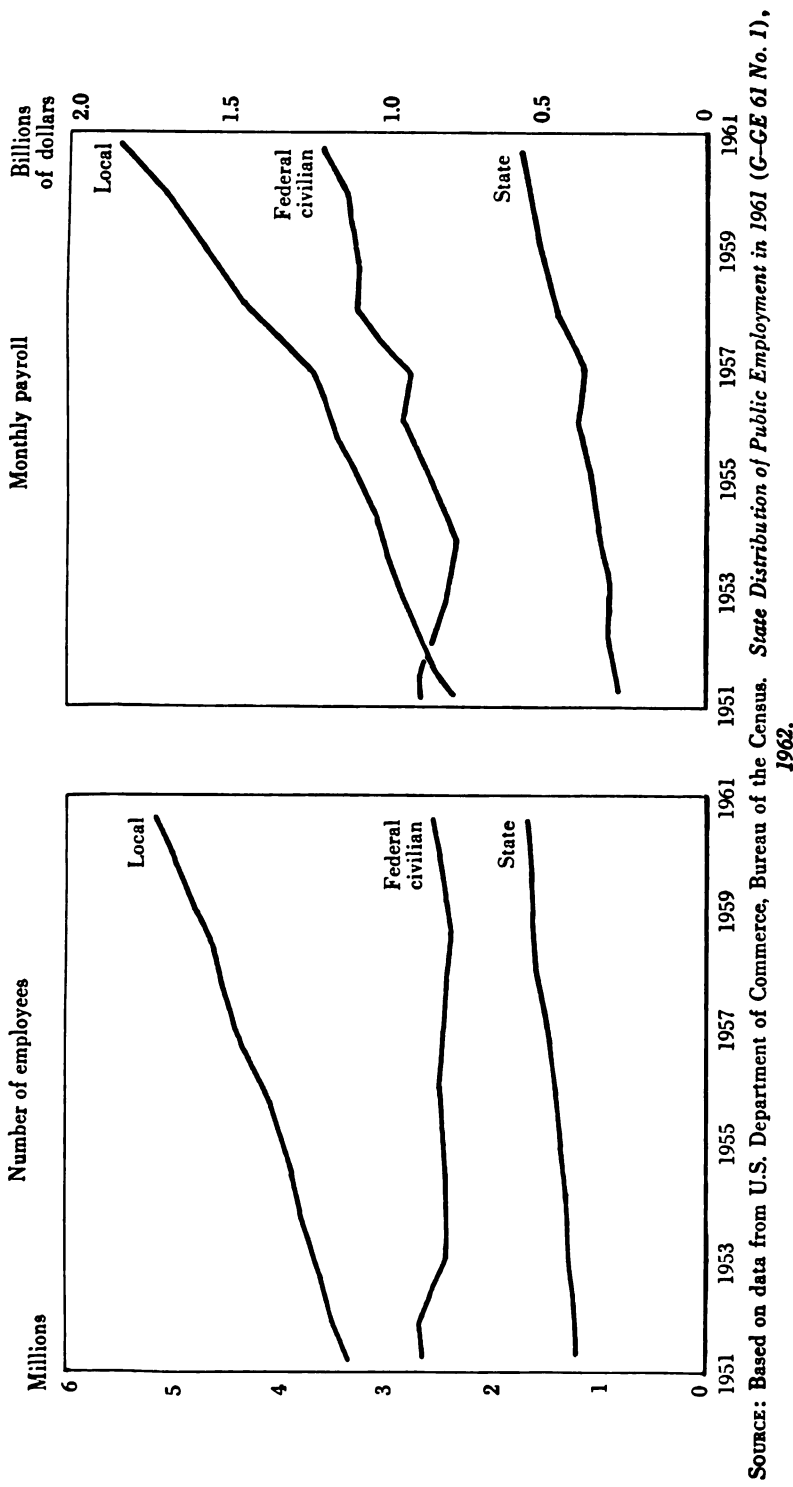


FIGURE 1. Public employment and payrolls, 1951-1961, by level of government.

SOURCE: Based on data from U.S. Department of Commerce, Bureau of the Census. *State Distribution of Public Employment in 1961 (G-GE 61 No. 1)*, 1962.

TABLE 1.—Increase in State and local government employment 1950-60, by State and level of government<sup>1</sup>

State	State employees			Employees of local governments		
	Number (thousands)		Percent increase	Number (thousands)		Percent increase
	1960	1950		1960	1950	
United States.....	1,592	1,057	51	4,795	3,228	49
Alabama.....	27	18	50	76	51	50
Alaska.....	4			4		
Arizona.....	14	7	100	36	16	125
Arkansas.....	17	12	42	41	28	46
California.....	136	75	81	494	282	75
Colorado.....	21	12	75	57	35	63
Connecticut.....	24	17	41	58	38	53
Delaware.....	9	4	125	7	4	75
District of Columbia.....				26	20	30
Florida.....	39	25	56	136	62	119
Georgia.....	27	18	50	100	60	67
Hawaii.....	15			7		
Idaho.....	8	7	14	19	14	36
Illinois.....	65	42	55	263	184	43
Indiana.....	41	26	58	118	83	42
Iowa.....	28	21	33	80	69	16
Kansas.....	25	16	56	78	48	63
Kentucky.....	24	20	20	60	42	43
Louisiana.....	43	30	43	82	47	74
Maine.....	11	9	22	27	22	23
Maryland.....	25	16	56	75	38	97
Massachusetts.....	40	35	14	142	125	14
Michigan.....	67	38	76	218	156	40
Minnesota.....	33	25	32	104	77	35
Mississippi.....	19	14	36	61	38	61
Missouri.....	32	22	45	103	74	39
Montana.....	10	5	100	19	14	36
Nebraska.....	16	11	45	46	35	31
Nevada.....	4	2	100	9	5	80
New Hampshire.....	8	7	14	16	12	33
New Jersey.....	35	22	59	159	105	51
New Mexico.....	14	8	75	23	12	92
New York.....	121	84	44	560	405	38
North Carolina.....	101	71	42	34	23	48
North Dakota.....	8	5	60	24	25	0
Ohio.....	66	38	74	268	182	47
Oklahoma.....	29	20	45	60	42	43
Oregon.....	25	17	47	54	32	69
Pennsylvania.....	83	67	24	240	169	42
Rhode Island.....	10	7	43	18	14	29
South Carolina.....	21	14	50	54	34	59
South Dakota.....	8	6	33	24	24	0

See footnote at end of table.

**TABLE 1.—Increase in State and local government employment 1950–60,  
by State and level of government <sup>1</sup>—Continued**

State	State employees			Employees of local governments		
	Number (thousands)		Percent increase	Number (thousands)		Percent increase
	1960	1950		1960	1950	
Tennessee.....	26	17	53	89	60	48
Texas.....	70	42	67	250	156	60
Utah.....	12	8	50	25	17	47
Vermont.....	6	4	50	11	9	22
Virginia.....	39	30	30	82	51	61
Washington.....	32	22	45	90	59	53
West Virginia.....	20	18	11	28	32	19
Wisconsin.....	29	20	45	118	91	30
Wyoming.....	5	3	67	12	7	71

<sup>1</sup> Includes both full- and part-time employees.

Sources: Based on U.S. Department of Commerce, Bureau of the Census, *Statistical Abstract of the United States*, 1951 and 1961 edition. Washington, U.S. Government Printing Office.

**TABLE 2.—Distribution of State and local government employees by States, ranked according to number of government employees<sup>1</sup>**

State and number of government employees	Government employees					
	State and local		State		Local	
	Number	Percent	Number	Percent	Number	Percent
All States.....	6,616,275	100.0	1,626,531	100.0	4,989,744	100.0
Over 300,000.....	2,708,758	40.9	573,265	35.2	2,135,493	42.8
New York.....	680,753		124,009		556,744	
California.....	680,017		146,777		533,240	
Ohio.....	343,129		67,409		275,720	
Illinois.....	340,978		70,308		270,670	
Texas.....	338,340		75,224		263,116	
Pennsylvania.....	325,541		89,538		236,003	
100,000–300,000.....	2,588,916	39.1	644,092	39.6	1,944,824	39.0
Michigan.....	299,319		69,306		230,013	
New Jersey.....	201,609		37,980		163,629	
Massachusetts.....	197,381		41,604		155,777	
Florida.....	191,082		43,486		147,596	
Wisconsin.....	162,038		33,660		128,378	
Indiana.....	160,753		43,861		116,892	
North Carolina.....	147,133		40,533		106,600	
Missouri.....	140,726		34,018		106,708	
Minnesota.....	139,500		34,282		105,218	
Louisiana.....	132,230		47,463		84,767	
Georgia.....	128,626		29,953		98,673	
Virginia.....	125,955		40,545		85,410	
Tennessee.....	123,827		28,247		95,580	
Washington.....	122,438		35,192		87,246	
Iowa.....	107,948		29,092		78,856	
Maryland.....	106,023		27,358		78,665	
Alabama.....	102,328		27,512		74,816	
Less than 100,000:						
27 States and D.C.....	1,318,601	20.0	409,174	25.2	909,427	18.2

<sup>1</sup> Includes both full- and part-time employees in 50 States and the District of Columbia.

SOURCE: U.S. Department of Commerce, Bureau of the Census. *State Distribution of Public Employment in 1961 (C-CE 61—No. 1)*, 1962.

TABLE 3.—Distribution of city employment and monthly payroll, by size of cities, October 1961

Size groups	Number of cities	Employees <sup>1</sup>			Monthly payroll		
		Number	Percent		Thousands of dollars	Percent	
			Actual	Cumulative		Actual	Cumulative
<b>Total</b> .....	18, 043	1, 733, 961	100. 0	.....	644, 166. 9	100. 0	.....
<b>Cities having 1960 population of:</b>							
1,000,000 or more.....	3 5	404, 421	23. 3	.....	195, 484. 7	30. 3	.....
500,000-999,999.....	3 17	208, 218	12. 0	35. 3	91, 399. 1	14. 2	44. 5
300,000-499,999.....	4 21	114, 110	6. 6	41. 9	48, 761. 9	7. 6	52. 1
200,000-299,999.....	4 18	63, 987	3. 7	45. 6	25, 197. 5	3. 9	56. 0
100,000-199,999.....	69	144, 035	8. 3	53. 9	54, 733. 2	8. 4	64. 4
50,000-99,999.....	180	162, 836	9. 4	63. 3	62, 429. 0	9. 7	74. 1
25,000-49,999.....	365	156, 596	9. 0	72. 3	55, 189. 2	8. 6	82. 7
Less than 25,000.....	17, 368	479, 758	27. 6	.....	110, 972. 3	17. 2	.....

<sup>1</sup> Full- and part-time employees.  
<sup>2</sup> Los Angeles, Calif.; Chicago, Ill.; Detroit, Mich.; New York, N.Y.; Philadelphia, Pa.  
<sup>3</sup> San Diego, Calif.; San Francisco, Calif.; Washington, D.C.; Honolulu, Hawaii;  
New Orleans, La.; Baltimore, Md.; Boston, Mass.; St. Louis, Mo.; Buffalo, N.Y.;  
Cincinnati, Ohio; Cleveland, Ohio; Pittsburgh, Pa.; Dallas, Tex.; Houston, Tex.;  
San Antonio, Tex.; Seattle, Wash.; Milwaukee, Wis.  
<sup>4</sup> Birmingham, Ala.; Phoenix, Ariz.; Long Beach, Calif.; Oakland, Calif.; Denver,  
Colo.; Atlanta, Ga.; Indianapolis, Ind.; Louisville, Ky.; Minneapolis, Minn.; St. Paul,  
Minn.; Kansas City, Mo.; Omaha, Nebr.; Newark, N.J.; Rochester, N.Y.; Columbus,  
Ohio; Toledo, Ohio; Oklahoma City, Okla.; Portland, Oreg.; Memphis, Tenn.; Fort  
Worth, Tex.; Norfolk, Va.  
<sup>5</sup> Mobile, Ala.; Tucson, Ariz.; San Jose, Calif.; Jacksonville, Fla.; Miami, Fla.;  
Tampa, Fla.; Des Moines, Iowa; Wichita, Kan.; Jersey City, N.J.; Albuquerque,  
N. Mex.; Syracuse, N.Y.; Charlotte, N.C.; Akron, Ohio; Dayton, Ohio; Tulsa, Okla.;  
Providence, R.I.; El Paso, Tex.; Richmond, Va.  
SOURCE: U.S. Department of Commerce, Bureau of the Census. City Employment  
in 1961 (C-GE 61—No. 2) 1962.

**TABLE 4.—Distribution of employment in State and local governments, by function and level of government <sup>1</sup>**

Function	Number (thousands)			Percent distribution		
	Total	State	Local	Total	State	Local
<b>Total</b> .....	<b>6, 616</b>	<b>1, 627</b>	<b>4, 990</b>	<b>100. 0</b>	<b>100. 0</b>	<b>100. 0</b>
Education.....	3, 050	520	2, 530	46. 1	32. 0	50. 7
Highways.....	540	256	284	8. 2	15. 7	5. 7
Health and hospitals.....	702	346	356	10. 6	21. 3	7. 1
Police protection.....	345	34	311	5. 2	2. 1	6. 2
Natural resources.....	145	113	32	2. 2	6. 9	0. 6
Financial administration.....	212	74	138	3. 2	4. 5	2. 8
General control.....	233	23	210	3. 5	1. 4	4. 2
Other.....	1, 389	259	1, 130	21. 0	15. 9	22. 6

<sup>1</sup> Includes both full- and part-time employees.

SOURCE: U.S. Department of Commerce, Bureau of the Census. *State Distribution of Public Employment in 1961*. (G-GE 61—No. 1), 1962.



## Disability and Work Absence

National Health Survey findings indicate that in the United States persons 17 or more years of age lose over 599 million days from work annually because of illness or injury.<sup>1</sup> A day was counted as lost if the person would have been working at a job or business that day but instead lost the entire day because of disability. About two-thirds of this work loss occurred among "usually working" persons; i.e., those who were employed most of the time during the fiscal year in which the survey was made.

By assuming that absenteeism among government workers is average, we estimate that the annual loss from work due to illness and injury by full-time equivalent employees is 10 million days by State and 30 million days by local government workers. In terms of 1960 wages for government workers, this amounts to more than \$528 million a year. Estimates for groups of various sizes are shown in Table 5.

In addition to days lost, "usually working" persons in the United States are estimated to be restricted in their activities for 815.7 million days during a year. On this basis, State employees are experiencing 20 million days of restricted activity and local government employees 58 million.

National Health Survey reports show that in one year "usually working" persons lost over 193 million days because of acute conditions, principally respiratory (table 6). On a typical workday, 37,000 persons who usually work are estimated to be absent because of asthma-hay fever, 29,000 because of chronic sinusitis, and 16,000 as a result of chronic bronchitis. Although these figures are not additive, they represent a large volume of illness. Heart disease and hypertension cause an estimated loss of 26 million days annually. Injuries caused over 87 million days to be lost in one year, with one-half of the loss due to injuries that occurred while at work (table 7).

The loss to the work force because of prolonged disability is tremendous. Under its disability program, the Social Security Administration accepted the application of 179,419 permanently disabled persons in 1960. An addi-

<sup>1</sup> The National Health Survey is conducted by the Public Health Service, U.S. Department of Health, Education, and Welfare. Data on the health of the Nation are derived from a continuous probability sample of the nonindustrial civilian population residing in the United States. The method of collection is by household interview, and the sample is designed so that interviews are conducted every week of the year in every State. Over the 3-year period July 1957-June 1960, approximately 111,000 households or 360,000 persons were contacted. Reports are published in series and are available from the Superintendent of Documents, U.S. Government Printing Office, Washington 25, D.C.

tional 113,195 applications were denied for various reasons. Fifty-seven percent of the persons who were accepted were under 60 years of age. Among Federal Government employees, the number retiring because of disability increased 84 percent between two 8-year periods (table 8). During these years, employees contributing to the retirement system increased only 15 percent.

A report on absence from work on an average workday, because of illness lasting a workweek or more, for selected occupations and industries, based on the monthly survey of the labor force during the period July 1959 to June 1960, shows that male government workers had a higher illness rate than other male wage and salary workers (table 9). Among 4.7 million male employees of government agencies, the age adjusted rates per 1,000 employees were 16.4 for those in public administration, 10.7 for educational groups, and 18.7 for employees of all other government agencies. The comparable rate for all male wage and salary workers as well as for those in private non-agricultural industries, was 13.3 per 1,000 employees. Female workers in public administration and other government agencies except educational also had higher than average rates. The same study indicates that on an average workday 0.5 percent of all government workers engaged in educational pursuits and 1.3 percent of all other government employees are absent because of illness lasting one week or more.<sup>2</sup> Since most spells of illness last less than a week the daily absence rate is much higher than these figures indicate.

*Death rates.*—When deaths occurring in 1950 among men 20 to 64 years of age with work experience were classified according to occupational data reported on death certificates, it was found that 7,947 deaths had occurred among male employees of State and local public administrative agencies.<sup>3</sup> The 1950 Census of Population reported 743,935 male State and local employees in this industrial category (Census classification codes 926 and 936). The actual number of deaths reported among these workers was 17 percent higher than the expected. The expected, in this instance, was based on 1950 Census data and represented the number of deaths that would have occurred among employees of State and local public administrative agencies if the death rate for the total male population with work experience had prevailed. While the difference between the actual and expected is not too great, especially in view of the various socioeconomic and reporting factors that could have been responsible for variation, it is interesting when compared with rates for other groups. For example, the rate for employees of Federal public administrative agencies was 25 percent below the expected. The rates for most manufacturing industries and for a number of other industrial groups were also below the expected.

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<sup>2</sup>Enterline, P. E. Work Loss Due to Illness in Selected Occupations and Industries. *Journal of Occupational Medicine*, 3: 405-411 (September) 1961.

<sup>3</sup>Guralnick, Lillian. *Mortality by Occupation and Industry Among Men 20 to 64 Years of Age, United States, 1950*. U.S. Department of Health, Education, and Welfare, Public Health Service, National Vital Statistics Division, September 1962.

Over 45 percent of the deaths among male employees of State and local public administrations in 1950 were among men between 20 and 55 years of age. Cardiovascular renal diseases caused 4,237 deaths, and malignant neoplasms were responsible for 1,196, with approximately 40 percent of the deaths in each instance occurring among men under 55 years of age.

*Work injuries.*—The Department of Labor reports that the volume of disabling work injuries in State and local government agencies was 76 percent higher in 1961 than in 1950; employment increased 60 percent during this period. This upward trend in injuries culminated in 197,000 disabling work injuries in 1961. In the Federal service the annual volume of disabling work injuries rose only 10 percent during the same period, while employment increased 19 percent.

The Commissioner of Labor Statistics, U.S. Department of Labor, presented these injury figures at the President's Conference on Occupational Safety in 1962 with the comment that they amply demonstrate that there is an overall accident prevention problem of considerable magnitude in government service. The next step, according to the Commissioner, is to identify the particular activities in government which have the least favorable injury experience so that agencies can concentrate on accident prevention efforts in those areas. "In the Federal Government," he stated, "we have reasonably comprehensive information for this purpose . . . . In the area of State and local governments, we have far less information on which to base an appraisal of the problems which must be solved. Only a few of the many State and local government units maintain comprehensive records of their employees' injury experience. As a result, we have only crude estimates of the overall national record. We cannot at this time present a meaningful national frequency rate for State, county, or municipal employees. We are, however, making some progress in the collection of injury-rate information for particular kinds of activities in this field . . . . Granted we need much more information than we have, but I think that what we have is enough to demonstrate that there is a serious and largely unmet need for accident prevention programs of considerable magnitude in the State and local government services." This is also true of occupational health services, which contribute to reducing injuries as well as illness.

*Studies of teachers.*—Studies of sickness and work absence among teachers, as one large segment of State and local government employees, are revealing. One such study in the Los Angeles City schools showed that many teachers were leaving the profession each year because of ill health. In this school system, which maintains high health standards for prospective teachers and excellent sick leave regulations and health facilities for its employees, ill health accounted for an average of 23 percent of the annual turnover over an 18-year period. The mean age of separation due to ill health was 54.14 years for women and 55.43 years for men. Ill health became an important factor after 40 years of age, very important after 55, and extremely important between the ages of 56 and 60. The leading causes of turnover due to ill

health proved to be nervous disorders, hypertension, neurosis, and arthritis. The main causes of death were cancer and heart disease.<sup>4</sup>

Sick absence among teachers is also an important and costly item. In its publication *Fit to Teach (A Yearbook on Teacher Health)*,<sup>5</sup> the American Association for Health, Physical Education, and Recreation reported that during one day 235,000 pupils will be taught by a substitute because regular teachers are ill. During one school year some 600,000 teachers are absent one or more days because of illness with lost time totaling no less than 1.45 million days. The same publication reports that while the primary responsibility for health belongs to the individual, helping teachers to reach and maintain the best possible health status is a great challenge to school administrators, boards of education, parents, and community groups. "Despite the tremendous advances in occupational health programs as evidenced by health conservation in industry, a comparable organized effort does not seem to exist on behalf of teacher health."

Several years ago, an appraisal of faculty health at one of the country's leading State universities, revealed that when letters, offering a health examination, were sent to 705 faculty members, only 368 or 52 percent responded within a reasonable length of time. A review based on 294 examinations revealed that 27 percent of the people examined appeared not to have an effective liaison with a family doctor; 46 percent had never had a complete physical examination; and 13 percent had not seen a doctor for 5 or more years. Among the 294 persons examined, 239 or 81.3 percent were found to have a total of 465 significant defects that they had not known about.<sup>6</sup>

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<sup>4</sup>Stirdivant, C. E. Teacher Turnover Due to Ill Health. *California Teachers Association Journal* 53: 14 (November) 1957.

<sup>5</sup>Washington. The Association, 1957. 249 pp.

<sup>6</sup>Tupper, C. J. and Beckett, M. E. Faculty Health Appraisal: University of Michigan. *Industrial Medicine and Surgery* 27: 328-332 (July) 1958.

**TABLE 5.—Estimated annual work loss by State and local government employees, due to illness and injury, and dollar value of loss, United States and units of specified size, 1960<sup>1</sup>**

Government unit	Full-time equivalent employees (thousands)	Estimated work days lost (thousands)	Estimated dollar value of work loss (millions)
All State and local governments....	5, 570	40, 661	\$528. 6
State.....	1, 411	10, 300	133. 9
Local.....	4, 159	30, 361	394. 7
State or local government with.....	100	730	9. 5
Do.....	75	548	7. 1
Do.....	50	365	4. 7
Do.....	25	183	2. 4
Do.....	10	73	1. 0
Do.....	5	37	. 5

<sup>1</sup> Estimates are based on National Health Survey reports, which show an average work loss from illness and injury of 7.3 days per "usually working" person, and on an average monthly earning of \$399 per full-time State or local government employee in 1960, as reported by the Department of Commerce, Bureau of the Census. Assuming that employees are paid on a monthly basis (Saturdays, Sundays and holidays included) this means an average annual salary of \$4,788 or an average of \$13 a day.

SOURCE: Prepared by the Division of Occupational Health, Public Health Service, U.S. Department of Health, Education, and Welfare.

**TABLE 6.—Number of work-loss days and number of work-loss days per 100 "usually working" persons 17 years of age and over due to acute conditions, by condition groups and sex: United States, July 1958–June 1959**

Condition group	Number of work-loss days (in thousands)			Number of days per 100 "usually working" persons 17 years and over		
	Both sexes	Male	Female	Both sexes	Male	Female
Total conditions.....	193, 198	133, 108	60, 090	326. 2	321. 3	337. 7
Infectious and parasitic disease...	17, 841	11, 453	6, 388	30. 1	27. 6	35. 9
Upper respiratory conditions.....	39, 461	24, 306	15, 155	66. 6	58. 7	85. 2
Other respiratory conditions.....	39, 777	26, 701	13, 076	67. 2	64. 5	73. 5
Digestive system conditions.....	9, 700	6, 321	3, 380	16. 4	15. 3	19. 0
Fractures, dislocations, sprains, and strains.....	33, 733	29, 166	4, 568	57. 0	70. 4	25. 7
Open wounds and lacerations.....	7, 279	6, 102	1, 176	12. 3	14. 7	6. 6
Contusions and superficial injuries.	9, 898	6, 050	3, 848	16. 7	14. 6	21. 6
Other current injuries.....	8, 843	6, 930	1, 913	14. 9	16. 7	10. 7
Deliveries and conditions associated with pregnancy.....	2, 725	.....	2, 725	15. 3	.....	15. 3
All other acute conditions.....	23, 941	16, 079	7, 862	40. 4	38. 8	44. 2

SOURCE: U.S. Department of Health, Education, and Welfare; Public Health Service. *Health Statistics from the United States National Health Survey* (Series B—No. 18.) Washington, The Department, 1960.

TABLE 7.—*Work-loss days due to injuries for "usually working" persons,<sup>1</sup> by type of injury and class of accident*

Type of injury	Number of days lost (thousands)			Percent due to injuries occurring at work
	All injuries	While at work		
		Motor vehicle	Other	
All injuries <sup>2</sup> . . . . .	87, 127	11, 346	32, 592	50. 4
Fractures and dislocations . . . . .	21, 785	3, 100	7, 623	49. 2
Sprains and strains . . . . .	16, 244	1, 362	10, 277	71. 7
Head injuries . . . . .	2, 092	627	499	53. 9
Lacerations and abrasions . . . . .	7, 814	936	2, 735	47. 0
Contusions . . . . .	9, 363	601	4, 031	49. 5
Burns . . . . .	737	.....	304	41. 2
Effects of weather and exposure . . . . .	1, 314	.....	68	5. 2
Complications of therapeutic procedures . . . . .	1, 065	.....	.....	.....
All other . . . . .	4, 864	294	1, 872	44. 5
Orthopedic impairment:				
Back and spine . . . . .	2, 865	335	1, 053	48. 5
Upper extremities . . . . .	2, 442	1, 225	.....	50. 2
Lower extremities . . . . .	1, 998	72	352	21. 2
Multiple and other sites . . . . .	1, 647	.....	251	15. 2
Residual of intervertebral disc injury . . . . .	3, 664	1, 450	1, 543	81. 7
All other chronic residuals of trauma . . . . .	9, 232	1, 342	1, 983	36. 0

<sup>1</sup>Restricted to "usually working" persons 17 years of age and over.

<sup>2</sup>The sum of the days for all injuries is greater than the total number of person-days of disability because a single disability-day may be associated with more than one injury.

SOURCE: U.S. Department of Health, Education, and Welfare; Public Health Service. *Health Statistics from the United States National Health Survey, Disability Days* (Series B—No. 16.) Washington, The Department, 1960.

**TABLE 8.—Disability annuitants<sup>1</sup> among Federal Government employees during two 8-year study periods, July 1, 1940–June 30, 1947, and July 1, 1948–June 30, 1955**

Type of disability	Disability annuitants <sup>1</sup>			
	1940-47		1948-55	
	Number <sup>2</sup>	Percent	Number <sup>3</sup>	Percent
Total <sup>4</sup> .....	29, 641	100. 0	54, 462	100. 0
Cardiovascular diseases.....	13, 811	46. 0	24, 665	45. 0
Nervous system diseases.....	4, 881	16. 0	7, 960	19. 0
Diseases of bones, joints and muscles.....	3, 735	12. 6	6, 880	17. 0
Diseases of respiratory system.....	2, 617	8. 0	5, 556	10. 0
Pulmonary tuberculosis.....	1, 668	5. 0	2, 975	5. 0
Diseases of digestive system.....	1, 165	3. 8	2, 357	4. 0
Cancer (all systems).....	910	3. 0	2, 497	4. 5
Diseases of the eyes.....	851	2. 8	1, 368	2. 5
Diseases of genitourinary system.....	524	1. 7	813	1. 4
Diabetes.....	458	1. 5	775	1. 4
Thyroid and other endocrine diseases.....	450	1. 5	644	1. 2
Varicose veins.....	354	1. 3	718	1. 3
Hernia.....	289	1. 0	515	. 9
Diseases of the ears.....	178	. 6	403	. 6
Diseases of the feet.....	85	. 3	92	. 2
Miscellaneous.....	177	. 6	.....	.....

<sup>1</sup> Government employees added to the disability retirement roll by the United States Civil Service Commission.

<sup>2</sup> The number of employees contributing to the retirement and disability fund as of September 30, 1947 was 1,510,760. The average age of disability annuitants during first study was 57.4 years.

<sup>3</sup> Average annual number of employees covered under the retirement system during the eight years of the second study period was 1,733,000. Average age of disability annuitants during study was 55.6 years.

<sup>4</sup> Breakdowns do not add to totals since more than one disease is reported for some employees.

SOURCE: Tish, Alexander. Prevalence of Disability Among Government Employees, *Occupational Medicine*, 5: 634-639 (June) 1948, and *AMA Archives of Industrial Health*, 15: 160-166 (February) 1957.

TABLE 9.—*Number of workers, mean age, and illness rates on an average workday, by type of employment and sex, civilian wage and salary workers, United States, July 1959 to June 1960*

Type of employment	Male			Female				
	Number of workers (thousands)	Mean age (years)	Illness rate per 1,000		Number of workers (thousands)	Mean age (years)	Illness rate per 1,000	
			Crude	Age-adjusted			Crude	Age-adjusted
All wage and salary workers.....	36,008	40.6	13.2	13.3	19,255	40.3	15.6	15.9
Agriculture.....	1,393	36.6	7.4	7.8	293	36.2	7.1	7.7
Government.....	4,730	42.1	16.0	16.0	3,034	39.5	12.7	13.2
Public administration.....	2,283	41.9	16.2	16.4	870	38.5	16.1	17.1
Educational services.....	925	41.3	10.6	10.7	1,514	40.6	9.4	9.6
All other government.....	1,521	42.9	18.9	18.7	650	38.1	15.2	16.1
Private nonagriculture.....	29,885	40.8	13.0	13.3	15,927	39.9	16.3	16.6

SOURCE: Enterline, P. E. Work Loss Due to Illness in Selected Occupations and Industries, *Journal of Occupational Medicine*, 3: 405-411 (September) 1961



### Trends in Employee Health Services

Health services at the workplace may be classified into two major groups: (1) those concerned with the work environment and (2) those directly concerned with the employee.

#### *Environmental Health Services*

During the past 50 years government and private groups working in the field of occupational health have successfully eliminated or developed methods for controlling most known occupational diseases. The work environment has been greatly improved, but new problems are constantly arising as a result of new industries and work processes. The need is greater than ever before for frequent surveys by trained personnel and for strict adherence to environmental standards established by official agencies, such as the American Industrial Hygiene Association, the Manufacturing Chemists Association, the National Committee on Radiation Protection, the American Conference of Governmental Industrial Hygienists, the American Public Health Association, and other professional groups.

An evaluation of the occupational environment usually includes (1) a preliminary survey, to determine which operations and environmental physical agents may be hazardous, and (2) a detailed study to determine the amount of air contaminants present and the exposure to physical agents. The surveys are ordinarily made by an industrial hygiene engineer or some one specifically trained in this field.<sup>1</sup> Assistance in conducting studies is available upon request from both government agencies and private enterprise.

The tendency to measure occupational illness and injury in terms of production loss has associated the industrial hygienist more closely with production management than with the medical department, but he must work closely with both departments to fulfill his job satisfactorily. The physician who serves industry must also coordinate his activities with those of the industrial hygienist by becoming familiar with the occupational environment of the industry. He needs this knowledge to match physical abilities against the physical requirements of a job and to assess the influences of the work environment upon employee health.

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<sup>1</sup>U.S. Department of Labor. *Occupational Health Hazards, Their Evaluation and Control*. Washington, U.S. Government Printing Office, 1958. 36 pp.

## **Employee Health Programs**

Industry's interest in providing health services for employees at the workplace developed during the last half century along with its interest in environmental health. The principal motive in both instances was to minimize workmen's compensation costs and to reduce the loss in production due to work absence. Originally, health services were usually confined to care of occupational illness and injury and to emergency care for non-occupational illness. More recently, the tendency has been to include certain preventive services and health education in the programs.

A management survey made several years ago by the National Industrial Conference Board indicates that a transformation has occurred in employee health programs during the last 10 or 15 years and that it has not yet ended. Broader objectives are being set and medical departments are reported to be entering what may be the most significant phase of their existence. This situation is due to the changing attitude of many company managements, who were slow to realize the full potential of their health programs. The main reasons for this change, according to the Conference Board, are as follows: <sup>2</sup>

1. An increase in the number of older and disabled workers.
2. Competition for efficient people and the need to safeguard the health of workers now on the payroll—workers in whom the companies have invested time and money.
3. The great number of emotionally disturbed people, many of whom are on company payrolls.
4. Industrial advances—growing automation and peacetime use of atomic energy (as they affect the individual workers) being new and different problems to the employer.
5. An increasing number of health insurance plans, many of which pay benefits on the first or second day of absence.
6. Encouraging reports about the beneficial results achieved by companies that have learned the value of effective health programs.

The changing attitude of management was also revealed in an attitude study sponsored by the Public Health Service several years ago. The 262 managers who were interviewed were asked: "Do you feel that management should take any responsibility for employee health problems not arising from their work? Why do you feel that management should take this responsibility?" Only about 12 percent of them felt no responsibility. The great majority believed that some of it should be assumed by management for the following reasons: <sup>3</sup>

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<sup>2</sup> National Industrial Conference Board, Inc. *Company Medical and Health Programs (Studies in Personnel Policy No. 171)*. New York, The Board, 1959. 60 pp.

<sup>3</sup> U.S. Department of Health, Education, and Welfare; Public Health Service. *Employee Health Services: A Study of Managerial Attitudes and Evaluations*. Washington, Government Printing Office, 1957. 102 pp.

<i>Item</i>	<i>Percent of managers reporting</i>
Employees are more efficient because they are healthier.....	27.9
We owe it to our employees; sense of obligation.....	19.1
It's good for employees; they need it.....	12.2
To make employees happy; personal interest in employees.....	11.1
To reduce absenteeism; to keep them on the job.....	10.3
It's good for both the company and the employees.....	8.4
To improve employee relations.....	6.1
They're our employees; they belong to us.....	4.2
To secure loyalty; any mention of loyalty.....	2.7
To protect our investment in employees.....	2.3
To reduce turnover.....	1.9
Responsibility for community health (hospitals only).....	1.9
Good public relations.....	1.5
To protect our patients (hospital only).....	1.1
To take care of injuries.....	.8
The union demanded it; negotiations; fringe benefits.....	.8
To reduce workmen's compensation or insurance rates.....	.8
To save money—less money spent on doctor's fees.....	.4
The employees wanted it—they asked for it.....	.4
Other managers do it.....	.4
American Hospital Association recommended it (hospitals only).....	.4
Feel no responsibility at all.....	11.8
Not ascertained.....	5.0

Employee attitudes toward health services at the workplace are also changing as a result of better understanding of program objectives and the more extensive services now provided by many companies. The newer services stimulate interest and bring the employees into closer contact with medical department personnel.

### ***Employee Health Services in the Federal Government***

The passage of Public Law 658 by the Seventy-ninth Congress, in 1946, has greatly encouraged the establishment of employee health programs for Federal employees. Heads of departments and agencies, including government owned and controlled corporations, may, after consulting with the Public Health Service and considering its recommendations, establish a program for the purpose of promoting and maintaining the physical and mental health of their employees. The law does not provide special funds for such programs and does not make them mandatory, but about one-half of all Federal employees received Federal employee health services of some nature.

Agencies may either operate their own programs or contract with the Public Health Service for care. By fiscal year 1962, the Federal Employee Health Program of the Public Health Service was providing services to 58,000 Federal workers in a number of agencies through the facilities of 39 widely scattered units equipped and staffed with public health physicians and nurses. In that year, contracts for the operation of these units amounted to more than three-quarters of a million dollars. The number of employees eligible

for services through units set up and operated by their own agencies is even greater.

Effective July 1, 1961, the per capita limitation of \$13 per annum was rescinded by the Bureau of the Budget. Consequently, the agencies can spend any amount subject only to justification.

In fiscal year 1962, over a quarter of a million visits were made to health units operated by the Federal Employee Health Program of the Public Health Service. These resulted in 17,219 referrals to private physicians and dentists who, in turn, wrote orders for the 47,608 treatments that were carried out in the health units. A staff of 110 physicians, nurses and ancillary personnel served these units. The programs are considered an important asset by the Federal Government, and their value is well recognized.

Public Law 658 authorizes the Federal Employee Health Service to function in four service areas: treatment, examinations, referral, and preventive health, as follows:

Treatment is directed to on-the-job illness and injury. Minor disorders for which employees would not ordinarily seek the attention of a personal physician receive first aid and palliative treatment. Staffs of Health Units work closely with private practitioners in administering treatments which practitioners prescribe.

Complete physical examinations are extended, within the limitations of facilities and manpower, to employees age 40 and over, as a screening technique for the early detection of degenerative diseases and other conditions. Other screening programs conducted on a mass basis are for the detection of diabetes, glaucoma, and visual defects.

Referrals of employees to private practitioners and dentists are made frequently. Whenever an employee has no family physician, referrals are made on an impartial basis through local medical service bureaus.

Three specific preventive health program activities aim at minimizing absenteeism and promoting optimum health among Federal employees. These are: (1) screening programs to seek out diseases and conditions which, if dealt with early, will reduce future absenteeism and prevent permanent health damage; (2) health education to provide needed counseling and information; and (3) aids to prevention through immunization against such diseases as poliomyelitis, influenza, tetanus, and smallpox.

### ***Health Services for State and Local Government Employees***

A survey of States made by the Public Health Service in 1957 revealed that very few of them were operating employee health programs. A more recent survey, by Dr. John F. Kilgus, Chief of Employee Health Services for the State of Connecticut, confirms this fact. In response to a questionnaire sent in 1960 to all States, Dr. Kilgus received 42 replies, only nine States reporting some type of service:

*Georgia.*—A multiphasic screening program is carried out, treatment activities being limited to emergency situations for both occupational and non-occupational illnesses and injuries.

*Indiana.*—Since 1945 the State board of health has maintained an employee health service for its own employees. Administered by the medical section of the industrial hygiene division, this service includes all aspects of an accepted industrial medical program and was certified as such by the American College of Surgeons. This is believed to be the first such certification of any State agency industrial medical program.

*Kansas.*—An emergency room attended by a nurse is maintained in the State office building. The nurse's work is primarily limited to strict emergencies, although upon written orders from the physician she can administer routine medication or change dressings. A physician from the State board of health has been designated as the person to contact when a medical emergency occurs elsewhere. Neither preemployment nor periodic physicals are required or offered.

*Kentucky.*—A limited program is carried on with a registered nurse in immediate charge and a local physician engaged on a retainer basis. Expansion of this program is contemplated.

*Minnesota.*—The Department of Highways in July 1960 established a health unit for its 2,000–3,500 employees housed in a new building in the St. Paul capitol group. This is a pilot program made possible by the fact that the highway department operates on dedicated funds and was able to establish a program without specific legislative authorization. A bill submitted to the 1959 legislative session recommended the establishment of an employee health service program, placing the responsibility for it in the Department of Health. This bill failed to survive, but, at the time of the questionnaire, support for a similar bill was being sought.

*New Hampshire.*—A full-time first aid room is maintained.

*New Jersey.*—Only a rudimentary service is provided on an overall basis. Some agencies, such as the Department of Highways, have rather elaborate services. There is a first aid room, well equipped and staffed by a nurse, in the State Capitol. The health department operates an annual screening program which is popular. Special problems of individuals and groups are dealt with on occasion.

*Oregon.*—A screening program is operated in which all new employees are required to participate within the first 6 months of employment. Thereafter, the tests are available to all employees on a voluntary basis. The results of the screening examinations are not a part of the employee's employment record. Results are kept confidential and are available only to the employee and the medical staff.

*Pennsylvania.*—In the fall of 1957, Pennsylvania organized a health service for State employees under the immediate direction of the Department of Health, Division of Occupational Health. Embracing about 7,000 employees of four departments in Harrisburg at the start, the service has

since been expanded. Health centers will probably be established in two other areas, Philadelphia and Pittsburgh.

Inquiries recently received by the Public Health Service indicate that several other States, including New York and Rhode Island, are considering the inauguration of programs. Several States with programs in operation would like to expand them. Interest in such services seems to be growing steadily among both States and cities.

In an attempt to determine the extent of existing occupational health services for employees in local governments in 1962, the Division of Occupational Health, Public Health Service, sent questionnaires to the 100 largest cities in the United States.

The questionnaire was mailed to the health department since it seemed to be the most likely agency either to be operating such a program or to have a knowledge of programs in operation. Most of the responses were from this department; however 18 were submitted by other departments primarily personnel. A tabulation of the responses is provided in appendix A.

Of the 84 cities returning the questionnaire, 23 reported on personnel in only one department. All but one of these were the health department, either city or county. No attempt was made to determine whether this was the result of misinterpretation of the request or lack of information.

Of the 61 departments reporting on all employees in the jurisdiction, 42 percent reported employee health services for all city employees, and 32 percent reported no employee health services as such. Only 6 percent indicated no requirement of preplacement examinations, however, and the cost of the examination, when required, was assumed by the government in most cases.

Although the number of employees in industry as a whole is known to play a major part in whether occupational health services are provided by management, there seems to be little correlation to size shown in the responses of this survey. In fact, 64 percent of the surveyed cities with less than 2,000 public employees indicated employee health services for all, while less than 40 percent with over 5,000 public employees indicated such services. On the other hand, almost 80 percent of the cities with more than 5,000 public employees require a preplacement examination for all employees, contrasted to 50 percent for cities with less than 2,000 employees.

As would be expected, from the standpoint of physical proximity to doctors and nurses, health department personnel have more health services available to them. Programs for personnel in police and fire departments were mentioned frequently, also. Several cities indicated that a program was in the planning stage or a study of the need for such a program was being made.

Information on health insurance benefits is available in *State Employees' Health Benefit Programs*, Public Health Service Publication No. 947-2.

### Planning an Employee Health Program

Plans for an employee health program can be soundly based by drawing on the experience of operating programs. Information on some of the programs now serving State and local government groups will be found in Section IX. Many large industries also have useful descriptions of their programs which they will provide upon request. Guidelines for programs and other helpful material are available from various professional groups, such as the American Medical Association, the Industrial Medical Association, the American Nurses Association, the American Association of Industrial Nurses, the American Association of Industrial Dentists, the National Industrial Conference Board, the National League for Nursing, and the National Safety Council.

The Council on Occupational Health of the American Medical Association has issued a publication, *Scope, Objectives and Functions of Occupational Health Programs*, especially designed to meet the needs and mark the boundaries of occupational medicine and to describe the place of occupational health programs in the practice of medicine.

#### **Importance of Individual Statements**

Industries with employee health programs consider it important to adopt a written policy statement before a program is inaugurated. A good statement of objectives clearly reflecting management's attitude provides an effective framework for planning activities and furnishes physicians serving industries with approved and written authority for action. The National Industrial Conference Board provides the following example of a statement, submitted by an oil company: "The Company has a basic interest in the health and physical condition of its employees. The Company will provide a competent medical staff to establish health standards for employment, to assure adequate medical treatment of industrial sickness or injury, to assist in the maintenance of sanitary and healthful working conditions, and to provide medical guidance in the employee's interest."<sup>1</sup>

Where the objectives of a program cover more than minor care for occupational illness and injury, the policy statement should be supplemented by one outlining the functions of the program. These statements, along with other pertinent items, should be made the basis of a manual for the program.

<sup>1</sup> National Industrial Conference Board, op. cit.

A statement of functions indicates how the objectives of the program will be accomplished. The type and extent of the services to be provided are indicated.

### **Types of Service**

When the National Industrial Conference Board made its survey of 278 companies in 1959, most of the companies (four-fifths of those from the United States and almost nine-tenths of the Canadian companies) required preplacement physical examinations of every prospective employee. Periodic physical examinations were also becoming an increasingly common practice, with 86 percent of all participating companies reporting them for either all or a selected group of employees. Over half of the 208 companies from the United States made periodic examinations available to all employees. Many companies required physical examinations following layoffs. Exit (termination of employment) examinations were less frequent. These practices were not limited to very large companies, since more than 200 of the industries in the survey employed less than 5,000 workers, including 64 with less than 1,000 employees.

More than three-fourths of the companies from the United States and two-thirds of the Canadian reported eye protection programs. Auditory examinations and measures to provide ear protection were not so common. Only a few companies had dental programs. Very few companies had psychiatrists on their staffs (10 among 278 companies had part-time psychiatrists), but mental hygiene was considered important by many companies. The medical staff in a number of the companies was reported to be providing counseling service.

### **Medical Examinations**

Medical examinations, as the above figures indicate, are one of the most important functions of an employee health program. In its publication, *Guiding Principles of Medical Examinations in Industry*, the American Medical Association (AMA) describes the objectives of examinations as follows:

1. To measure the medical fitness of individuals to perform their duties without hazard to themselves or others.
2. To assist individuals in the maintenance or improvement of their health.
3. To detect the effect of harmful working conditions and advise corrective measures.
4. To establish a record of the condition of the individual at the time of each examination.

When properly conducted, medical examinations provide maximum benefits to employees, employers, and the community. Emphasis should be on the placement of individuals according to their abilities and not on the selection of the physically perfect and the rejection of all others. The examina-



tion should be conducted by a qualified physician, who may be assisted by a nurse or other adequately trained personnel.

Each examination should be thorough and suitable for its purpose. Many factors influence the decision as to what should be included in a particular circumstance. Opinions, according to the AMA publication, vary considerably regarding what constitutes a minimum examination. The following minimum has been suggested: history, age, height, and weight, and general appearance; skin, eyes, ears, nose, teeth and mouth, chest (lungs and heart), lymph nodes, and peripheral blood vessels; abdomen including hernia, anus, genitalia and spine, and extremities; blood pressure, pulse, and temperature; urinalysis; and visual and hearing acuity. Personality, temperament, and significant nervous or mental manifestations should be noted.

The AMA guide points out that the trend in examinations is for thoroughness, with the inclusion of chest X-rays, laboratory studies, and electrocardiograms, and special attention to the common sites of cancer as well as to mental or emotional states. Because of the importance of vision to job efficiency and safety, the performance of detailed examinations for near and far vision, visual fields, color discrimination, and depth perception is advisable. Laboratory tests are indispensable where there is an exposure to toxic substances. Chest X-rays before employment and periodically thereafter may be indicated for workers engaged in dusty trades, particularly those exposed to mineral dusts.

Various types of examinations are described as follows:

*Preplacement examinations.*—Preplacement examinations are made for the express purpose of determining and recording the physical condition of the prospective workers and assignment to a suitable job in which his disabilities, if any, will not affect his personal efficiency, safety, and health nor the safety of others. The applicant (or his personal physician, on the applicant's approval) is advised of conditions needing medical attention.

*Periodic examinations.*—Periodic examinations of employees may be on a voluntary or required basis . . . . A mandatory basis of periodic examinations is usually applied to workers who are exposed to processes or materials that are definite health hazards or whose work involves responsibility for the safety of others . . . . Frequency of the examination will vary in accordance with the quality of the engineering control, the severity of the exposure and the individual findings on each examination.

*Special examinations.*—Special examinations may be indicated at time of transfer from one job to another. The control of communicable diseases by examinations of those who handle food is another example of special purpose examinations. In many jurisdictions these are required by law.

Many organizations find it worthwhile to make "return-to-work" examinations of employees who have been absent more than a specified number of days due to illness or injury . . . . Upon retirement, resignation or termination of employment, some organizations have found it desirable to make examinations and a record of the findings at that time. This is particularly true in operations involving definite exposure to health hazardous substances as lead, benzol, silica, and asbestos dust.

## **Executive Examinations**

The National Industrial Conference Board reports that special physical examinations for executives are now so well accepted that some companies regard them as a "must." The following objectives were reported by companies participating in the Board's survey.

1. To protect the health of the individual executive just as any general company health program aims to protect the health of the individual workers.
2. To protect the company's investment in the individual executives.
3. To achieve an efficient, well-run organization.
4. To provide a more enriched life for the executive.
5. To protect the company by insuring, insofar as possible, a well-run organization prepared for emergencies such as the death of the president and other key personnel.

## **Preventive Services, Including Health Education and Counseling**

Preventive health services have found widespread acceptance in large industries. These services help to keep the worker well and on the job by the prevention and early detection of both occupational and nonoccupational diseases. The rising cost of health insurance, for which employers are paying or helping to pay high premiums, has increased interest in these services. The more liberal interpretation of workmen's compensation laws and the increased cost of compensation insurance has been another incentive.

The success of preventive and other services provided in the health unit depends greatly upon health education and counseling. Unfounded health prejudices must be overcome, and the employee must be encouraged to take care of his own and his family's health. Both employees and supervisors must be instructed regarding services available, the advantages to be derived from them, and the proper procedure for obtaining them. Good health education literature may be obtained from many sources and should be made available to employees. In addition to public and voluntary health agencies and professional groups, insurance companies, labor groups and civic associations often provide pamphlets free or at moderate cost.

The physician and nurse in an employee health program have an excellent opportunity for health counseling. Often they are the only members of the health and medical professions with whom the employee comes in contact. In addition to providing consultation, they can put the employee in contact with his own physician and with public and community agencies through which services are available. These agencies can be a very valuable aid to the health unit in providing preventive services, health education, and counseling.

## **Emergency Care**

Most employee visits to the medical unit are for the treatment of minor illness or injury. Prompt, efficient, well-planned first aid is a major health

unit function. A close working relationship between health unit personnel and plant safety committees is essential in working out a good first aid program.

Not only should efficient first aid services be available within the medical department, but facilities and workers trained in first aid should also be available in other locations. In government, as in other industries, many employees work in small groups and in places where prompt first aid treatment cannot be obtained. First aid facilities and trained first-aiders should be available to these groups at all times. One employee should be responsible for the first aid unit, and at least one deputy should be available to take over in case of absence or illness. Other workers in the group should at least be familiar with the elements of good emergency care and the importance of good safety and health practices.

The first-aiders has been called a frontline fighter in the battle for health. But he cannot do his job without proper training and equipment. Training can be arranged through the American Red Cross, the health department, or some other public or private agency. Special training may be necessary for first-aiders serving workers engaged in hazardous work.

The first-aiders activities must be closely allied with the health unit and his services should be checked as promptly as possible by the health unit or other medical personnel.

Publications regarding first aid are available from the National Safety Council, the American Red Cross, the AMA, and various State and local health departments. Two recently published books relating first aid to the workplace are *First Aid Guide for the Small Plant*, prepared by the Detroit, Mich., Industrial First-Aid Advisory Committee, published by A. D. Cloud, Winnetka, Ill. (75¢ in lots of less than 10) and *First Aid in the Factory*, by Lord Taylor, Longmans Green and Company, New York 18, N.Y.

### **Dental Services**

Although only a small percent of companies with health programs provide dental services, those that do so believe in their value and point out that they stimulate employees to go to the dentist just as a periodic examination encourages them to go to a physician. Often it is the initial visit to a dentist that a person dreads. Once that has been made at the workplace, visits to a dentist in the community become easier. Decayed teeth and oral infections can result in a considerable amount of absenteeism. X-rays at the health unit will reveal the need for care, and the employee can be encouraged to seek it from his personal dentist.

Companies with successful dental programs include the Duquesne Light Company, Pittsburgh, Pa., and the Corning Glass Works, Corning, N.Y. Employees of the Consolidated Edison Company, New York City, have had dental services provided as a fringe benefit for a number of years. The Gruman Aircraft Engineering Corporation, Bethpage, N.Y., arranged for

services through a local dental school.<sup>3</sup> One of the State employee health programs now in operation plans to add dental services as soon as possible.

### ***Services for Retired Employees***

Many companies like to maintain friendly relations with their retired employees and invite them to use certain company facilities, including the health unit. Among the companies in the National Industrial Conference Board survey, about two-fifths of those from the United States and one-half of the Canadian firms followed this practice.

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<sup>3</sup> National Industrial Conference Board, *op. cit.*

## SECTION V

### Methods of Providing Service and Personnel

#### *Methods of Providing Service*

The State and local health programs described in Section IX provide services in several different ways. The majority, following the practices of most large and medium-size industries, have established health units at the workplace or nearby with full- or part-time physicians and nurses in attendance. Some are obtaining services through an industrial medical group, a method also used by many industries. Many group practice clinics throughout the United States now provide services to industry, as revealed by a recent Public Health Service survey. Some devote a relatively small proportion of their time to industrial practice, while others are organized as industrial clinics.

Industries too small to operate an independent health unit sometimes arrange for cooperative services. Under such a plan, five or six companies band together and usually employ a physician full time. They may jointly establish a central dispensary unit, with nurses and ancillary staff in attendance, or each company may set up its own health unit and provide its own nursing service, either by employing a nurse full or part time or by contracting with the local visiting nurse service. When separate units are organized, the physician provides services at each participating plant according to a regular schedule. Government employee health programs report no cooperative services of any kind. However, as more State and local employee health programs develop, the two levels of government may find it advantageous to cooperate in providing services. This possibility has already been considered in at least one instance.

#### *Physician's Services*

For an occupational group, the suggested ratio is one full-time physician or his equivalent for each 2,000–3,000 employees. The physician should be trained in occupational medicine, but only a limited number of physicians serving industry have this type of training. The AMA lists less than 3,000 physicians in the United States who report that they are specializing full or part time in occupational medicine. Most of the service to industry is provided by physicians in the community who visit the place of employment at specified hours or when called. The majority have little or no training in occupational medicine, and many of them are unfamiliar with the work environment.

The value of a physician's services to an agency and its employees increases in proportion to his familiarity with working conditions. He should be encouraged to make periodic inspections and to maintain regular contact with

the personnel, safety, and engineering departments. The physician who performs a preplacement examination, for example, must be able to determine if the person is capable of doing the job for which he is being considered without harm to himself or danger to others. He must decide if the person is an ordinary risk under workmen's compensation laws and if he is a good investment. One who is unfamiliar with the work environment or with job requirements cannot answer such questions satisfactorily.

The physician providing occupational health services should be encouraged to affiliate with the Industrial Medical Association, to participate in occupational health programs sponsored by State, regional, and local groups, and to increase his knowledge of the principles of occupational health through training courses and reading. Among numerous publications of interest to the physician in industry is one by Dr. William P. Shepard, formerly vice president and chief medical director, Metropolitan Life Insurance Company. The primary purpose of this book, *The Physician in Industry* (New York, McGraw-Hill Book Company, 1961), is to help the practicing physician who is interested in industrial medicine to orient himself in a new environment. Two other recent publications by recognized authorities are *Occupational Diseases and Industrial Medicine*, by Rutherford T. Johnstone, M.D., and Seward E. Miller, M.D. (Philadelphia, W. B. Saunders Company, 1960), and *Modern Occupational Medicine*, by A. J. Fleming, M.D.; C. A. D'Alonzo, M.D.; and J. A. Zapp, Ph. D. (Philadelphia, Lea and Febiger, 1960).

A statement of qualifications for a director serving industry will be found in appendix B. This has been prepared by the Committee on Industrial Practices of the Industrial Medical Association. A limited number of copies of an *Occupational Health Bookshelf, Selected References as Recommended by the Industrial Medical Association and the U.S. Public Health Service* is available from either agency.

### **Nurses**

The nurse is more closely associated with employees than any other member of the health unit. She has many duties (table 10) and, since in most industries physician's services are provided on either a part-time or on-call basis, she often works under standing orders and assumes an unusual amount of responsibility.

Recent Public Health Service figures indicate that there are now approximately 15,000 registered nurses serving industries in the United States full time. A small number of part-time nurses and some licensed practical nurses are also associated with employee health units. In some areas, visiting nurse associations also contract to provide care.

Nurses in employee health units should be trained in occupational health, but surveys indicate that most of them have had little or no training in this or in any other field of public health. The need for trained industrial nurses is great and will become greater as the work force grows and work processes become more complex.

Because she is often the principal liaison between the physician and the

employer, the industrial nurse should develop a satisfactory working relationship with management and be well informed about the workers' jobs and environment. She can greatly increase her value to industry by participating in health programs sponsored by community organizations. As part of her continuing professional growth, she should also maintain an affiliation with a national nursing organization.

TABLE 10.—*Duties of nurses in health units; replies to a questionnaire*

Question	Number of plants replying in affirmative
<b>Direct services:</b>	
Care of industrial illnesses and injuries.....	12
Care of nonindustrial injuries.....	12
Care of medical complaints.....	12
Interviews regarding health problems.....	12
Immunizations.....	6
Health examinations.....	12
Procure history, measure height and weight.....	10
Vision testing.....	7
Hearing testing.....	0
Temperature, pulse, respiration.....	8
Blood pressure.....	3
Collect laboratory specimens.....	9
Laboratory tests.....	9
Urinalysis.....	8
Blood work.....	5
X-rays, chest.....	1
Basal metabolism.....	1
Electrocardiogram.....	1
Chaperon women workers.....	8
Conferences with employees regarding findings.....	11
Recording physician's findings.....	1
Home visits.....	8
Interpretative services to management and supervisors.....	12
Recording professional notes.....	12
Review of records for followup purposes.....	9
<b>Indirect services:</b>	
Environmental sanitation and safety.....	12
Plant inspections.....	8
Investigations of accidents.....	4
Member of safety committee.....	9
Reports.....	12
Monthly or annual.....	12
Special reports.....	10
Compensation reports.....	9
Administration of health service.....	12
Procure physician's written orders for emergency treatment.....	12
Conferences with management and plant physician on policy.....	12
Planning space and equipment needs.....	12
Educational activities.....	11
Group teaching.....	4
Preparation of articles for plant paper.....	2
Review and selection of health education materials.....	10
Training and supervision of first-aid workers.....	7
Recreation program (member of committee).....	1
Housekeeping and maintenance of the health service facilities.....	12
Clerical (health service).....	10
<b>Other activities:</b>	
Clerical (nonhealth service).....	3
Care for dependents of employees.....	1

Sources: Bailey, Eleanor C. and Frasier, Elizabeth S.: *A Time Study—Nursing Services in Small Manufacturing Plants*. Public Health Service Publication No. 190. Washington, Government Printing Office, 1932.

Two publications providing background data on nursing in industry are *Occupational Health Nursing*, by Mary Louise Brown, R.N. (Springer Publishing Company, New York, 1956) and *Nursing in Commerce and Industry*, by Bethel McGrath, R.N. (Commonwealth Fund, New York, 1946). *Functions, Standards and Qualifications for Occupational Health Nursing* have been developed and published by the Occupational Health Nurses Section of the American Nurses Association, New York. The recommendations for a nurse serving in a one-nurse industry are reproduced in appendix C.

The number of full-time professional registered nurses needed in a program may be computed as follows:

- 1 nurse up to 500 employees
- 2 nurses up to 1,000 employees
- 3 nurses up to 1,500 employees
- 4 nurses up to 2,000 employees
- 1 professional registered nurse for each additional 1,000 employees up to 5,000. Additional nurses may be required under certain circumstances, such as round-the-clock coverage.

### **Auxiliary Personnel**

In addition to doctors and nurses, other professionals are often employed in the health unit. As illustrated in Section IX, some of the programs have set up their own laboratory facilities and employ therapists, X-ray and laboratory technicians, and other related personnel. In other cases, facilities available in governmental units and elsewhere have made the employment of auxiliary personnel unnecessary. When outside facilities are used, it should be clearly understood that services to the employee health program do not rank second in priority.

Assigning competent and sufficient auxiliary personnel to a health unit is both economical and profitable. If clerical staff is not provided, nurses must perform a considerable amount of clerical work connected with a health unit. Freeing the nurse from such tasks enables her to spend more time in professional services, particularly in counseling and health education.



## Facilities and Equipment

The success of an employee health program depends upon the type and location of the health unit, as well as available personnel and services. Poor facilities or a remote location may seriously handicap a program. If possible, the health unit should be designed when the building is planned. Management and health unit staff should confer with the architect in the preliminary design stage. Firms which specialize in equipping health units can advise industrial plant designers regarding selection of a convenient location, needed equipment, and necessary allowances for possible plant expansion and increased services.

Several useful publications on facilities and equipment are now available. *Industrial Medical Department Layout and Design*, a bound series of articles, is based on the personal experience of William J. Fulton, M.D., published by General Motors Corporation.

An industrial medical department, according to Dr. Fulton, is a tool which will best accomplish its purpose if it is designed to do a specific job. Preliminary to planning, information should be obtained on:

1. Number of persons to be served.
2. Number of shifts and number of employees working in each shift.
3. The scope and type of medical services to be rendered.
4. The character of the employees' occupations.
5. The general layout of buildings and working areas.
6. The policies of the management.

Dr. Fulton outlines the following cardinal points to be taken into consideration in every phase of planning:

1. **Quality:** Medical layout, environment, and service should be pointed toward gaining the respect and confidence of each and every employee. Layout and facilities should abet individual attention and maintain individual privacy and dignity. Layout should be adaptable to modern techniques in treatment and diagnostic procedures.
2. **Quantity:** Application of the principles of the Flow-Chart, Time and Motion Study, and Job Analysis, toward insuring efficient and economical administration without sacrificing quality. All allotted space should be designed to produce maximum usage.
3. **Aseptic technique:** Layout and procedure that will prevent contagion, contamination, and secondary infection.
4. **Working environment:** Good working and daily living environment for members of the medical staff.
5. **Civilian disaster:** Adaptability to emergency conversion and service in the exigencies of civilian defense or disaster. The widespread loca-

tions of industrial medical departments may make any one or all of them vital links in the chain of services urgently needed under such circumstances.

In relation to all other departments, a desirable location of the medical department would be:

1. As near the center of population of the people it is to serve, as is practical.
2. Adjacent to the employment department and convenient to the safety and personnel departments.
3. Accessible to supervision.
4. Convenient to an inconspicuous, extrafactory exit. Under no circumstances should the main medical facilities be in a position that would allow their entrapment by internal fire or explosion.

The A. S. Aloe Company, St. Louis 3, Mo., has issued *Eight Suggested Layouts and Equipment Lists for Industrial Dispensaries of Various Sizes*. Before compiling this brochure, the company surveyed a large number of actual floor plans and equipment lists as drawn up for actual medical installations. From them it selected and adapted those which have been most frequently used by industries consulting with the company. The medical staff of Liberty Mutual Insurance Company provided consultation for this undertaking.

The National Industrial Conference Board report <sup>1</sup> includes seven examples illustrating medical department layout and equipment.

An earlier series of articles, "Space and Labor Saving Devices in Industrial Dispensaries," by Jean Spencer Felton, M.D., appeared in several 1947 issues of *Occupational Medicine* and in the November 1951 and May 1953 issues of *AMA Archives of Industrial Medicine*.

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<sup>1</sup> Op. cit.

## Administration and Records

### Administration

The place of the health unit within the organizational framework is important, since effectiveness will depend to a great extent upon the unit's status and its relationship with top management and other departments.

Among the 175 companies reporting to the National Industrial Conference Board on organizational structure, almost three-fourths of them stated that the supervisor of the health unit reported to management through the personnel department. Companies considered this method logical because of the need for a close relationship between the two departments. In about one-fifth of the companies, the medical supervisor reported to a top executive other than personnel. This procedure was most often found in companies with a full-time physician in charge of the health unit.

Regardless of where the health unit is placed administratively, the physician and nurse must have ready access to management, to make recommendations and share in formulating program policies. They must be given the status necessary to carry out their responsibilities, and their place within the organizational structure must be clearly defined.

The proper distribution of administrative responsibility among physician, nurse, and management is extremely important. For this reason, items from a recent Metropolitan Life Insurance Company publication, *Correlated Activities in an Employee Health Program: A Guide for Management, The Physician and Nurse* have been reproduced in appendix D.

The physician's place in the work setting has been described by Dr. William P. Shepard as quite different from that to which he is accustomed in private practice. In industrial practice, the physician has a dual role: to help the injured workman obtain the benefits to which he is entitled and to protect the employer against unjustified claims. Therefore, he requires freedom to act as mediator between management and labor in questions involving health. His place in the administrative structure should be defined, and he should have easy access to those in decision-making positions. His reasons for his recommendations, the cost, their value, and probable results should be discussed directly with management. Recommendations involving questions of practical administrative importance can then be defended. "The physician who may report only to the assistant superintendent, or even the personnel manager, depending on him in turn to present medical recommendations to

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<sup>1</sup> Shepard, William P., op. cit.

management, cannot be an effective member of the team that runs the business." <sup>1</sup>

The administrative responsibilities of the nurse will vary to some extent according to whether or not there is a full-time physician in the medical department. In all instances, the nurse will be responsible for certain administrative activities, such as maintenance of facilities, equipment, and medical records, and supervision of personnel.

## Records

Adequate records are essential to any good health program. They can be simple but should be well planned, providing all the information needed for proper care and followup services. They should also be detailed enough to aid in the proper placement of an employee, to provide impartial evidence in the case of legal action, and to serve as a basis for the detection and elimination of occupational disease and accident hazards. The confidentiality of records must be strictly maintained.

In a *Guide to Records for Health Services in Small Industries*, published in 1960 by the American Conference of Governmental Industrial Hygienists (1014 Broadway, Cincinnati, Ohio, Price \$1.), records are placed in three different categories:

1. *Individual health service records.*—These are designed to provide a cumulative record of facts and events pertaining to the employee, such as physical examination findings, services given, recommendations made, work injuries and illness experience, occupational history, and other related health maintenance notes.

Individual records, because of the personal nature of the information contained in them, should be kept in a locked filing cabinet in the health unit. Interpretations, when needed by management, should be made by the plant physician or, under his guidance, by the plant nurse. Forms include the following:

- An Individual Health Record
- Physical Examination Form
- Form for Reporting Physicians Recommendations
- Form for Referral to Physician
- In-plant Reporting of Work Injury
- Sickness Absentee Records
- Compensation Records

2. *Administrative records and reports.*—These include:

- Daily Record or log, to be used primarily to obtain minimum statistics for periodic reports and to provide a chronological record of services given;
- Tickler File or Followup to aid the nurse as a reminder of future visits recommended for employee;
- Periodic Reports, compiled monthly and annually on services to employees and related activities.

3. *Record for first aid workers.*—First aid workers employed in establishments for emergency treatment of on-the-job injuries should keep records on all employees seen.

The Committee on Industrial Records of the Council on Industrial Health, AMA, has recently issued *A Guide to The Development of An Industrial Medical Records System*. While it is designed primarily to help small companies develop good medical records, larger organizations will also find it useful. The Guide is available from the association offices, 535 North Dearborn Street, Chicago 10, Ill.

In planning records, each organization must consider its own needs and adapt suggested records to meet them. Individual consultation on records may be obtained from industrial nursing consultants in official agencies and other personnel responsible for planning records and reports. Insurance companies will often provide consultation to organizations that are insured by them. Copies of records being used by industries with health units and by the State and local programs described in Section IX can undoubtedly be obtained upon request and will be useful.

Before any forms are printed, it is advisable to give them a thorough trial and then make necessary changes. Records should also be reviewed from time to time to determine their effectiveness, particularly if changes have occurred in the health program or in the organization's activities.

The completeness and accuracy of a health unit's records and reports will depend upon the training and experience of the program nurse and the degree to which she and the supervising physician understand the value of records and their usefulness in the evaluation and development of the program. All record keeping should be under the supervision of professional personnel. Information requiring professional interpretation should be written or dictated by the physician, nurse or technician. The AMA Guide cautions against the frequent but erroneous practice of leaving records entirely up to clerical personnel.

## Cost and Evaluation

The cost of employee health services will be influenced by such factors as the type of service provided, the cost of equipment and supplies, the method of providing professional services, the prevailing rates for such services, the number of employees served, and the hazards of the work.

Surveys by the National Industrial Conference Board provide data on what 96 companies paid for medical services and the extent to which the cost of such services increased between 1955 and 1960.<sup>1</sup> In 1960 the companies were paying \$17.5 million annually to provide services for 890,000 employees. The average for all companies was \$19.68 per employee, or 10 percent more than in 1955 when the average cost for the same companies was \$17.71 per employee. The median cost per employee in 1960 was \$21. In 70 of the 96 companies the annual per employee cost ranged from \$10 to \$30. Six companies spent under \$10, 12 companies from \$30 to \$50, and 8 companies \$50 or more. One-half of the 96 companies employed from 1,000 to 5,000 workers.

These costs do not include company-supported group health insurance programs. They were limited to expenditures for physical examinations (both preplacement and periodic), visiting nurse service and on-the-job nursing care, accident prevention programs, dental care, and medical supplies and equipment. Not every company provided all of these services, and there was also considerable variation regarding the items included as a medical cost. Practically all of them included professional personnel salaries and medical department supplies and equipment; over three-fourths included the salaries of nonprofessional staff in the medical department. Over one-half of them included special examinations for executives, but less than half included such items as rent, heat, light, depreciation, stationery and other office maintenance, transportation, and other factors.

Cost figures for comparative purposes can be very deceptive because of variations in both type of services provided and in what is included as a cost item. In fact, changes in types of services provided and in methods of allocating costs often make it difficult for a program to compare its own expenditures in different years. Also, many plants find it difficult to uncover all of the expenditures that are directly or indirectly attributable to a health unit. This

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<sup>1</sup>Worthy, N. Beatrice. Company Medical Department Costs, *Management Record* XXIII: 15-22 (October) 1961.

is unfortunate because reliable figures regarding program costs and savings can be a powerful weapon in justifying health program budgets.

### **Evaluation**

Program evaluation may be viewed from two angles: (1) what those responsible for the program know or believe it has accomplished and (2) how the program compares with other employee health programs and with standards for such programs.

The real value of a program is difficult to estimate because of many indirect benefits that result from the service. Administrators may be able to show a reduction in workmen's compensation rates or in days lost from work due to illness and injury, but they cannot translate into dollars such items as reduced employee turnover, increased production due to better physical and mental health, or savings in loss to the work force resulting from early detection of disease through periodic examinations. As Berkeley, Calif., reports: "We cannot place a value on the lives that have been saved and accidents that have not occurred through the elimination and reduction of health hazards."

The programs providing information for this publication indicate a number of benefits resulting from their services. In some instances, actual or estimated dollar savings are shown. One of the most outstanding savings is reported by Columbus, Ohio. When the program was planned, the annual operating cost was estimated at about \$42,000, and the potential annual saving in the State compensation premium as a result of the program was estimated to be \$285,000. The workmen's compensation premium rate has decreased steadily from \$3.59 per \$100 of payroll in 1956 to \$2.03 in 1961. The saving resulting from this reduction in rate amounted to \$332,876 for 1961.

The city of San Jose, Calif., reports \$18,785 budgeted for its employee health services in 1962-63. As a result of good health and safety practices, the city won a first-place safety award in 2 successive years. In 1960, the rebate on the city's compensation premium was \$26,510, or approximately \$5,000 more than the amount budgeted for the program for 1962-63. The city also reports a low of 3.25 average days of sick leave in 1960. This is about one-half the national average. San Jose also reports an expenditure of \$10,000 on one compensation case that occurred before the program began, where a man with a defective back was employed without a preplacement examination.

The city physician of Corpus Christi, Tex., reports that officials who planned the city's employee health program estimated that they could save an estimated \$60,000 a year in medical costs with an outlay of about \$4,000 the first year for materials and supplies, X-ray and other equipment. The total cost of operation for the first year, including salaries, was \$21,422. Estimates at this time indicate that the program helps to save an average of \$120,000 a year in insurance costs.

Industries with medical departments often report on their benefits. The Rome Cable Company, for example, states that in 1947, when its medical de-

partment began operation, absenteeism of all types averaged 70 hours, or almost 9 days per year per employee. This represented 3.5 percent of an employee's normal work time. In 1957, absenteeism from all causes dropped to 32 hours, or 4 days per year, representing 1.6 percent of the normal work time. This reduction represented greater earnings for employees and a saving of over \$800 in production per employee per year. The greatest reduction was in sick absence which was cut from 6 days per employee per year in 1947 to 3 days in 1957.

The cost of workmen's compensation at the Rome Cable Company in the 9 years following the establishment of the medical department was approximately the same as for the 5 prior years, despite increases in maximum benefits and in medical and hospital fees. Workmen's compensation claims, for the 3 years before the medical department began operating, averaged 253 per year; during the 8 years 1950-57, the average was 67, a reduction of 73 percent.<sup>2</sup>

### **Standards for Evaluation**

In evaluating a program in relation to other programs and to standards for employee health services, standards used by the Occupational Health Institute provide an authoritative yardstick. The Institute, located at 55 East Washington Street, Chicago 2, Ill., is a nonprofit educational organization created by the Industrial Medical Association to promote the cause of health in industry. Since 1951, it has conducted a program of evaluation, approval, and certification of medical services in industry, on the basis of standards established by the Industrial Medical Association. The Institute also provides counseling assistance in setting up programs. Minimal standards issued by the Institute for plants or industrial units of 2,500-25,000 employees are as follows:

- A. The organization has a stated medical policy. This includes the following factors:
  - (1) Preplacement medical examinations are being performed.
  - (2) Periodic medical examinations are performed on all employees who are exposed to special occupational hazards.
  - (3) Routine periodic health inventories are encouraged. These examinations are conducted by a physician who is familiar with the specific work environment of the individual employee.
- B. The medical staff is sufficient to carry out the above-stated policy. There is one full-time physician or the equivalent for each 2,500 employees. Members of the medical and nursing staff are competent to perform the duties prescribed in the stated policy. They are graduates of accepted schools of learning; are in good standing; and licensed to practice in their respective States or provinces. They are worthy in character and in matters of professional ethics.
- C. Facilities are available for the performance of thorough preplacement and periodic examinations. These facilities for the performance of major procedures are located within the confines of the plant proper.

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<sup>2</sup> National Industrial Conference Board, *op. cit.*



- D. A system of adequate and confidential records is maintained. The job descriptions on all key medical personnel are on record. When sufficient exposure to occupational hazards warrants, competent trained industrial hygienists and sanitary engineers are included.
- E. A competent consulting staff is maintained.
- F. Sufficient attention is given to plant environment, i.e., sanitation, safety precautions, industrial hygiene.
- G. The medical director, medical adviser, or chief medical officer reports to some responsible member of management who is familiar with the managerial interpretation of medical policy, and whose assistance can be relied upon in implementing that policy.
- H. In addition to facilities for preplacement and periodic inventories, a well-equipped dispensary for emergency care is maintained. In an industry with 2,500 employees located in a given area, the services of one full-time, qualified physician, or his equivalent, can be well utilized. By equivalent is meant the services of one part-time physician plus the use of professional consultants to a degree sufficiently adequate to indicate that a constructive health maintenance program is in effect for all employees. When potential industrial hazards are present, the services of competent industrial hygiene consultants are required.
- I. In those few unusual situations where definitive medical care is provided for the nonoccupational conditions of employees, or medical care for their dependents, that portion of the available professional services and physical facilities which may be utilized for these purposes is not included in the appraisal of the occupational health program. In these situations, the following policy applies:

“The treatment of injuries or diseases not occupationally induced is the function of private medical practice. The physician in his industrial relations should abstain from such services except in the case of (1) *absence of accessible independent facilities* and (2) minor disorders that temporarily interfere with an employee’s comfort or ability to complete a shift, for the relief of which he would not ordinarily seek other medical attention.”

**Descriptions of Selected Programs****CONNECTICUT****Health Services for Employees**

An employee health program for all of the 24,000 State employees scattered throughout Connecticut began operating in February 1951 and is reported to be the first service of its type in the United States. John F. Kilgus, Jr., M.D., is chief of the service, which is located at 119 Capital Avenue, Hartford, Conn.

The program apparently was prompted by calls on physicians in the Department of Health to render first aid to State employees injured or taken ill while at work. Proper facilities were not available, and care was provided in a very haphazard manner. A health department Committee on Personnel Health reviewed the situation and in 1945 recommended that a department or division of health personnel be established, with a physician in charge. Funds amounting to \$80,000 were allotted for the biennium 1949-51, at the request of Stanley H. Osborn, M.D., then Commissioner of Health.

A pilot project was set up to serve 4,000 to 6,000 State employees in the Greater Hartford area. Services included preplacement examinations, emergency service, health education, and studies of personnel problems. Staff consisted of two physicians, a public health nurse, an industrial nurse, an X-ray-laboratory technician, and a typist. The clinic was located adjacent to the State Office Building, in a building formerly occupied by Mount Sinai Hospital.

Since the program was not established by an act of legislature, no rules of conduct had been laid down, and they had to be made as the program developed. The principal problem entailed the establishment of rapport with other State agencies. Some of them were inclined to view the new program with distrust and suspicion, but their fears were gradually dispelled.

**Current Program**

Services have been extended to all State employees. To provide all with equal facilities, officials are working for the establishment of additional clinics in other areas of the State. The service now maintains an up-to-date clinic in the building where it began operating in 1951. In addition, it also operates a branch clinic in a building occupied by the State Highway Department. Similar facilities will be installed in the new Motor Vehicle

Department Building and the new Labor Department Building which are nearing completion. The current staff includes the program chief and two other physicians, five occupational nurses, an X-ray technician, two medical stenographers, and a receptionist.

### **Facilities**

At one or both of the clinics, facilities are available for conducting preplacement and other physical examinations, providing physiotherapy treatment, making vision checks, and taking diagnostic X-rays. Laboratory equipment for routine blood and urine examinations is also available. Other laboratory examinations are performed for the clinic by the main Department of Health Laboratory.

### **Services Provided**

Services have been described and classified by the program chief, according to whether the government or the employee is the primary beneficiary, as follows:

#### **Services to the State Government**

1. *Preplacement examinations, to determine by careful physical evaluation whether or not the applicant is employable and in what capacity.* Designed to get the right individual into the right job, this procedure allows the State to employ many individuals who would be unemployable if they were not placed in the proper jobs. It is a great boon to the employment of the physically handicapped.

2. *Physical examinations required by statute.* Several State statutes require periodic physical examinations of employees performing certain tasks considered hazardous in nature. By this type of examination incipient disease is discovered and disability prevented.

3. *Physical examinations requested by a State agency or department.* Increasingly, the program has been called upon by State agencies to assist them in solving various problems. Examinations are provided in connection with promotions, changes of occupation, retirement, excessive absenteeism, and other personnel problems.

4. *Treatment for occupational and nonoccupational emergencies.* During the usual State working hours, the health service maintains a well-staffed and equipped clinic where any employee may receive prompt medical attention for a wide variety of conditions—from minor scratches and bruises to serious illness or accident.

5. *Treatment of occupational injuries and diseases.* Insofar as is practical, all occupational injuries and diseases occurring in the greater Hartford area are cared for in the clinic. This results in substantial savings. When such care is not feasible, because of the nature of the condition, proper reference is made to specialists in the various medical fields and to hospitals and clinics.

6. *X-rays of State employees injured in the performance of their work.* Employment of a competent X-ray technician obviates the need and expense of sending injured employees to hospitals or private roentgenologists. Failure to X-ray a suspicious injury might well result in permanent disability to an employee and in expensive claims against the State.

7. *Physiotherapy treatment for various types of injuries.*

8. *Conferences with various State agencies and department heads on medical matters.* Many State agencies avail themselves of consultation on interpretation of medical reports, estimates of disability, prognosis, and other medical problems.

9. *Immunization against specific hazards inherent in a particular type of work, such as poison ivy in highway department workers, park and forest employees, and fish and game employees; and typhoid and diphtheria in laboratory workers.*

### **Services to the Employees**

1. *Emergency treatment.* Employees in the Hartford area may obtain emergency treatment for all occupational and nonoccupational injuries and illnesses. Approximately 1,500 employees are seen for the first time every year at the clinic. A total of 10,502 visits were made to the clinic during the year 1960.

2. *Physical examinations.* Each year many employees request physical examinations, and as many of these requests are granted as time permits. Many requests are from employees outside the Hartford area who come to Hartford for the examination.

3. *Health counseling.* Physicians and nurses are always glad and ready to discuss an employee's health problem with him. These conferences are held in strict confidence in a true patient-physician relationship and in strict accordance with medical ethics.

4. *Health education.* A serious attempt is made to carry on a health education program. Each visit by an employee is an opportunity for health education on many phases of personal health.

5. *Immunizations.* Over a 10-year period, 79,691 immunizing injections were given to employees in all parts of the State. Immunization has been provided against influenza, poliomyelitis, poison ivy, smallpox, typhoid, diphtheria, and other diseases. The service is voluntary.

6. *Treatment of nonoccupational conditions, at the request of the private physician.* Upon the written request of the employee's family physician, the program cooperates in taking X-rays and electrocardiograms, performing laboratory studies, and giving physiotherapy and other forms of treatment within the scope and capabilities of the staff. Otherwise, treatment of non-occupational conditions, except for minor conditions, is on a strictly emergency basis.

## Utilization of Service

Clinic visits (excluding those for immunizations) have grown steadily from less than 2,500 in 1951 to almost 11,000 in 1960. Requests for immunization services have also increased. Services rendered during the first ten years of operation are shown in table 11.

TABLE 11.—*Services rendered during first 10 years of operation by Health Services for State Employees, Connecticut State Department of Health, January 1, 1951–December 31, 1960*

<i>Type of service</i>	<i>Number of services</i>
<b>Total visits</b> .....	<b>67,099</b>
<b>Medical and surgical:</b>	
Occupational .....	13,359
Nonoccupational .....	45,725
<b>Physical examinations:</b>	
Preplacement .....	2,972
Retirement .....	218
Periodic .....	2,042
Department request.....	775
Personal request.....	1,489
Promotional .....	2
Conferences .....	517
<b>Total immunizations</b> .....	<b>79,691</b>
<b>Total physiotherapy</b> .....	<b>10,436</b>
Diathermy .....	2,870
Infrared .....	2,257
Ultraviolet .....	333
Vibra-bath .....	2,180
Muscle stimulator.....	971
Hydrocollator .....	1,825
<b>Total diagnostic examinations</b> .....	<b>44,271</b>
Electrocardiograms .....	1,007
Laboratory examinations.....	25,161
X-ray examinations.....	10,603
Audiograms .....	102
Keystone visual.....	6,785
Harrington flocculation.....	613
<b>Total services for employees at request of private physician</b> .....	<b>13,025</b>
X-rays .....	2,971
Laboratory examinations.....	3,032
Treatments—dressings .....	249
Hypodermics .....	4,216
Electrocardiograms .....	541
Physiotherapy .....	2,002
Audiograms .....	11
Other .....	3

SOURCE: Kilgus, John F., M.D. Health Services for State Employees in Connecticut—The First Ten Years, *Connecticut Health Bulletin* 74: 10 (January) 1962.

## **Operating Costs**

The amount expended for fiscal year 1960-61 was \$68,929.89.

As a contribution to the service, the Highway Department pays the salary of an occupational nurse, and purchases equipment and supplies for the branch clinic. The nurse at the Highway Department Building is a member of the health service staff and the Department of Health is reimbursed for her services. The same cooperation will be extended by the Labor Department and the Motor Vehicle Department.

## **Evaluation of Program**

The program is considered an asset to the State. The money invested in it by the State is returned in many ways. In addition to direct benefits, there are many intangible assets to which it is impossible to attach a monetary value.

The State employees appreciate the program and are its greatest beneficiaries. The health service hopes to extend its program by developing additional clinics in other areas of the State.

Success is attributed to various factors, including the loyalty and interest of the clinic's staff members, the interest of both State officials and employees, and the understanding and confidence placed in the program by practicing physicians in the area.

During 1961, 2,562 occupational clinic visits were made. For the most part these involved injuries in the line of duty for which the Attorney General's office is responsible. Also, 1,452 of the X-rays taken were reported as occupational. These were of two types—those relating to occupational injuries and those in conjunction with preplacement, periodic or departmental request examinations. In the same year, 844 physiotherapy treatments were given in connection with occupational injuries. These are all items for which the State is financially responsible and for which it would have had to pay the existing fees of the community if the clinic had not been operating. It is difficult to place a monetary value on the cost of these services, but a conservative estimate is over \$30,000, which is about 43 percent of the funds expended for the program in fiscal 1960-61.

Before the health service was inaugurated, the State Personnel Department arranged with private physicians to perform preplacement examinations. During 1961, 571 preplacement examinations and 448 examinations requested by various agencies were provided at the clinic. Had the State paid only \$10 for each examination (including laboratory and X-ray services) the cost would have been over \$10,000.

Although no supporting figures are available the State Personnel Department believes that the health service has kept people at work, prevented absence, and reduced the number and length of such absence. The experience of both governmental and nongovernmental agencies with employee health programs substantiates the assumption that absenteeism has been reduced. An absence of one day each per year among the State of Connecti-

cut's 24,000 employees would amount to a production loss of \$321,000 at the prevailing wage rate for governmental employees. A reduction of even one-fifth of a day per person in sick-absence would have a value of \$64,000, almost the entire amount spent for the health service in fiscal 1960-61.

The health service has assisted the State Highway Department in combating what a dozen years ago was the greatest source of lost man-hours during each summer; namely, poison ivy dermatitis. Over the 3-year period 1953-55, reports show that 112 State Highway Department employees lost a total of 435 days. During the years 1959-61, the number of employees exposed increased 25 percent, but only 22 of them lost time, the total being 74 days. At the prevailing national wage rate for government employees, this reduction had a value of almost \$5,000.

### **Related Benefits**

State employees are covered by the Workmen's Compensation Act, administered for State employees by the Attorney General's Office, since the State of Connecticut is self-insured.

The State of Connecticut furnishes Blue Cross, Connecticut Medical Service (Blue Shield), and major medical insurance to all State employees at no cost. Life insurance is partially covered by the State.

## **GEORGIA**

### **Health Services for Employees**

An employee health program, serving approximately 4,000 State employees in Atlanta and vicinity was established in 1956. H. Karl Sessions, M.D., Director of Occupational Health Service, directs the program. Lester M. Petrie, M.D., Director of the Preventable Diseases Branch, was instrumental in promoting the service. A special fund, amounting to \$20,000 for equipment and supplies and \$30,000 for annual maintenance, was set up by the Governor.

The program was established primarily as a means of educating the State employee on how to assume responsibility for his own health, to motivate him to do something about it, and to reveal available health resources within the community.

In considering the need for such a program, State officials made use of estimates which indicated that 90 percent of the population never seek health supervision, but visit a physician professionally only when an illness or injury occurs. An extrapolation of this figure revealed that about 22,000 employees of the State of Georgia were probably not under regular supervision. After considering the age distribution of State employees and the principal causes of death among persons in these age groups, it became evident that the primary emphasis of the program should be on prevention and early detection of chronic disease.

## Current Program

The program maintains a centrally located clinic in the State Office Building. The building was completed in 1955, and the health unit was designed when the building was planned. Equipment includes a hospital bed, a wheelchair, a stretcher, a resuscitation and oxygen inhalator, an obstetric setup, and adequate supplies of plasma expanders and emergency and first aid drugs.

Services are provided by a full-time physician, two nurses, an X-ray technician, and a medical technologist. Two secretaries are also assigned to the program. Services fall into three categories:

1. Counseling in health problems by a public health physician and a public health nurse.

(a) Health and medical problems.

(b) Personal problems insofar as they affect the mental and emotional status of the employee at work.

(c) Advice to employees on the importance of following up their immunizations for polio, tetanus, smallpox, typhoid, etc. In many instances immunizations are offered.

(d) General information and health literature on specific phases of health.

(e) Information regarding policies of the employee health program, stressing the fact that it is primarily a health education program and that medical care must be obtained from the private physician.

2. Multiphasic screening offered on an annual and voluntary basis to all State employees in area covered by pilot program.

(a) Medical history.

(b) Physical tests—height and weight, blood pressure, hearing test, color vision, distant vision, near vision, visual field.

(c) Laboratory tests—chest X-ray, urine test for albumin and sugar, blood sugar, hemoglobin, blood typing, serology (STS).

3. First aid and emergency service are available at the clinic or anywhere in the area of the capitol building and State offices as the case may demand.

## Utilization of Service

Data on cases receiving one or more types of service, in 1957 and 1961 show that services increased considerably as employees became familiar with the program.

<i>Type of service</i>	<i>Cases handled</i>	
	<i>1957</i>	<i>1961</i>
Total cases-----	1, 430	6, 430
Counseling -----	879	1, 893
Emergencies -----	551	4, 537
Minor medical-----	338	3, 661
Major medical-----	11	18
Minor traumatic-----	198	858
Major traumatic-----	4	-----



Multiphasic screening began May 1, 1957, and by December 31 of that year 1,507 employees had been screened. By June 30, 1962, over 4,600 employees had been screened one or more times. The 9,324 screenings revealed more than 3,000 abnormalities, less than one-third of which were previously known to employees. The principal findings were overweight, hypertension, hearing and visual defects. As a result of the screenings, many employees visited their private physicians.

In September 1961, 840 State employees were screened for glaucoma during "Sight Saving Month." Eighteen persons screened positive. Further study by private ophthalmologists revealed that six employees did not have glaucoma, eight had possible and four had chronic simple glaucoma. Only one of these employees suspected the presence of any serious eye condition.

### **Procedure for Screening**

Arrangements for the screening program are made in advance with the director of personnel of each agency. Each employee receives a pamphlet describing the service, and appointments for those desiring to participate are scheduled at the rate of four or five per half-hour. About 12 screenings are scheduled for each morning. The afternoons are reserved for laboratory work, reading of chest films, counseling, and routine activities.

Each person to be screened is asked to read and sign a statement concerning the purpose of the program and the fact that the results are confidential. A numbered card is made up for each person, giving name, age, department, and other information. Approximately 20 minutes of the employee's time is required for screening activities. A report on the screening is sent to each employee personally, along with a record of his immunizations, sensitivities, blood type and Rh factor, on a permanent plastic-enclosed billfold card. If an abnormality has been found, the employee is urged to see a physician of his choice.

Criteria for referral to physicians are as follows:

1. *Weight*.—All employees who are 10 percent overweight or 20 percent underweight, as determined by standards of the Metropolitan Life Insurance Company correlating height, weight, and age, are notified of the abnormality because of the high incidence of associated disorders in people with weight problems.

2. *Blood pressure*.—All employees with a blood pressure above 160/90 are referred for further evaluation and followup.

3. *Chest X-ray*.—A 70 mm chest X-ray is usually taken unless there is a past history of pulmonary disease. In this case a 14 x 17 film is used. The X-rays are read in the employee health unit and consultations are held with the Division of Tuberculosis Control in questionable cases. All employees with roentgenographic evidence of pulmonary disease or significant abnormality are referred to their own physician.

4. *Hearing*.—All employees who show a loss of 20 decibels at two or more

frequencies, or who show a loss of 30 decibels at one or more frequencies are referred.

5. *Color vision.*—The employee is notified of the type and kind of defect, but no referrals are made.

6. *Distant vision.*—All those with visual acuity of less than 20/30 in either eye, as checked on a Bausch and Lomb orthorater, are advised to consult their private physicians.

7. *Near vision.*—Those with ratings less than 20/30 on the orthorater are referred.

8. *Visual fields.*—All who fail to see three or more of the spots on a Harrington-Flocks multiple-pattern screener are referred.

9. *Urine test for albumin and sugar.*—All urine tests showing a positive reaction are repeated prior to referral, or prior to the administration of a blood sugar examination.

10. *Blood tests.*—All employees with a blood sugar above 130 mg. per 100 cc. of blood 2 hours after ingestion of 50 mg. of glucose are requested to return for a 3-hour glucose tolerance test. Referrals are made on the results of the curve produced. All employees with a hemoglobin below 12 or over 17 grams are referred. Venereal disease referrals are handled by the VD control section of the Public Health Department directly from the laboratory report.

### **Evaluation of Program**

The value of multiple screening activities was described by Dr. Harry Dickson, former Director of Occupational Health Services in Georgia, as follows: "The principle of multitest health screening is approved only if it is correctly understood. There is danger of creating a false sense of security. We must use the tests to teach the truth or the tests will teach error. It is better not to test than to teach falsehood. In an occupational health program where complete examinations are not feasible for reasons of economy or otherwise, the multiphasic health testing is recommended. It attracts employees to the health center, where the principles of good health can be taught. Employees must be shown that they should turn to their personal physician for medical evaluation and that, without this medical evaluation, the tests are of no value to them. A cardinal principle of administering such tests is to teach each individual that, even though the results are negative, this does not imply a clean bill of health."

There has been wide and enthusiastic acceptance of the State's health program by employees and management. Many cases of disease with insidious onset have been detected resulting in early treatment which has permitted continuation of employment. The demand for services has increased each year.

A small random sample of 278 employees screened, showed that 167 had one or more defects or abnormal response to tests. In 138 cases, these were detected on the first screening. Of the 140 males, 40 percent returned in a

subsequent year for a second screening, 19 percent received 3 screenings, and 4 percent were screened 4 times. Of the 138 females, 27 percent were screened twice, 19 percent three, and 10 percent 4 times.

More than one-half of the 278 individuals screened were between 20 and 40 years old, and 50 percent of them displayed interest by returning one or more times. Of the 68 males over 40 years of age who were screened, 50 returned for subsequent screenings. Fifty-three females over 40 years of age were screened, and 37 of them returned in other years. Although the sample is small, the number of persons in each age group who returned for additional screenings indicates that the program does have educational value. It would appear, however, that the proportion interested decreases after each test, for only one-fourth of the 278 employees received more than two screenings. Part of this decrease is undoubtedly due to labor turnover and to the fact that where abnormalities were found an employee was referred to his own physician. The number of employees who visited a physician was not determined. However, reports from some of the physicians visited, as well as the fact that many employees who originally reported no family physician gave a doctor's name during subsequent screenings, indicate that counseling was fruitful.

### **Future Plans**

Future plans for the program include (1) the addition of dental screening, (2) the institution of preplacement physical examination standards, and (3) the extension of services to a greater geographic area within the State.

The law dealing with preplacement physical examinations for State employees was amended in 1960. It designates the State employee health service as the State's medical consultant, to review reports of findings during preplacement examinations. The physician in charge of the health service served as chairman of a committee of three physicians to recommend medical and physical standards for job classifications, maximum fees, and reporting forms. A manual for preplacement examinations has been prepared in cooperation with the State Merit System. These examinations are provided by a physician employed by the State or a licensed physician of the applicant's choice. Under a 1962 amendment, persons electing to use a private physician bear the expense of the examination.

### **Operating Costs**

During fiscal 1962 the employee health service has operated within a budget of \$45,000.

### **Related Benefits**

State employees under the merit system accumulate sick leave with free pay at the rate of  $1\frac{1}{4}$  days per month to a maximum of 90 days.

A State employee health insurance plan went into effect on July 1, 1962. Prior to that time employees were covered by Blue Cross-Blue Shield plans on

a voluntary basis. The new plan provides basic medical and major medical benefits, with the employee sharing a portion of the cost through payroll deduction.

State employees are covered for workmen's compensation under the State Workmen's Compensation law. Payment of medical, surgical, and hospital costs up to \$1,500 may be made; also, small payments may be made for loss of time.

## **PENNSYLVANIA**

### **Health Services for Employees**

The employee health service was organized in 1957 to provide services for 14,000 employees of the State Government at Harrisburg. Services began early in 1958. Walter J. Gerstle, M.D., is medical director, and the program is administered by the Health Department's Bureau of Environmental Health. Full service is provided to the following agencies: Departments of Health, Public Welfare, Labor and Industry, Revenue, Liquor Control Board, Auditor General, Treasury and sections of other agencies located in buildings with health units. Only treatment of occupational injuries and diseases and emergency service are provided for the other State agencies at the present time. However, activities are under way to expand the program to provide full service to all agencies at Harrisburg. Future plans call for the establishment of employee health service health units at Philadelphia and Pittsburgh and the use of a mobile health unit to provide service to the remainder of the Commonwealth on a regular schedule. This expansion was approved by the Governor in January 1960.

#### ***Current Program***

The service now maintains five health units, one of which is outside the Capitol Hill area. Two additional health units <sup>1</sup> are under construction, and another one is in the planning stage. Upon completion of the expansion at Harrisburg, eight health units will be maintained. The staff now consists of a medical director, an occupational physician, an occupational psychiatrist, an occupational nurse supervisor, 11 occupational nurses and 3 medical secretaries.

#### ***Services Provided***

##### ***Healing:***

1. Emergency care of accidents and illnesses occurring to employees and visitors during working hours.

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<sup>1</sup> A sixth health unit, the Capitol Hill unit, was removed from the jurisdiction of the employee health service in 1961, to serve exclusively the legislature. It will be replaced by a health unit in the North Office Building.

2. Treatment of occupational injuries and illnesses, unless such treatment is beyond the facilities of the program or the employee desires treatment by the physician of his choice.

3. Treatment of minor nonoccupational illnesses and injuries, provided that the condition is one for which the individual would not reasonably be expected to seek the attention of his personal physician, or to enable the employee to complete his current work shift before consulting a personal physician.

*Preventive:*

1. Health maintenance of employees on a voluntary basis.

2. Special examinations in connection with job placement and special medical problems.

3. Mass preventive inoculations.

4. Health education and counseling.

5. Protection of individuals against health hazards in the work environment.

*Utilization of Services*

Services provided during the years 1959-62 are listed in table 12. In 1962, a total of 1,240 employees were referred to their personal physicians. This referred group represents 9 percent of those who called at the health units as the result of a nonoccupational disease.

**TABLE 12.—Comparison of yearly activities, Pennsylvania Employee Health Service, 1959–62**

Item	1959	1960	1961	1962
Number of working days . . . . .	245	244½	244½	244½
Visits and conferences, total . . . . .	17,302	20,377	23,490	23,165
<b>Occupational:</b>				
<b>Diseases:</b>				
First visits . . . . .	45	10	16	12
Revisits . . . . .	30	12	48	55
<b>Injuries:</b>				
First visits . . . . .	1,102	1,147	1,327	1,335
Revisits . . . . .	763	1,163	1,398	2,077
<b>Nonoccupational:</b>				
<b>Diseases:</b>				
First visits . . . . .	9,106	12,293	14,656	13,808
Revisits . . . . .	4,221	3,757	3,723	3,400
<b>Injuries:</b>				
First visits . . . . .	1,242	1,303	1,554	1,597
Revisits . . . . .	793	692	768	881
<b>Immunizations, total . . . . .</b>	<b>1,839</b>	<b>7,960</b>	<b>9,936</b>	<b>9,388</b>
Polio . . . . .	1,332	1,404	2,271	2,326
Influenza . . . . .	362	6,424	7,379	6,896
Smallpox . . . . .	13	20	8	.....
Others . . . . .	132	112	278	166
<b>Medical director:</b>				
Conferences with supervisors . . . . .	30	80	153	120
Other conferences . . . . .	103	117	199	239
Meetings attended . . . . .	39	93	79	54
Care of injury and illness <sup>1</sup> . . . . .	1,629	1,092	1,474	2,715
Health maintenance examination . . . . .	56	17	25	7
Special examinations (evaluations of special health and special job placement problems) . . . . .	364	556	543	520
<b>Selected activities:</b>				
Referrals to personal physician <sup>2</sup> . . . . .		165	1,208	1,240
Evaluations and conferences by consulting psychiatrist <sup>3</sup> . . . . .		39	47	303

<sup>1</sup> Visits for occupational and nonoccupational injury and disease. These are also reported under Visits and Conferences.

<sup>2</sup> Referrals were not recorded for 1959; 1960 figure is for November and December only.

<sup>3</sup> 1960 figures are for 4 months only.

Causes of illness and injury reported during 1961 and 1962, ranked according to frequency of visits, were as follows:

Disease:	Cause of visit	Frequency	
		1961	1962
Respiratory	-----	4, 187	4, 880
Gastrointestinal, hepatic and biliary	-----	2, 344	1, 918
Ear, nose and throat	-----	2, 263	1, 655
Dermatological	-----	1, 648	1, 803
Cardiovascular	-----	1, 266	1, 042
Musculoskeletal	-----	1, 222	1, 232
Neurological	-----	1, 221	1, 528
Metabolic and endocrine	-----	1, 062	1, 072
Gynecological	-----	997	846
Eye	-----	945	960
Undetermined	-----	990	-----
Other	-----	1, 246	1, 182
Injury:			
Soft tissue injuries	-----	1, 948	2, 567
Lacerations	-----	888	1, 169
Abrasions	-----	662	618
Burns	-----	450	488
Foreign bodies	-----	317	400
Puncture wounds	-----	185	270
Fractures	-----	126	108
Dislocations	-----	1	8

In August 1961, a voluntary diabetic detection program was offered to all State employees at Harrisburg. Over 5,800 employees, representing almost one-half of those eligible, received the test. Thirty-four cases of suspected diabetes were found and referred to family physicians for followup. An educational program using the new movie "Diabetes Unknown" preceded the test.

Other recent activities have included an evaluation of all handicapped employees of the Department of Revenue, cytologic tests for cervical cancer for female employees of the Health Department and the Department of Public Welfare, and tonometry testing for glaucoma.

A psychiatric program started in March 1960 proved so successful that a full-time psychiatrist was employed in September 1962. The volume of part-time psychiatric service, provided one afternoon weekly, from August 1961 to July 1962, is shown by the following figures:

Activities	Number
Sessions held (one afternoon weekly)	48
Initial evaluations	36
Followup evaluations	57
Conferences with individual supervisors	10
Conferences with individual personnel directors	4
Individual conferences with the medical director	16
Workshop sessions with groups of supervisors	3
Conference with employee health service staff	1

## **Evaluation of Program**

The annual report for 1961 of the Pennsylvania Department of Health states that definite progress has been made in the operation of the employee health service. The patient-physician and patient-nurse relationship has improved, and there is better understanding of the program's functions among employees and the supervisory force. More space, equipment, and personnel will be needed as the program expands.

## **Cooperative Activities**

The program is actively seeking opportunities to cooperate with other parts of the State Health Department and with other agencies. For example, in cooperation with the Bureau of Rehabilitation of the Department of Labor and Industry, it has developed an improved procedure for placement of handicapped employees.

According to the medical director, the State successfully employs several hundred physically impaired workers, epileptics, and discharged patients of mental institutions.

## **Operating Costs**

Available cost figures for fiscal year 1961-62 do not provide an accurate determination of the percent per capita cost of the service. During the budget year, four health units received full service, one unit was served full time for only half a month, and another received full-time services for 4 months. Partial service for occupational injuries and emergency care was given to all agencies in the State Government during this period. The equipment costs refer mostly to a newly-opened health unit, but equipment was also bought for another unit under construction.

### *Costs reported for the period July 1, 1961, to June 30, 1962*

	<i>Item</i>	<i>Amount</i>
Equipment cost, total	-----	\$8,000.00
Operating expenditures, total	-----	81,158.67
Salaries of full-time staff	-----	70,600.00
Salaries of part-time staff	-----	2,100.00
Drugs and biologicals	-----	5,100.00
Laboratory and medical supplies	-----	950.00
Telephone	-----	750.00
Contracted maintenance services	-----	750.00
Books	-----	102.74
Travel	-----	575.00
Miscellaneous	-----	230.93



## **Related Benefits**

State employees are covered by workmen's compensation, by social security and by a State retirement system. Health insurance benefits include Blue Cross and Blue Shield group insurance, with each employee paying his own premium. Plans for group life insurance for all employees are pending.

## **PHOENIX, ARIZONA**

### **Health Services for Employees**

An occupational health program was established by the city of Phoenix in 1955 for all city employees, including 3,370 full-time and approximately 170 part-time workers. The program was set up to assure proper placement of employees, improve employee health, reduce sick-absence, and improve employee efficiency and morale. Leroy J. Brenneman is director of the Personnel Department, which administers the program.

### **Staff and Facilities**

Staff includes two part-time physicians for three hours a day each, one full-time clerk-steno-physician's aide, and one part-time clerk typist-physician's aide.

The medical department is in the centrally located, downtown, municipal building complex. It consists of one reception room-business office, one consultation room, two examining rooms, one testing room for visual and hearing testing, one bathroom, and one laboratory.

### **Current Program**

Services include preplacement and periodic physical examinations, special physical examinations ordered by supervisors or department heads for apparent health problems, minor first aid, immunizations, and counseling.

The preplacement examination consists of chest X-ray, eye test by Keystone equipment, hearing test by audiometer, urine test for albumin and sugar, serological test for syphilis, hemoglobin determination, electrocardiogram, and a general physical examination. (X-rays and serological tests are done without charge by Maricopa County and the State of Arizona health agencies.) Females are required to have breast and pelvic examinations either as a part of the preentry examination or at their own expense by their family physician.

Complete annual health appraisals, similar to the preplacement examinations, are offered employees on a voluntary basis after one year of employment. Over two-thirds of the employees now have an annual medical examination either at the center or by their family physicians.

Immunization services for diseases such as influenza and poliomyelitis are provided at nominal cost to employees and their families in the face of anticipated disease epidemics.

Home visits by a physician associated with the program are made at the request of the supervisor or department head.

Health education literature is distributed to employees by the Personnel Department.

Psychiatric services are provided for employees apparently needing attention. The city pays for the first examination; the employee pays for additional consultations and therapy. Psychiatrists were used to screen police applicants for a period of 3 years, but their services were discontinued by mutual agreement.

Except for minor first aid, the program does not provide services for occupational illness or injury. Other than the immunization procedures mentioned above, no services are performed for employee's families.

### **Utilization of Service**

The percentage of employees utilizing the services seems to remain relatively constant from year to year with perhaps a gradual increase. Approximately two-thirds of the employee population receives either preplacement or annual periodic examinations each year. The total number of employees utilizing the service has increased markedly inasmuch as the employee population has more than doubled during the existence of the health program. Also, the scope of the examination has been progressively expanded, and new procedures are being continuously evaluated and added to the examination.

### **Operating Costs**

The estimated cost of the program for the fiscal year 1962-63 is as follows:

<i>Item</i>	<i>Amount</i>
Total -----	\$30,028
<hr/>	
Salaries: two part-time physicians, one clerk-receptionist and one part-time clerk-----	21,809
Printing, supplies, etc-----	4,160
Housing, utilities and janitorial services-----	3,648
Depreciation: furniture and equipment-----	411

### **Evaluation of Program**

The program has contributed to a reduction in sick leave from 7.7 days prior to 1955 to an annual low of approximately 5 days per employee.

### **Related Benefits**

Both full-time and part-time employees are covered by workmen's compensation under the Industrial Commission of Arizona.

## **BERKELEY, CALIFORNIA**

### **Health Services for Employees**

A health program for approximately 800 full-time and 500 to 600 part-time employees of the city of Berkeley is administered by the Personnel Department. Facilities are located in Room 19, City Hall, Berkeley. William F. Danielson is director of personnel.

Prior to August 1957, the Personnel Department had contracted with three or four physicians for medical examinations of new employees and for annual examinations of uniformed members of the Police and Fire Departments. The initial examinations were often given after the applicants had been accepted and were on the job. In August 1957, responsibility for this service was assigned to the public health clinic of the Public Health Department. The employee health program required approximately 8 to 10 hours a week of the resident physician's time and about one-third of the time of a clinic nurse. Preplacement examinations were provided for all departments except the Police Department, and periodic examinations were provided for firemen. Police Department services continued as before.

Because of the uncertainty of continuing the services of a resident physician, a contract was made with the Industrial Medical Group, effective August 1, 1958, for the provision of employee health services at the public health clinic. The contract called for 2 hours of physician's time per city of Berkeley workday. Later this was extended to 2½ hours to allow more time for consultation with the city manager, director of personnel, and department heads and supervisors. Transfer of the program in June 1960 from the public health clinic to the new offices of the Industrial Medical Group has permitted greater flexibility in scheduling medical appointments, has effected a number of operating economies, and has resulted in better service at a lower unit cost.

#### **Current Program**

Preplacement examinations are provided for all new employees whether full- or part-time, temporary or intermittent, with the exception of camp employees who are not food handlers, "workreation" children, and physicians who work in "well-baby" clinics. Without exception, all employees fill out a medical history form which is reviewed by the personnel medical officer. The most significant findings have been among candidates for temporary and intermittent work, such as laborers, garbage men, and cooks. When the program began, all workers who had not been examined were required to have an examination.

Periodic, special, and return-to-work examinations are also provided. Special and return-to-work examinations usually require relatively little physician's time, although individual cases have sometimes required several

visits and several hours of physician's time. Periodic examinations are mandatory and are scheduled as follows:

- |  |   |
|--|---|
| 1. City manager<br>Department heads<br>Division chiefs | Every year  |
| 2. Clerical, professional<br>and other office workers  | Under age 46, every 3 years<br>Over age 46, every 2 years |
| 3. Foremen, laborers, and<br>outdoor workers           | Under age 46, every 2 years<br>Over age 46, every year    |
| 4. Camp personnel and other<br>seasonal personnel      | Every season  |
| 5. Firemen and police (all<br>ranks, including chief)  | Every year  |
| 6. Handicapped persons                                 | As required   |

Immunization services include tetanus shots for employees who have a high risk of possible exposure, such as firemen, policemen, refuse collectors, and gardeners. Shots for poliomyelitis and influenza are available when needed.

Visits are made to worksites by the personnel medical officer to observe working operation. This activity has been particularly helpful in the establishment of medical standards for various occupational groups employed by the city. Information obtained by the doctor during these visits also assists in determining when an employee who has had an injury or a long illness is medically fit to return to duty.

Consultation services to the city manager, the director of personnel, and department heads and supervisors, account for about one-third of the physician's time allotted to the program. Most of the consultation concerns workmen's compensation cases. Prior to the appointment of a personnel medical director, the city had no procedure for obtaining medical advice on such matters. The doctor now receives and reviews all workmen's compensation reports, physician's reports of first treatments of accidents, and other relevant data.

An employee health education program, including counseling and referral to private physicians for treatment, is also part of the service. Classroom instruction has been provided to policemen, firemen, and camp division personnel in newer methods of resuscitation, and other occupational health practices.

## Utilization of Service

During the fiscal years 1959-60, 1960-61 and 1961-62, the following medical examinations and inoculations were provided:

Type of service	Number		
	1961-62	1960-61	1959-60
<b>Total</b> .....	<b>916</b>	<b>984</b>	<b>987</b>
<b>Examinations:</b>			
Preplacement.....	295	277	223
Periodic.....	453	533	446
Special.....	38	56	214
Return-to-work.....	102	104	70
<b>Inoculations only</b> .....	<b>28</b>	<b>14</b>	<b>1 34</b>

<sup>1</sup> Incomplete, 1959 figure not available.

## Operating Costs

Budgets for the fiscal years 1961-62 and 1962-63 are as follows:

Item	Program budget	
	1961-62	1962-63
<b>Total</b> -----	<b>\$12, 059</b>	<b>\$13, 879</b>
Staff <sup>1</sup> -----	3, 109	3, 489
Printing of forms-----	150	250
Contract with industrial medical group <sup>2</sup> -----	7, 500	8, 640
Contract with physician serving police department.---	1, 300	1, 500
Immunizations <sup>3</sup> -----		

<sup>1</sup> Includes payment for part-time services of director of personnel—10 percent of time; senior personnel technician—5 percent; personnel technician—5 percent; senior stenographer-clerk—5 percent; intermediate account clerk—20 percent.

<sup>2</sup> The original contract with the Industrial Medical Group was established on a trial basis, with experience to be reviewed after a reasonable length of time had elapsed. A number of significant economies have been achieved through the contractual service. Beginning June 30, 1960, an annual saving of \$2,878 was accomplished through the transfer of the location of the program to the Industrial Medical Group offices. Also, the number of employees covered by the program has grown and will increase appreciably when the library employees are included. This addition is expected during fiscal 1962-63.

<sup>3</sup> Immunizations against general hazards to public health (such as for influenza and poliomyelitis) are considered a function of the Public Health Department. It has been recommended that funds be budgeted in the Public Health Department or be transferred to the program as required to meet emergency conditions. Immunizations against work-connected hazards (such as tetanus), are provided without additional cost under the Industrial Medical Group contract.

The director of personnel reports that the department has found that payment on an annual basis for medical services rendered is probably the most equitable procedure for all parties concerned. Under such an arrangement,

the examining physician is able to see an individual employee frequently over an extended period of time if necessary. Payment on a flat fee-per-examination basis does not encourage this type of care.

### **Evaluation of Program**

Although meaningful data will not be available for a year or two, the director of personnel considers that the program has contributed significantly to the effective and economical operation of the city of Berkeley and has saved far more than it costs. He reports that much still remains to be done, especially in reducing the employee accident rate, providing adequate medical care to injured employees, and enabling injured employees to return to duty as soon as possible.

The lost-time accident frequency rate for city employees in Berkeley tends to fluctuate between 30 to 50 frequency per million man-hours worked. The median rate for all California industry varies between 11 and 12 per million man-hours worked. Except for construction, logging, and similar industries, municipal government would appear to rank among the highest in industrial accident experience. The high rate is believed to be due in part to the following factors:

1. Most municipal governments are not aware that there is a safety problem.
2. Much existing legislation tends to encourage rather than discourage industrial accidents in municipalities. ("Presumptive" legislation in workmen's compensation law presumes, for example, that all firemen's heart cases are industrial accidents.)
3. Municipalities have numerous functions with varying degrees of accident hazard. Meaningful comparisons cannot be made of police, fire, garbage collection, recreation, building inspection, and other varied functions and services. A city with garbage collection, for example, is much more likely to have a higher industrial accident record than a city which does not perform this function.

Potential workmen's compensation cases are being weeded out by the preplacement examinations. In addition, cases of positive serology are found about every month; these applicants are not rejected but are referred for treatment to private physicians. The periodic examinations have frequently revealed significant abnormalities.

Those responsible for the program feel that employee health has generally improved. The fire department estimates that its employees have lost one ton of fat since it began actively promoting weight reduction and physical fitness.

The immunization program against tetanus has resulted in substantial savings both to the insurance carrier and the city. It has eliminated antitoxin sickness among employees, which resulted sometimes in hospitalization.

As the result of the close working relationships of the physicians associated with the program and the physicians in the community, there has been general acceptance of the program.

Based on data compiled by the program, medical standards are now being developed for various employee groups.

### **Related Benefits**

Workmen's compensation coverage is provided under the State Compensation Insurance Fund; temporary disability is covered by a special State law. Employees are also eligible on a voluntary basis for hospital and medical care insurance.

## **SAN JOSE, CALIFORNIA**

### **Health Services for Employees**

A health service program for the 1,500 employees of the city of San Jose was established in 1950 and is administered by the personnel department, assisted by the Department of Health. D. M. Bissell, M.D., city health officer directs the program located at 151 West Mission Street in San Jose.

Initiation of this program was prompted by losses due to improper placement of employees and to sick absence. For example, the medical cost to the city for one case alone was over \$10,000. It involved a man with a defective back who had been employed without a preplacement examination. In another instance, a patrolman in the police department was given an agility test which he passed; but without a medical examination, an old football injury was not discovered until he began to ride a motorcycle. The city spent \$2,000 on this employee, in addition to his lost time and payment for compensation.

Based on the recommendations of the Council on Occupational Health, AMA, for an adequate industrial health program, the city developed its own individual program. In the opinion of the program director, there is no one best program for every city, large or small. Each city should develop plans to meet the needs of its employees within the financial, medical, and hospital resources available.

### **Staff and Facilities**

Services are provided in the City Health Department Clinic by part-time board specialists in internal medicine, a full-time nurse and a clerk. The Health Department provides laboratory and X-ray service.

### **Current Program**

Services provided include the following:

1. Preplacement examinations, required for all applicants. Persons applying for positions with the Fire and Police Departments must meet higher physical requirements than others. Examinations are paid for by the city, but if an applicant challenges the findings of the city physician he may pay for further examinations. In case of a dispute, the city may pay for additional tests.

2. Periodic examinations every 3 years for employees under 45 years of age and annually for those over 45 years old.

3. Return-to-work, retirement, and other special examinations at discretion of the city physician.

4. Home visits by a registered nurse for all sick employees who are not under the care of a physician.

5. Health education and counseling by physicians and nurses, and referral to private physician with followup on recommendations regarding proper care of physical defects.

6. Recommendations regarding transfer of a person with a physical defect to a more suitable position.

### **Utilization of Service**

During 1960, 568 preplacement medical examinations were given. The Department has found that counseling individuals requesting information and listing of job qualifications on announcements of physical requirements for jobs has saved time and money. Candidates who are obviously unqualified are less apt to apply.

Recurring medical examinations for city employees totaled 448 during 1960. The staff nurse made 1,234 sick call visits, and immunization clinics were regularly scheduled during the year.

### **Operating Costs**

Exclusive of capital outlay, medical examinations cost approximately \$11 per person. This amount includes hourly fees to physicians and nurse's salary, laboratory costs, and supplies. A reexamination (periodic, special) costs more than a preplacement examination because of the time required for discussion of medical findings.

The budget for 1962-63 is as follows:

Total .....	\$18, 785
Supervising medical officer.....	1, 246
Staff nurse.....	8, 439
Medical supplies and vaccine.....	1, 000
Employee medical examinations.....	2, 600
Preplacement medical examinations <sup>1</sup> .....	5, 500

<sup>1</sup> Done by contract at \$10 per hour.

### **Evaluation of Program**

The program has proved effective in reducing time lost from illness or injury, raising the health level of workers, and returning a rebate of the city's workmen's compensation insurance premium.

According to the program director preplacement physical examinations have demonstrated that they can serve a number of objectives. They pre-



vent the employment by the city of persons who are medically unfit for employment. They permit the grading of employable persons according to the physical demands of the job. They also promote the employment of persons with handicaps for jobs within their capacities. Periodic examinations, to assure that the employee is physically fit to perform his duties, protect both the employee and the city. The detection of remediable defects prevents serious illness and long absence. The results are reflected in lower workmen's compensation premiums and in reduction of time lost from the job.

In 1960 sick leave among San Jose employees reached a low of 3.25 average days per employee. This is less than one-half the average national loss by usually working persons. In 1960, for the second successive year, San Jose won a first-place safety award in a contest among California cities of similar size. The winning injury frequency rate, 13.7 for 1959-60, was a large reduction from the city's winning rate of 23.1 lost-time injuries per million man-hours worked in 1958-59. Careful screening of applicants, together with the efforts of safety committees, has contributed to this reduction. The gross cost of compensation insurance in 1960 was \$129,318. A rebate was received of \$26,510, representing approximately \$8,000 more than funds budgeted for the medical program for the fiscal year 1962-63.

### ***Related Benefits***

Workmen's compensation is provided through the State Compensation Insurance Fund. Optional medical and hospital insurance is available at minimal cost. Ten days of sick leave are given annually, with accumulation up to 150 days permitted. Cash for a portion of accumulated leave is paid upon retirement. Employees are also covered for temporary disability benefits under the California law.

## **HARTFORD, CONNECTICUT**

### **Health Services for Employees**

An employee health program covers approximately 2,500 employees of the city of Hartford. In addition, 1,000 employees of the Board of Education are gradually coming under the program. Norton Chauser, M.D., is director of the program which is located at 56 Coventry Street in Hartford.

Established in 1952, the program serves as a demonstration for industrial medical operations in the area. The importance of practicing the tenets that the Health Department was trying to promote in industry served as a stimulus for the establishment of the program.

At first, the program was closely tied to the Personnel Department, but it is now an independent bureau of the City Health Department. Originally, the plan was to provide only preplacement examinations, but requests for other services were frequently received. An extensive program developed which now includes supervision of compensation cases among city employees.

### **Current Program**

The clinic is located at the City Health Department. It includes a full clinical and public health laboratory, an X-ray department, and limited physical therapy facilities. In addition to the medical director, the staff includes six part-time physicians for a total of 20 hours each week, one full-time registered nurse, one full-time medical secretary, and a part-time radiologist. Student nurses from the University of Connecticut serve as affiliates with the program.

Services include physical examinations prior to placement and thereafter under special circumstances. Care is available for occupational illness and injury and for minor nonoccupational conditions. All employees have the privilege of a preliminary evaluation of any health problem. Routine preventive services include such items as poliomyelitis, influenza, and tetanus vaccines, tuberculosis and cancer detection programs, and diabetes screening. A small number of employees also receive poison ivy injections. The staff devotes considerable time to medical and social counseling.

### **Utilization of Service**

During 1961 the health program performed 964 physical examinations—600 complete and 364 partial. As indicated by the following distribution, most of them were preplacement or return-to-work examinations:

	<i>Type of examination</i>	<i>Number</i>
Total	-----	964
Complete	-----	600
Preplacement	-----	499
Promotion	-----	58
Pension	-----	4
Welfare employment	-----	23
Other	-----	16
Partial	-----	364
Return to work	-----	145
Special evaluation	-----	91
Physical inspection	-----	81
Limited hazard	-----	24
Other	-----	23

More than 50 percent of the physical examinations were performed for three departments: police—214; parks and recreation—202, and hospital—138.

In connection with the examinations 1,738 tests were ordered as follows:

	<i>Type of test</i>	<i>Number</i>
Total	-----	1, 738
X-ray	-----	559
Chest	-----	547
Extremity	-----	5
Other	-----	7
Laboratory	-----	1, 125
Blood	-----	569
Urine	-----	554
Other	-----	2
Immunization	-----	37
Tetanus	-----	5
Poison ivy, etc.	-----	32
EKG	-----	17

During 1961, a total of 3,303 clinic visits were reported; of these 1,524 were first visits and 1,779 repeats. Visits due to occupational illness or injury slightly outnumbered those of nonoccupational origin—1,731 and 1,572 visits, respectively. Visits by males greatly outnumbered those by females. More than 900 visits each were made by members of the Police and Public Works Departments and about 500 each by the Parks and Recreation Department and the Hospital Department. These four departments accounted for nine-tenths of the visits made during the year. More than one-half of the visits were made by persons under 40 years of age. Treatments in connection with these visits numbered 2,114 and tests and immunizations, 502. Referrals in this year included 104 to private physicians, 29 to specialists, and 56 to hospitals.

TABLE 13.—Classification of clinic visits during 1961, by type of illness or injury, Hartford Employee Health Service.

<i>Type of illness or injury</i>	<i>Number of visits</i>
Illness, total.....	1,478
Respiratory.....	476
Skeletal.....	389
Skin.....	220
Central nervous system.....	103
Digestive disorders.....	88
Endocrine disorders.....	38
Genitourinary disorders.....	31
Circulatory disorders.....	18
Neuroses.....	17
Neoplasms.....	10
Anemias.....	5
Infectious disease.....	4
Ill defined, etc.....	79
Injury, total.....	1,825
Sprains—strains.....	936
Superficial injuries.....	383
Lacerations.....	188
Foreign body in orifice.....	73
Fractures.....	60
Burns.....	50
Head injury, no fracture.....	9
Poisons.....	7
Internal injury.....	1
Other and unspecified.....	118

Almost 1,500 clinic visits were due to illness, and about 1,800 were the result of injuries. A breakdown according to type is shown in table 13. The principal causes of illness were respiratory, skeletal, and skin disorders, and most of the injury visits were due to sprains and strains. Visits for a number of other potentially serious conditions were also reported.

### **Operating Costs**

For the fiscal year 1961–62, salaries at the clinic amounted to \$16,074.83. Of this amount, \$7,321.66 was paid to clinic physicians on the basis of \$8 an hour for 20 hours a week. The remainder was for nursing and clerical staff.

### **Related Benefits**

Blue Cross hospitalization is provided each employee at the city's expense. The city also pays for coverage under the Connecticut Medical and Surgical Plan. Sick leave is earned at a rate of 1.5 days per month, or 15 days per year up to a maximum of 90 days.

## **CLEVELAND, OHIO**

### **Health Services for Employees**

An employee health program for approximately 10,500 city employees has been operating in Cleveland since November 1955. Policemen and firemen, who have their own program, are not covered by this service. The program, administered by the Office of Personnel Administration, was established as a service to employees and as a means of providing working conditions that would enable each employee to do the best possible job. Frank R. Hanrahan, M.D., is medical director and John J. Liebag is administrator.

#### ***Current Program***

Services are provided at a clinic located in the City Hall, between 8 a.m. and 4:30 p.m. The staff consists of a part-time physician, a full-time registered nurse, and a visiting nurse.

The program coordinates first aid services, care for on-the-job illness, the city employees' blood bank program, and a preventive health program which provides opportunity for immunizations, chest X-rays, diabetic detection, and similar services.

The consulting physician provides medical guidance and counsel to appointing authorities, as required, on the physical fitness of employees to perform their duties properly and with safety to themselves and others. He also conducts preplacement and other physical examinations of employees required in connection with employment, reemployment after retirement, extension of employment beyond retirement age, or hazardous assignments.

All applicants are referred to the clinic for completion of a medical record for employment. No employee is permitted to enter on duty until this record is completed.

The visiting nurse program is considered a service to both employees and supervisors, to assist in working out the job problems that arise from illness. The nurse does not give bedside care, but she will help in making suggestions or referrals for proper care.

## Utilization of Service

During 1961, the following services were provided:

	<i>Service</i>	<i>Number</i>
Examinations, total	-----	1, 583
Preplacement	-----	756
Extension of retirement	-----	193
Return to work	-----	72
School guards	-----	399
Lifeguards	-----	163
Dispensary visits	-----	5, 102
Chest X-rays	-----	1, 283
Immunization, total	-----	4, 023
Polyvalent flu	-----	3, 720
Polio	-----	225
Tetanus	-----	26
Typhoid	-----	26
Smallpox	-----	26
Home visits by visiting nurse	-----	1, 442

## Operating Costs

Operating costs for 1961 amounted to \$18,600 as follows: personal services—\$13,000; medicines and drugs—\$2,500; automobile and upkeep—\$2,100; other—\$1,000.

## Related Benefits

City employees are covered by workmen's compensation under State and local insurance funds. Health insurance is available through the Medical Mutual Insurance Company of Cleveland, Inc.

## COLUMBUS, OHIO

### Health Services for Employees

A health service for the 4,800 employees of the city of Columbus, established by city ordinance in 1956, is administered by the Medical Section of the Department of Industrial Relations. Warren Hicks, M.D., is medical director of the service, which is located at 181 West Washington Boulevard.

The service was prompted by the skyrocketing cost of workmen's compensation, considered to be due in part to a nearly total lack of medical guidance. Within the municipal plan of organization there was no clear-cut overall responsibility for employee health and safety. The principal medical services available were those in the Department of Public Safety, applicable

chiefly to the Divisions of Fire and Police and for care of prisoners. Except for emergencies, physician's services were limited to about one hour daily. At the time, employees of the Department of Health were receiving a limited type of preplacement examination and periodic chest X-rays.

In 1955, the Department of Preventive Medicine of Ohio State University was approached with a request for aid in determining the occupational health needs of city employees. Criteria were developed for an adequate health program for all employees, including police and firemen. The medical aspects of the program were predetermined to include:

1. Routine preplacement physical examinations on employment and transfer.
2. Interval physical checkups for:
  - (a) Employees returning to work after sick leave.
  - (b) Alleged permanent disability due to injury.
  - (c) Employees exposed to toxic material.
  - (d) Accident repeaters.
  - (e) Supervisory personnel (voluntary).
  - (f) Fire and police personnel (compulsory).
  - (g) Drivers of city vehicles (compulsory).
3. Emergency first aid and care of:
  - (a) Work injuries, with continuing review until recovery.
  - (b) Minor nonoccupational illness or injury.
4. Maintenance of individual health records.
5. Cooperation with the safety coordinator on frequent job inspections to identify hazardous work conditions.
6. Health education and counseling of employees.
7. Review of problem cases of prolonged absence following on-the-job injury.
8. Analysis of physical demands of all jobs to guide in placement of applicants.
9. Preparation of a statement of medical policy, a manual of medical department procedures, and written standing orders for guidance of medical personnel.

The program began operating on January 1, 1956, under a part-time acting director. By February, a thorough preplacement physical examination for every job applicant was being provided. By June, when a full-time chief physician was appointed, the staff included three part-time physicians, three nurses, and a secretary. Full services then became available to all employees. Six months later the program was thriving and enthusiastically supported by both the city administration and employees.

### **Staff and Facilities**

The clinic is located in the Health and Safety Building. Originally occupying 700 square feet of space, it has recently been expanded. In addition, a Police Department clinic is maintained in a separate building. The

staff for both clinics now includes one full-time physician, three part-time physicians, three nurses, a secretary, and four senior medical students. The staff also helped establish an air disaster program for the airport.

**Current Program**

Employees of the city of Columbus are now eligible for clinic services during the usual city working hours. Current services include:

1. Emergency treatment for occupational and nonoccupational injuries or illnesses. Occupational injuries receive both treatment and after care. Nonoccupational injuries receive only emergency care, to permit the employee to remain on the job, or until he can see his own physician.
  2. Preplacement physical examinations as requested by the city Personnel Department.
  3. Periodic physical examinations when required by city statutes or requested by a city agency.
  4. Special examinations as requested by a city agency.
  5. Complete physical examinations upon the employee's request as staff time permits.
  6. Immunization shots for lockjaw.
  7. Poliomyelitis shots if requested by the family physician.
  8. Electrocardiograms.
  9. X-ray, laboratory and physiotherapy services for on-the-job injuries.
- Members of the medical staff are available for health conferences on an agency, departmental, or personal level.

**Utilization of Services**

During the calendar year 1961 the following services were provided to employees:

	<i>Type of service</i>	<i>Number</i>
<b>Examinations:</b>		
	Preplacement -----	1, 088
	Return to work -----	1, 515
	Special -----	4, 715
	Routine -----	442
	Promotional -----	64
	Reclassification -----	285
<b>Laboratory:</b>		
	Chest X-rays -----	1, 866
	Urinalysis -----	2, 065
	Serology -----	650
	Visual performance -----	2, 058
	Audiograms -----	25
	Orthopedic X-rays -----	163
	Electrocardiograms -----	57
<b>Physiotherapy:</b>		
	Diathermy -----	214
	Ultrasound -----	384
	Whirlpool -----	54



## **Operating Costs**

The cost of the medical program in 1961 was approximately \$45,000.

## **Evaluation of Program**

Improved medical facilities have reduced the cost of outside consultations. The availability of laboratory and physiotherapy equipment has further contributed to substantial savings of time and money.

A written medical policy statement, "Guide for Medical Examiners, City of Columbus" insures uniformity of medical opinion. Copies are furnished to all key personnel of the city government. Revisions are made and distributed for insertion in the medical guide, as required.

The combined activities of the safety coordinator and the health service have resulted in a reduction in work injuries and a saving in workmen's compensation costs. For the first time in the city's history, a State safety award was received in 1960 and again in 1961.

During 1960 the lost-time accident frequency rate was 28.63 accidents per million man-hours worked; in 1961, the rate was 21.05, representing a reduction of 26.47 percent. The severity of disabling injuries was also reduced from a rate of 379.2 days lost per million man-hours worked in 1960 to 231.4 in 1961, a 28.68 percent reduction. The detailed records kept by the health service enables the city to determine where the largest number of injuries and disasters have occurred.

When the health service was planned, the budget estimate for initial outlay (medical and office equipment, instruments, and an automobile) was \$5,900. Annual expenditures for salaries, medical and office supplies, and maintenance equipment were budgeted at \$41,780. Since the city was already spending over \$22,000 annually for the limited services provided, the additional expenditure was estimated at \$19,404. In return for this expenditure a saving of \$285,000 per year in State compensation premium was expected. In 1961 disbursements by the Industrial Relations Department for both safety and health programs amounted to \$72,288.54.

Figures on workmen's compensation payments for the years 1956-61 (table 14) show that actual savings are increasing annually and are now more than anticipated when the health program was planned. Had the premium remained at the 1956 rate, the cost in 1961 would have been \$743,028 instead of \$420,152. The premium rate of \$2.03 per \$100 of payroll in 1961 was a decrease of 16.8 percent over the rate for 1960, representing an actual saving of \$85,000. In addition, in 1961, actuarial services performed by the Workmen's Compensation Service Company returned \$67,886, which combined with the reduced premium represents a net saving to the city of \$155,886.

**TABLE 14.—*Workmen's compensation premium rates experience, city of Columbus, 1956-61***

Year	Payroll		Premium rate <sup>1</sup>		Workmen's compensation premium		
	Amount	Percent increase or decrease	Amount	Percent increase or decrease	Actual cost	Cost had rate remained at 1956 level	Saving by reduction in rate
1956....	\$14, 335, 273	+15. 6	\$3. 59	-13. 0	\$512, 636	.....	.....
1957....	16, 175, 000	+12. 8	3. 31	-7. 7	535, 393	\$580, 683	\$45, 290
1958....	18, 028, 753	+11. 4	2. 87	-13. 2	517, 425	647, 232	129, 807
1959....	19, 061, 421	+5. 7	2. 81	-2. 0	535, 626	684, 305	148, 679
1960....	19, 990, 737	+4. 8	2. 44	-13. 1	487, 774	717, 668	229, 894
1961....	20, 697, 163	+3. 5	2. 03	-16. 8	420, 152	743, 028	332, 876

<sup>1</sup> Per \$100 of payroll.

## ALLEGHENY COUNTY, PENNSYLVANIA

### Health Services for Employees

An employee health service for approximately 5,000 employees of Allegheny County began operating in 1959 under the jurisdiction of the health department for Pittsburgh and Allegheny County. Edwin M. Brown, M.D., is director of the service. Although the service is for county employees, city employees may request certain services. The dispensary, which is located in the City-County Building, also serves as a demonstration project and as a source of research material.

#### Scope of Services

1. To conduct an employee health service for county employees, including:
  - (a) Preemployment and return-to-work physical examinations.
  - (b) Periodic examinations for Health Department personnel only, as a demonstration project.
  - (c) Emergency health care to all county employees.
  - (d) Health counseling.
2. To provide emergency health care for city of Pittsburgh employees on request and to any occupant of county facilities (e.g., jurors, visitors).
3. To cooperate with local health and welfare agencies, especially in adult health programs.
4. To cooperate with educational institutions in providing instructions and supervised observation in occupational health services.

#### Staff

Both the director of the Occupational Health program and the occupational health nurse consultant devote considerable time to the employee health program. In addition, the staff includes another full-time nurse, a full-time secretary-technician, and three part-time physicians. Clinic hours

for the part-time physicians are so arranged as to provide the unit with physician's services at all times during work hours. The unit operates on a 5-day-a-week basis, but facilities and staff are made available at all times if needed.

### **Current Program**

Services include preplacement examinations for all new county employees except policemen. Police examinations are provided at Kane Hospital under a contract with the University of Pittsburgh. Each temporary employee, except those employed for less than a week at the county fair, receives an examination.

Return to work checkups are done after more than 3 days sick leave or after a shorter period upon request of the supervisor.

Periodic examinations are limited to health department employees and are on a voluntary basis. Every employee receives a complete examination. Recommended periods for the examination are every 2 years for employees under 40, every year for employees 40 to 65 years old, and every 6 months for those 65 and over. Retirement is not mandatory at any age, and a number of persons past 65 still continue to work. Upon written request of the employee, the results of the examination are sent to his personal physician.

As a service to employees, examinations for driver's licenses are provided upon request. State law makes such examinations mandatory for all drivers.

Emergency services, for both occupational and nonoccupational injury or illness, are available to all county employees, visitors, and city employees upon request. For nonoccupational illness, the program will provide at least one treatment and make observations in connection with referrals. Advisory service to persons in need of definitive care is considered an important phase of the program.

County employees in scattered areas who require emergency care are taken to the nearest medical facility. The county is self-insured for workmen's compensation but uses a commercial company for investigation. The health unit works directly with the proper authorities on such cases and has a satisfactory referral service.

Preventive services include immunizations for the county employees. Immunization against poison ivy and proper instruction regarding care has greatly reduced both the number and severity of such cases among county workers exposed to it, particularly in parks and other recreation areas. The city employees are included in the annual program of influenza immunizations.

Health counseling is provided upon request on such subjects as obesity, nutrition, and proper treatment of injuries. Information and necessary immunizations are also provided to employees anticipating foreign travel.

Records are carefully maintained, and entries are made only by a physician, a nurse, or a technician. They are considered strictly confidential.

## Utilization of Service

Services given by the health service from September 1961 through August 1962 are shown in table 15.

**TABLE 15.—Visits and services, Allegheny County Employee Health Service, September 1961–August 1962**

<i>Item</i>	<i>Number</i>
Visits.....	2, 669
Services:	
Examinations, total.....	1, 255
Preplacement.....	856
Return-to-work.....	360
Periodic.....	6
Other.....	33
Immunizations (individual doses), total.....	3, 391
Influenza (approximate).....	3, 000
Tetanus toxoid.....	89
Poison ivy extract.....	248
Other (smallpox, triple typhoid, rabies, poliomyelitis).....	54
For occupational conditions, total (initial treatment—142, retreatment—114).....	256
For nonoccupational conditions, total.....	905
Pulmonary.....	37
Cardiovascular.....	64
Hematological.....	33
Eye.....	50
Ears, nose, and throat.....	264
Gastrointestinal.....	40
Gynecological.....	16
Dermatological.....	72
Musculoskeletal.....	54
Endocrine and metabolic.....	30
Emotional.....	28
Injury.....	121
Other.....	96
Laboratory, other than routine procedures from examinations.....	70
Referrals to physicians, clinics, and community agencies, in addition to those made at time of examinations.....	144

## Operating Costs

The service is estimated to cost about \$28,500 a year, exclusive of rent and utilities, as follows:

<i>Item</i>	<i>Amount</i>
Total.....	\$28, 500
Salaries.....	27, 000
Part-time physicians, total.....	13, 000
Staff nurses, full time.....	4, 300
Nurse consultant, more than half-time.....	4, 000
Division Chief, one-fourth time.....	3, 500
Secretary-replacement, half-time.....	1, 900
Technician, one-tenth time.....	300
Laboratory services, Shadyside Hospital (for blood chemistries and Papanicolaou smears).....	500
Drugs and surgical supplies (not including influenza vaccine for annual clinics).....	1, 000

These figures do not include the cost of X-rays, which are supplied all residents of Allegheny County by the health department's chest X-ray unit.

## PHILADELPHIA, PENNSYLVANIA

### Health Services for Employees

More than 29,000 employees of the city of Philadelphia are eligible for health services provided through three facilities—a municipal medical dispensary, the X-ray unit of the Health Department, and a compensation clinic. Mr. William Brody is director of administration.

A new municipal medical dispensary was opened in the City Hall Annex, December 1, 1954. Saverio F. Brunetti, M.D., chief surgeon, reports directly to the Office of the Managing Director of the city. The dispensary is open from 8:30 a.m. to 5:30 p.m., Monday through Friday, and provides services to all city employees, including policemen, firemen, and park guards.

### Staff

The dispensary is served by 19 persons as follows: a chief surgeon, a full-time assistant physician, another full-time physician, a part-time physician, nine "street surgeons," three nurses including the receptionist who is a registered nurse, one secretary and two clerks.

### Services Provided

Every prospective employee receives a preplacement medical examination prior to entering on duty. Positions have been classified according to necessary physical requirements. Policemen, firemen, prison guards, park guards, and correction officers must meet very rigid preplacement examinations and are required to report for periodic physical examinations at 2-year inter-

vals. Personnel must report according to age grouping, without regard to rank. All services connected with these examinations are provided at the dispensary, except for X-rays, which are taken at the Health Department's X-ray facility.

Medical examinations are also provided after extended illness or injury, to determine physical status relative to performance ability, and in connection with promotions, disability, leave or retirement. Fingerprinting is part of the regular examination procedure as a precaution against a substitute reporting for the examination. Records of all examinations, acceptances and rejections, are carefully maintained as a source of reference.

First aid care is given for occupational and nonoccupational illness and injury, and immunizations and other preventive services as considered desirable. Such services have included poliomyelitis shots and mass influenza immunization program for employees in essential positions.

### **Utilization of Services**

During 1961, over 19,000 services were provided at the dispensary as follows: preplacement examinations—5,207; other employee examinations—11,486; treatments—2,885.

Disabilities found during the course of a periodic medical examination are usually corrected or controlled with the assistance of the person's private physician and subsequent observation at the dispensary. For example, in the course of 3,326 police examinations, 106 cases of hypertension were detected. A reexamination later showed that 104 cases were under control; 2 persons with malignant hypertension had to be separated from the service. Of 209 persons found to be overweight, 204 responded to a weight-reduction program; 5 had to be taken off duty until they cooperated. Among 14 diabetics, 13 cases were brought under control.

In connection with police, fire, and park services, the chief surgeon is responsible for the activities of nine so-called "street physicians," who provide 24-hour services. Through an intercom system he is aware of all fires, accidents, and other emergencies almost as soon as they occur. He directs physicians to the scene and, if necessary, goes himself.

In the fall of 1962 approximately 17,000 employees received influenza shots.

### **Operating Costs**

The average annual cost of services is as follows:

Salaries, including those of the street physicians-----	\$130, 000
Medical supplies-----	1, 100
Equipment -----	500
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	131, 600

## **Workmen's Compensation Clinic**

The city of Philadelphia handles its own compensation cases. A compensation clinic for major injuries or illnesses has been established at Philadelphia General Hospital. This is an unusual arrangement and facilitates the utilization of both specialists and hospital services. Dr. Alfred Bochman, a specialist in internal medicine, is in charge and gives full time to the program. The staff also includes a full-time nurse, secretary, and three clerks. Part-time service is provided by three other internists, four surgeons, four orthopedists, a neurologist, and a dermatologist.

Clinics are held everyday from 9 to 4 o'clock. All compensation cases for the city are cared for at, or admitted to the hospital through, the clinic. Approximately 900 patients are seen each month, making a total of 1,600 to 1,700 visits. The chief of the clinic coordinates all services for compensation cases. He reports that more than 50 percent of all injuries involve the hands.

Policemen and firemen have their own 30-bed hospital ward; other hospitalized compensation patients are cared for in the regular hospital wards.

### **Operating Costs**

The annual cost of the compensation clinic is as follows:

Salaries, including those of part-time physicians.....	\$67, 812
Contractual services, orthopedic surgeon's services.....	32, 500
Supplies .....	1, 000
	<hr/>
	101, 312

## **CORPUS CHRISTI, TEXAS**

### **Health Services for Employees**

A health program for 1,650 employees of the city of Corpus Christi, Tex., is administered by the Corpus Christi-Nueces County Department of Public Health and Welfare. Roger S. Knapp, M.D., is city physician.

Concerned about the high cost of medical care for injured employees, city officials, in January 1960, appointed a committee to look into the possibility of setting up a dispensary much like that used in large industrial concerns. Meetings were held with physicians and personnel directors from nearby industries, and the plans of these companies were studied and adapted to fit the needs of the city of Corpus Christi.

### **Staff and Facilities**

In addition to the city physician, one nurse and one clerk are associated with the program. The dispensary is furnished with a small X-ray, treatment machines (such as ultrasound, muscle stimulators), eye microscopes, and other equipment and supplies for treatment of simple injuries.

## **Current Program**

All injured employees must go through the dispensary, but an employee is then allowed to go to his private physician if he so desires.

Approximately 2,200 preplacement and periodic physical examinations are performed annually by the city physician or his designated alternate. All new employees are examined before entering on duty. The principal causes of rejection are high blood pressure, heart disease, hernia and potential hernia. The city made a special survey to find jobs in which the physically handicapped could be used and has employed a considerable number of them.

Applicants who have disqualifying defects are referred to other agencies, such as Texas State Vocational Rehabilitation Agency, the Memorial Hospital Clinic, and the Veterans Administration, or to private physicians. Some return and are employed after defects have been corrected.

Periodic physical examinations are required annually for all employees 50 years of age and over, at 2-year intervals for those 40 to 50 years of age, and every 3 years for employees under 40. These are screening procedures rather than intensive or extensive diagnostic examinations. However, they include routine chest X-rays, urine examination, and serological tests.

Return-to-work checkups are required after absence due to illness or injury in excess of 5 days. They consist of checking the report of the family physician and interpreting it to his department head so that he will understand what the employee can do. Recommendations regarding return to work are evaluated by the city physician in terms of known duties of the employee. Even though his family physician has released him, an employee is not permitted to return to duty if it is felt that such duty would be harmful.

Immunizations include influenza vaccines and tetanus toxoid.

Home visits are made by the dispensary nurse at the request of the department head. She is also able to advise sick employees on necessary care or to request the city physician to make a call when needed. In case of occupational injury, the city physician makes emergency calls to assure that the individual gets prompt treatment. If necessary, he calls a specialist or turns the employee over to the family physician for hospitalization. He does not provide inpatient care to anyone. Specialists are carefully selected, but the employee is free to make his own selection if he so desires.

## **Utilization of Services**

During 1960, when the program began, 2,000 physical examinations were given, as follows: entrance—471, return-to-work—177, annual—1,282, retirement—39, special—31.

The 1,110 dispensary visits made between May 1960 and May 1961 included 1,089 for occupational injury (304 initial and 785 revisits) and 21 for nonoccupational reasons.

Physicians and nurses made 96 house calls during the year.

Influenza and tetanus toxoid shots were offered to all employees.



## **Operating Costs**

The total cost of equipment for the dispensary was \$2,795, which included the cost of a used X-ray. Many small items were donated.

The total cost of operation for the first year was \$21,422. This included all of the city physician's salary, the salary of a nurse and a senior clerk typist.

## **Evaluation of Program**

The program's influence in improving the general physical health of the city's employees is revealed in the reduced number of days of sick leave. It is a positive factor in raising employee morale and reducing management-labor tension. The warm, friendly, efficient physician and nursing services are an important element in the success and acceptance of the program. By directing injured persons to the most highly skilled specialists and thus insuring expert care, the city saves money by faster return from sick leave. The estimated saving in insurance costs through the dispensary is \$120,000 per year.

In the opinion of the director of public health and welfare, Corpus Christi-Nueces County, "for numerous reasons from economy to respect and regard for employees, all cities of sufficient size should have industrial health programs. When under health department control, the city health program can be integrated in the overall health program in all its facets (private, volunteer, philanthropic, insurance, other governmental, etc.)."

## **Related Benefits**

Workmen's compensation is provided all employees through a private carrier. Employees are also eligible on a voluntary basis for hospital and medical care insurance.

## Appendix A

### OCCUPATIONAL HEALTH PROGRAMS FOR PUBLIC EMPLOYEES Survey of 100 largest cities in the United States; 1962

State and city	Number employees	Health services for	Preplacement examination	
			For	Paid by
<b>Alabama:</b>				
Birmingham.....	• 260	All.....	Some.....	Employee
Mobile.....	• 50-60	All.....	All.....	Employee
Arizona: Phoenix.....	3,370	All.....	All.....	Govt.
<b>California:</b>				
Berkeley.....	1,300	All.....	All.....	Govt.
Long Beach.....	4,100	None.....	All.....	Govt.
Los Angeles.....	† 1,000	All.....	All.....	Govt.
Oakland.....	5,000	Some.....	All.....	Govt.
Sacramento.....	• 3,600	Some.....	Some.....	Govt.
San Diego.....	4,600	All.....	All.....	Govt.
San Francisco.....	‡ 18,300	All.....	All.....	Govt.
Colorado: Denver.....	4,500	All.....	All.....	Govt.
<b>Connecticut:</b>				
Bridgeport.....	• 300	All.....	All.....	Govt.
Hartford.....	† 3,500	All.....	All.....	Govt.
New Haven.....	3,000	None.....	All.....	Employee
Delaware: Wilmington.....	1,450	Some.....	Some.....	Govt.
District of Columbia.....	26,000	Some.....	Some.....	Govt.
<b>Florida:</b>				
Jacksonville.....	4,500	Some.....	Some.....	Govt.
Miami.....	9,000	All.....	All.....	Govt.
Tampa.....	• 180	All.....	All.....	Govt.
<b>Georgia:</b>				
Atlanta.....	• 1,300	All.....	All.....	Govt.
Savannah.....	• 105	Some.....	Some.....	Employee
Hawaii: Honolulu.....	‡ 5,460	Some.....	All.....	Govt.
<b>Illinois:</b>				
Chicago.....	NA	All.....	All.....	Govt.
Peoria.....	† 44	None.....	All.....	Employee
<b>Indiana:</b>				
Evansville.....	• 1,735	All.....	Some.....	Govt.
Fort Wayne.....	NA	NA.....	NA.....	NA
Gary.....	† 40	All.....	None.....	
Indianapolis.....	• 319	All.....	All.....	Govt.
South Bend.....	NA	NA.....	NA.....	NA
Iowa: Des Moines.....	1,200-1,500	All.....	Some.....	Govt.
<b>Kansas:</b>				
Kansas City.....	• 47	All.....	None.....	
Wichita.....	1,800	All.....	All.....	Govt.

See footnotes at end of table.

OCCUPATIONAL HEALTH PROGRAMS FOR PUBLIC EMPLOYEES—Continued

State and city	Number employees	Health services for	Preplacement examination	
			For	Paid by
<b>Kentucky: Louisville.....</b>	NA	NA.....	NA.....	NA
<b>Louisiana:</b>				
Baton Rouge.....	NA	NA.....	NA.....	NA
New Orleans.....	6, 200	None....	All.....	Govt.
Shreveport.....	• 71	None....	None....	
<b>Maryland: Baltimore.....</b>	25, 000	None....	Some....	Govt.
<b>Massachusetts:</b>				
Boston.....	• 11, 140	Some....	All.....	Govt.
Cambridge.....	NA	NA.....	NA.....	NA
Fall River.....	NA	NA.....	NA.....	NA
New Bedford.....	• 132	None....	All.....	Govt.
Springfield.....	4, 500	Some....	Some....	Govt.
Worcester.....	• 72	None....	All.....	Govt.
<b>Michigan:</b>				
Detroit.....	28, 000	All.....	All.....	Govt.
Flint.....	3, 000	All.....	All.....	Govt.
Grand Rapids.....	1, 500	All.....	All.....	Govt.
<b>Minnesota:</b>				
Minneapolis.....	9, 000	Some....	All.....	Govt.-Emp. <sup>a</sup>
St. Paul.....	3, 310	All.....	All.....	Govt.
<b>Missouri:</b>				
Kansas City.....	3, 500	None....	Some....	Govt.-Emp.
St. Louis.....	• 500	Some....	Some....	Govt.
<b>Nebraska: Omaha.....</b>	1, 800	Some....	Some....	Govt.
<b>New Jersey:</b>				
Camden.....	NA	NA.....	NA.....	NA
Elizabeth.....	• 53	None....	Some....	Employee
Jersey City.....	5, 000	(?).....	All.....	Govt.
Newark.....	NA	NA.....	NA.....	NA
Paterson.....	2, 628	None....	None....	
Trenton.....	NA	NA.....	NA.....	NA
<b>New York:</b>				
Albany.....	• 2, 500-3, 000	None....	None....	
Buffalo.....	• 7, 000	None....	All.....	Govt.
New York.....	203, 000	Some....	All.....	Govt.
Rochester.....	• 3, 500	Some....	None....	
Syracuse.....	3, 000	Some....	All.....	Govt.
Yonkers.....	2, 650	Some....	All.....	Govt.-Emp.
<b>North Carolina: Charlotte..</b>	2, 000	All.....	All.....	Govt.
<b>Ohio:</b>				
Akron.....	2, 000	None....	All.....	Govt.
Canton.....	1, 100	None....	None....	
Cincinnati.....	6, 800	Some....	All.....	Govt.
Cleveland.....	10, 500	All.....	Some....	Govt.
Columbus.....	4, 800	All.....	Some....	Govt.
Dayton.....	• 110	All.....	All.....	Govt.
Toledo.....	2, 900	None....	All.....	Govt.
Youngstown.....	1, 400	None....	Some....	Employee

See footnotes at end of table.

**OCCUPATIONAL HEALTH PROGRAMS FOR PUBLIC EMPLOYEES—Continued**

State and city	Number employees	Health services for	Preplacement examination	
			For	Paid by
<b>Oklahoma:</b>				
Oklahoma City.....	NA	NA.....	NA.....	NA
Tulsa.....	NA	NA.....	NA.....	NA
Oregon: Portland.....	* 2, 400	None....	None....	
<b>Pennsylvania:</b>				
Allentown.....	825	None....	Some....	Govt.
Erie.....	NA	NA.....	NA.....	NA
Philadelphia.....	29, 380	All.....	Some f...	Govt.
Pittsburgh.....	* 5, 600-6, 000	All.....	All.....	Govt.
Reading.....	850	All.....	Some....	Govt.
Scranton.....	NA	NA.....	NA.....	NA
Rhode Island: Providence..	3, 300	None....	Some....	Govt.
<b>Tennessee:</b>				
Chattanooga.....	3, 800	None....	Some....	Employee
Knoxville.....	<sup>b</sup> 42	None....	None....	
Memphis.....	NA	NA.....	NA.....	NA
Nashville.....	* 125	All.....	All.....	Employee
<b>Texas:</b>				
Austin.....	3, 200	None....	Some....	Govt.
Corpus Christi.....	1, 600	All.....	All.....	Govt.
Dallas.....	NA	NA.....	NA.....	NA
El Paso.....	* 90	None....	(?).....	
Fort Worth.....	3, 373	All.....	All.....	Govt.
Houston.....	NA	NA.....	NA.....	NA
San Antonio.....	<sup>b</sup> 225	All.....	All.....	Govt.
Utah: Salt Lake City.....	680	All.....	All.....	Govt.
<b>Virginia:</b>				
Norfolk.....	3, 643	None....	Some....	Govt.
Richmond.....	3, 600	All.....	All.....	Govt.
<b>Washington:</b>				
Seattle.....	8, 100	None....	All.....	Govt.
Spokane.....	<sup>b</sup> 50	None....	All.....	Govt.
Tacoma.....	* 80	All.....	Some....	Govt.
Wisconsin: Milwaukee.....	8, 991	All.....	All.....	Govt.

- (\*) Employees of county health department only.
- (<sup>b</sup>) Employees of city health department only.
- (\*) Employees of county jurisdiction.
- (<sup>d</sup>) Employees of city-county jurisdiction.
- (\*) Employees of department of humane affairs.
- (<sup>f</sup>) Excludes 1000 in board of education.
- (<sup>e</sup>) Excludes policemen.
- (<sup>A</sup>) Fire and police exams at government expense, others at employees' expense.
- (<sup>g</sup>) Classified employees.
- (<sup>t</sup>) Civil Service employees only.
- NA indicates no response.

Source: Employee Health Services Section, Division of Occupational Health, Public Health Service, U.S. Department of Health, Education, and Welfare. December 7, 1962.

## Appendix B

### QUALIFICATIONS FOR A MEDICAL DIRECTOR SERVING INDUSTRY

**Responsibilities.**—Under the supervision of a policy making member of the management group, the medical director is responsible for the Health and Medical program of the company and such other allied programs as may be assigned, such as hygiene, safety, insurance, retirement, etc. He makes such policy and procedural recommendations as warranted. He acts as a consultant and advisor on matters of employee health and welfare. If the medical director of a unit, he will carry out policies and directives as promulgated by the organization's medical director.

**Qualifications.**—The medical director:

1. Should be a graduate of an accredited medical school and licensed to practice in the State or province;
2. Should have at least one year's internship in an accredited hospital;
3. Should have training and experience in industrial medicine;
4. Should have a general knowledge of administration including industrial and personnel relations;
5. Should have knowledge of work placement requirements and procedures;
6. Should have knowledge of occupational hazards and their control;
7. Should have a knowledge of preventive medical methods and health maintenance;
8. Should have a special knowledge of diagnosis and treatment of occupational diseases and injuries, including followup rehabilitation, and his responsibilities under workmen's compensation legislation;
9. Should have a knowledge of an efficient medical record system and statistics.

**Specific duties:**

1. Responsible for planning, directing and coordinating medical and surgical services of his organization or unit;
2. Responsible for the selection of competent medical personnel;
3. Initiates policies, prepares directives and supervises all medical department personnel;
4. Directs the operation of the company examination programs;
5. Establishes scientific standards of physical capacities for work and administers placement in accordance with physical demands analysis;
6. Recommends plant medical facilities and equipment and advises on the budget for company medical activities;
7. Integrates the medical program with all other company activities;
8. Recommends measures for control of all environmental hazards;
9. Collaborates with the personnel department in the development and administration of their activities and provides medical advice and assistance to other departments;
10. Develops and maintains a program of health maintenance and education for all employees;
11. Maintains and utilizes medically acceptable records and statistics and observes their confidential nature;
12. Maintains membership and participates in the activities of local, State, and national medical society;
13. Cooperates with all health agencies;
14. Cooperates in an ethical fashion with employee's personal physician and allied professional organizations;
15. Serves as a health counselor for all employees.

Source: National Conference Board, *Company Medical and Health Programs (Studies in Personnel Policy No. 171)*. New York, The Board 1959. 60 pp.

## Appendix C

### FUNCTIONS AND STANDARDS FOR AN OCCUPATIONAL HEALTH NURSE IN A ONE-NURSE SERVICE

#### *A. Functions relating to the administration and operation of the employee health service department*

1. Participates with management and the medical director in the formulation and implementation of administrative policies of the health service department.
2. Maintains a system of records and reports.
3. Selects, trains and supervises auxiliary nursing personnel.
4. Plans with others for the selections, training, and supervision of a team of first aid workers to assist in plant emergencies.
5. Maintains the health service department, including the selection of supplies, equipment, and appropriate books and magazines for reference.
6. Participates in the prevention and control of injuries and occupational disease hazards.
7. Assists in maintaining acceptable plant sanitation standards.
8. Advises on food handling facilities and services.
9. Participates in planning for emergency care in catastrophic emergencies and national defense.
10. Evaluates periodically the total health service.

#### *B. Functions relating to nursing care—health maintenance*

1. Occupational injuries and illnesses:
  - (a) Gives emergency care.
  - (b) Administers additional treatment and care as prescribed.
2. Nonoccupational injuries and illnesses:
  - (a) Gives emergency care.
  - (b) Advises and makes referrals as indicated.
3. Health examinations:
  - (a) Participates with the physician in preplacement, periodic, special, return-to-work, and terminal examinations.
  - (b) Maintains a followup system for correction of defects, health counseling, and physical examination.
4. Observation and recording.
5. Health counseling and information.
6. Supervision of illness absence.

#### *C. Functions relating to safety education*

1. Participates actively in the safety education program.

#### *D. Functions relating to health and welfare benefits*

1. May participate—with employer's approval—in the interpretation of workmen's compensation, group insurance, and other health and welfare plans.

#### *E. Functions, relating to community health and welfare agencies*

1. Establishes working relationship with community agencies.
2. Encourages company participation in community health programs, surveys and research projects.
3. Participates, upon request, with schools of nursing, health agencies, and hospitals in providing observation and experience for students, faculty, and staff.

## QUALIFICATIONS FOR AN OCCUPATIONAL HEALTH NURSE IN A ONE-NURSE SERVICE

### *A. Professional Preparation*

1. Graduation from a school of professional nursing with a State accreditation at the time of graduation.
2. Currently licensed to practice as a registered professional nurse in the State of employment.
3. Desirable additional preparation for occupational health nursing as evidenced by:
  - (a) University courses in occupational health nursing, public health nursing, and related subjects.
  - (b) Attendance at institutes, seminars, and other educational programs pertaining to occupational health and safety.
4. Experience desirable.
  - (a) Employment in varied fields of nursing, such as:
    - (1) community health agencies
    - (2) industrial clinics
    - (3) accredited hospitals, especially outpatient emergency departments.
  - (b) One year or more in an employee health service working under nursing supervision.
5. Maintains active membership in professional nursing organizations and understands and participates in the major programs.

### *B. Personal Competence Qualifications*

1. Sincere interest for and skill in working with people.
2. Ability in interpersonal relationships to recognize and understand the common needs of all individuals.
3. Skill in communication—verbal and written.
4. Receptive attitude toward suggestions and ideas from others and the ability to relate them to the health service program.
5. Willingness and ability to evaluate own performance and knowledge of specific methods used in job rating.

### *C. Essential Knowledge and Skills*

1. Thorough knowledge of approved occupational health nursing principles, practices, procedures; judgment and skill in giving good nursing care.
2. Thorough knowledge of approved first aid procedures and ability to teach these procedures to others.
3. Thorough understanding and skill in the use of good interviewing and health counseling techniques.
4. Working knowledge and understanding of the purposes and provisions of workmen's compensation laws, group insurance, health and welfare plans related to occupational health.
5. Knowledge and understanding of all phases of rehabilitation.
6. General knowledge of the philosophy and principles of business organization and administration and the place of an employee health service in the organizational pattern.
7. General knowledge of the objectives of an effective occupational health program.
8. Working knowledge of the legal aspects of medical and nursing practice, particularly as it relates to an employee health service.
9. General knowledge of the principles of suitable location, adequate equipment and physical layout, and reference material for an employee health service department.

10. Thorough knowledge and understanding of the need for, and value of accurate, concise, complete, and legible records and reports, and the confidential nature of these records and reports.

11. Knowledge of materials and industrial operations as related to plant processes, occupational injuries and illnesses, and measures for prevention and control.

12. Knowledge and understanding of preventive health care.

13. Knowledge of State and local codes related to employee health, safety, and welfare in industrial and commercial establishments.

14. Knowledge of State and local codes, ordinances, and recommendations pertaining to food facilities and services.

15. Knowledge of the official health department regulations regarding communicable disease control.

16. Knowledge of community health and welfare resources, referral policies, and procedures.

17. Knowledge of available occupational health nursing consultant services.

18. General knowledge of the purpose and use of job analyses in relation to proper placement of employees.

19. General knowledge of epidemiological methods and procedures for evaluation of the service.

SOURCE: American Nurses Association, Occupational Health Nurses Section. *Functions, Standards and Qualifications for Occupational Health Nurses*. New York, The Association.



## Appendix D

### DIVISION OF ADMINISTRATIVE RESPONSIBILITY

#### 1. *Management* recognizes:

(a) That the maintenance of a high level of employee health is an integral part of sound personnel practice and good human relations.

(b) The economic value of a well-conducted employee health program.

#### *Physician* knows:

(a) The fundamental principles and practices of occupational health and their value in business organizations and in the community.

(b) The basic principles of business administration including industrial and personnel relations; and the proper place of an employee health program in the community organization.

#### *Nurse* knows:

(a) Approved occupational health nursing principles, practices, and procedures.

(b) Principles of business organization and administration and the place of an employee health service in the organizational pattern.

#### 2. *Objectives, Functions, Administrative Policies*

*Management*, in collaboration with the physician, nurse, legal counsel and possibly outside consultants:

(a) Formulates a written statement of objectives of their Employee Health Service program.

(b) Defines: (1) the list of functions which the company is willing to undertake; (2) the place of the service in the total company organization; (3) company administrative policies under which the program will function.

#### *Physician*, in collaboration with management, nurse, legal counsel and others:

(a) Recommends objectives for the program.

(b) Recommends: (1) the functions which would be consistent with company objectives, the needs of the employees, existing legislation standards established by the medical profession and the availability of medical services in the community; (2) the content and implementation of company administrative policies under which the service will function.

#### *Nurse*, in collaboration with management, physician, legal counsel and others:

(a) Participates in formulation of objectives for the program.

(b) Recommends: (1) nursing functions which would be consistent with company objectives and with pertinent standards established by the nursing profession, (2) the place of the service in the total company organization, (3) the content of company administrative policies under which the service will function, and interprets nursing implications. Also interprets the difference between *independent* nursing functions which she is qualified to initiate and *dependent* nursing functions—such as care and treatment—for which she *must* have medical direction.

#### 3. *Staff, Facilities, Budget*

*Management*, in collaboration with the physician, nurse and possibly outside consultant:

(a) Determines staff needs.

(b) Establishes desirable qualifications and job specifications for service personnel. This includes first aid workers to meet emergencies when neither the physician nor the nurse is present.

(c) Employs new professional staff; participates in their company orientation.

(d) Provides space, layout, equipment and supplies.

(e) Determines and provides adequate budget.

*Physician*, in collaboration with management, nurse and possibly outside consultant:

- (a) Recommends staff needs, both professional and clerical.
- (b) Defines and recommends professional qualifications and job responsibilities for health service personnel. Also defines responsibilities for auxiliary personnel, including first aid workers, and prescribes their activities.
- (c) Selects new professional staff; determines content of orientation program; approves content of initial and refresher preparation of first aid workers with particular reference to the hazards of the industry.
- (d) Selects space, layout, equipment and supplies.
- (e) Determines budget needs, including salaries, equipment, supplies; and cost of professional liability and malpractice insurance.

*Nurse*, in collaboration with management, physician and possibly outside consultant.

- (a) Recommends nursing and clerical staff needs.
- (b) Recommends nursing responsibilities and professional qualifications for nursing position. Also recommends scope of activities for auxiliary personnel, including first aid workers.
- (c) Interviews nursing and auxiliary personnel applicants; participates in the final selection and the orientation program; provides or supervises initial and refresher preparation of first aid workers.
- (d) Recommends space, layout, equipment and supplies; supervises the housekeeping of the health service and the maintenance of supplies and equipment.
- (e) Recommends budget needs as related to nursing staff and service.

#### 4. *Medical Direction, Evaluation and Interpretation*

*Management:*

- (a) Establishes administrative channels between the physician and a company official at the policymaking level.
- (b) Provides plan for periodic evaluation of the program.
- (c) Provides mechanics for keeping health service informed about: (1) employees absent because of illness or injury; (2) new industrial processes, methods and materials; (3) changes in job requirements; (4) changes in contractual agreements with employees and in benefits provided for them; (5) changes in other pertinent company matters, particularly changes in company policy.
- (d) Provides plan for: (1) orienting new employees to the employee health service program and for keeping all employees informed about company administrative policies regarding the program; (2) orienting new physician or nurse to the company organization.

*Physician:*

- (a) Gives medical direction to the health program and to medical aspects of related company programs. Represents the service on the management level and in the community.
- (b) Participates in evaluation plan and process. Frequently takes initiative for changes.
- (c) Determines use of pertinent information about: (1) employees absent because of illness or injury; (2) new industrial processes, methods and materials; (3) changes in job requirements; (4) changes in contractual agreements with employees and in benefits provided for them; (5) changes in other pertinent company matters, particularly changes in company policy.
- (d) Collaborates with nurse in establishing plans for: (1) orienting new employees to the health service program and for interpreting company administrative policies concerning the program to all employees; (2) orienting new physician or nurse to the company organization and the health service program. Supervises, and when indicated, participates in orientation program.

*Nurse:*

(a) Gives nursing direction to the health service program; supervises trained first aid worker staff; sees that all shifts are covered with trained first aid workers as an adjunct to or temporary substitute for nurse.

In the absence of the medical director or when delegated by him, represents the health service on the management level and in the community.

(b) Cooperates and participates in the evaluation plan and process. Makes suggestions and recommendations for changes.

(c) Assists in determining use of information about: (1) employees absent because of illness or injury; (2) new industrial processes, methods and material; (3) changes in job requirements; (4) changes in contractual agreements with employees and in benefits provided for them; (5) changes in other pertinent company matters, particularly changes in company policy.

(d) Collaborates with physician in establishing plans for orienting new employees; for interpreting company administrative policies, concerning the health service program; for orienting new physician or nurse to the company organization and the program. Participates in orientation programs for new employees and for new physician or nurse.

**5. Employee Health Service Manual**

*Management:* Recognizes need for Employee Health Service manual. Collaborates in deciding contents. Provides necessary company information and assistance.

*Physician:* Interprets need to management. Collaborates with management and nurse on contents; participates in preparation of professional materials.

*Nurse:* Assists in interpreting need to management. Collaborates with management and physician on contents. Participates in preparation of professional materials. May be responsible for putting manual together and keeping it up to date.

**6. Medical Record and Report System**

*Management:*

(a) Recognizes (1) the need for a medical record and report system; (2) the confidentiality of the records of individual employees.

(b) As recommended by the physician and nurse: (1) approves plans for use and maintenance of the medical records and reports; (2) acts on recommendations for evaluation and change; (3) defines and supports written administrative policies which protect confidentiality of health records of individual employees.

*Nurse:*

(a) Understands and assists physician in interpreting to management: (1) need for an adequate medical record and report system; (2) confidentiality of records of individual employees.

(b) In collaboration with the physician: (1) decides on type and contents of records and reports and on procedures for their use and maintenance; (2) defines plan for periodic review and evaluation of the records and reports and how they are used; (3) protects confidentiality of health records of individual employees.

SOURCE: Metropolitan Life Insurance Company. *Correlated Activities in an Employee Health Program*. New York. The Company, 1962. 24 pp.











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