SPECIAL HEALTH PROGRAMS:
STUDENT, HOSPITAL, LABORATORY

Occupational Medical Support of a Research Hospital

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INTRODUCTION

The Occupational Medical Service Unit at the National Institutes of Health (NIH) in Bethesda, Maryland has been in existence for approximately 30 years. The concept of health services for employees has a long background and tradition. The program that I would like to outline at this time in support of a research hospital is that which is specifically provided to employees of the NIH Clinical Center, beginning with its opening in 1953. Formerly named the Employee Health Service, in July of 1976 the unit name was formally designated as the Occupational Medical Service.

The Occupational Medical Service comprises a large separate unit located within the Clinical Center structure. Also, four satellite health units are located on the campus and at outlying facilities occupied by NIH personnel. In addition to occupational medical support to the hospital, the program includes support to the administrative and laboratory missions of NIH, made up of some 12,000 employees. The Occupational Medical Service employs 23 persons including 5 full-time physicians, 11 nurses, 1 laboratory technician, and 2 occupational medical technicians.

The Clinical Center is a large, single structure encompassing 516 active clinical beds with laboratory space comprising approximately twice the space occupied by beds. About 4,000 employees work daily in 1,100 laboratories and in the hospital facility within this single structure. These employees are the usual hospital support personnel as well as researchers and laboratory technicians. Occupational medical support within this environment necessarily includes the laboratories as there is very often overlap between patient care and laboratory research--essentially

the unique feature of the NIH setting. No attempt will be made here to present the support of specialized laboratories outside the area of clinical research and clinical care. I will try to show those parts of the program directed towards specific laboratory support as opposed to patient care support so that occupational medical personnel who have one or the other of these missions can apply specific principles and techniques.

An occupational medical service cannot exist as a separate entity in support of an employee population. Administratively the service must be closely tied to the day-to-day decision-making in the hospital hierarchy. In addition, its administration must, through formal committees and informal communication channels, remain in constant contact with all hospital departments. In a large hospital, such as this, responsibilities for environmental monitoring and measurements usually exist as separate organizational entities. In our case, environmental engineering, biohazards, and radiological safety personnel are organized in an environmental health and safety program under the Directorate of Research Services. Frequent discussions and meetings with Environmental Services personnel are required in order to monitor on-going programs and be alert for new requirements. Environmental Services personnel participate with Occupational Medical personnel in the formal meetings of the Hospital Infections Committee and the Hospital Multi-disciplinary Safety Committee.

The following program elements comprise the Occupational Medical Support Program:

1. pre-employment examinations,
2. nonoccupational illness monitoring and limited care,
3. occupational injury and illness care and reporting,
4. surveillance examinations,
5. health education and counseling,
6. medical records and reporting.

Proper coordination of all elements is a necessity whether the program is supervised by a single occupational health nurse or a large professional staff.

PRE-EMPLOYMENT EXAMINATIONS

Pre-employment examinations are done on all prospective full-time employees. Special effort is made to see that all patient care

employees, including physicians, nurses, food service, and janitorial personnel, are examined and medically cleared prior to beginning work. All summer program employees are examined prior to employment or as soon as practical at the beginning of their summer jobs. Hospital volunteers are screened only for tuberculosis by skin test or chest film. Most physicians and some researchers are involved in both patient care and the laboratory; these employees are treated as patient care personnel for scheduling and type of physical examination.

The physical examination includes:

1. medical history, reviewed by the occupational health nurse and examining physician,
2. general physical examination with emphasis on evidence of infectious disease, physical incapacity and disability,
3. chest x-ray (PA and lateral),
4. electrocardiogram (for age 40 and over, or where specially indicated),
5. vision (including color perception) and hearing,
6. laboratory tests (i.e., complete urinalysis, hematocrit, and serology),
7. immunity status (especially update of tetanus-diphtheria, smallpox as a routine immunization for our hospital personnel has been discontinued, PPD for tuberculosis as indicated with skin testing with a lower strength PPD performed on BCG immunized individuals and where positivity of reaction cannot be assured).

In addition to the general examination above, laboratory and special patient care personnel receive further evaluation including the collection of a serum sample, which is frozen and stored for further evaluation should an infectious disease or suspected occupational illness develop later. Special considerations are given to immunity status depending on exposure of the individual--for example, Australia antigen and antibody status of phlebotomy teams in the clinical pathology laboratory and blood bank, and specific immunizations for those persons working with viruses (e.g., hepatitis, polio, and rubella).

For an efficient and meaningful pre-employment examination program, continual input is needed from all hospital departments: personnel officers who do initial interviewing and hiring, laboratory

directors responsible for the specific content of their research programs, and clinical directors responsible for patient care. The specific departments and user agencies are familiar with the physical requirements of each of their jobs as well as changes imposed by new missions and programs in patient care and research. The Occupational Medical Service must continually review and update these requirements.

NONOCCUPATIONAL ILLNESS MONITORING AND LIMITED CARE

Evaluation and monitoring of acute illnesses, particularly infectious disease among hospital employees and laboratory employees, is an important part of the Occupational Medical Support Program. Policies have been established with the Nursing Service and Food Service departments for evaluation of employees reporting an illness or returning to work after prolonged absence due to illness. The employee is evaluated, appropriate cultures are taken, and treatment or referral to his personal physician is made for resolution of the acute problem.

Occupational Medical Service's nurses and physicians prepare a report on each hospital employee with an infectious disease. The cases are summarized and a report is sent to the hospital nurse epidemiologist for review by the Infections Committee.

Minor illnesses and nonoccupational injuries also receive evaluation and care in the Occupational Medical Service. Such care allows the employee to continue working. The Service cooperates closely with private physicians in providing routine evaluations that may be requested by the treating physician (e.g., x-rays, urinalysis, urine culture, blood count, and limited blood chemistries).

An efficient program of illness monitoring requires established policies for referral to the Occupational Medical Service from the participating hospital departments, such as the Food Service, Nursing Service, Janitorial Service, and Laundry Service. Valuable information is developed on the health of the employee population. This is closely coordinated with the hospital epidemiologist and the Infections Committee for possible implications in patient care areas.

OCCUPATIONAL INJURY AND DISEASE

The Occupational Medical Service provides evaluation and treatment for injury and disease arising from employment in the hospital and laboratory. The occupational health nurse is responsible for completion of an accident survey form on each reported case. Physicians in the Service provide evaluation and full care within limits of their capability. Referral to specialty consultants is necessary in some cases, particularly in such areas as orthopedics, ophthalmology, allergy, and dermatology.

Common among patient-care employees are back injuries; in some instances, prolonged absence from work and assignment to less strenuous patient-care activities on return are required. These "limited duty" assignments require close coordination with supervisors and a firm policy to avoid confusion and motivational problems among employees. The second most common type of accident among patient-care and laboratory workers is the puncture wound caused by needles and broken glassware. These cases require careful evaluation because of potential infection. Laboratory workers are frequently subject to bites of all types, and close coordination with research veterinarians is necessary to provide proper care and follow-up of the worker as well as isolation of the infected animal. Another very common problem among these workers is that of allergy to animal dander. Occupational Medical Services provides allergy referral, evaluation, and desensitization in a weekly clinic. In many instances, laboratory workers have to initiate strict environmental controls to prevent exposure to animal dander.

In the area of occupational disease there are two other potentially serious problems: hepatitis (particularly type B) and tuberculosis. Tubercular patients occur only rarely in the research hospital; most cases are unsuspected until autopsy. Occupational Medical Services maintains the tuberculin skin test status of all patient-care employees. With the identification of a tuberculous patient all contacts are placed under surveillance in a cooperative effort with the Nursing Department and the nurse epidemiologist.

In a research hospital with leukemia services and open heart surgery that require multiple transfusions, the incidence of patients with a known hepatitis B antigen status is extremely high. In the

case of exposure to the hepatitis B Virus, the high titer immune globulin (H-BIG) is used when exposure to a contaminated needle or direct, mucous-membrane contact with a proven hepatitis B carrier has occurred. The high titer globulin is not used prophylactically for preventing nonparentally transmitted hepatitis B in our facility. Hospital policies require posting on the ward a list of all patients known to be Australian antigen positive.

Increasing use of cancer chemotherapy and other modalities of immunosuppression leads to additional problems. Immunosuppressed patients may develop terminal herpes zoster, which provides a high risk to patient care employees. In addition, there may be some confusion about the etiology of herpes simplex and the degree of risk to immunosuppressed patients from exposure to employees with such lesions. It is felt that employees with open lesions of herpes simplex should not be in contact with immunosuppressed patients or others with extensive dermatitis; however, there are no other restrictions.

Occupational disease and injury cases require continual cooperation with the hospital compensation carrier; at NIH it is the Federal Office of Workers' Compensation. In addition, close monitoring by Occupational Medical Service physicians and the specialty consultants utilized in such care is required. Epidemiological investigations are conducted in the majority of occupational disease cases and close coordination with the Infections Committee is required.

SURVEILLANCE EXAMINATIONS

Occupational Medical Service performs periodic evaluations on patient care and laboratory personnel who are exposed to recognized environmental hazards. Examination may consist of a complete physical with laboratory profile or a specific laboratory evaluation to measure the biological effects of a specific hazard. Clinical Pathology and Anatomical Pathology personnel are evaluated for infectious disease hazards, such as tuberculosis and hepatitis. A unique exposure recently identified in the Clinical Pathology Department was that of excessive noise in computer rooms.

Examinations for laboratory workers exposed to hazardous chemicals and viral carcinogens are extensive and include a general physical

on an annual or biannual basis. Animal handlers, particularly those working with primates, are periodically evaluated for tuberculosis, immunity status to tetanus and rabies, and, where necessary, for preexposure rabies immunization. Handlers who work with animals that are not being bred for research work receive preexposure rabies prophylaxis.

Fire Department and Security personnel are evaluated annually for physical fitness and their capability to perform strenuous activities related to their work. Special consideration must also be given to the Janitorial and Environmental Services personnel who enter all laboratories and clinical areas, including patient areas, since they can be exposed to multiple environmental hazards.

Surveillance exams require continual monitoring through the Hospital Safety Committee and Infections Committee. Chiefs of services, particularly the Laboratory and the Janitorial Services, must continually be queried for changes in their procedures and programs. In the research area, the laboratory chiefs are required to coordinate changes in programs with the Environmental Health and Safety personnel. Occupational Medical Service is in continual contact with these programs to provide current and meaningful surveillance evaluations.

HEALTH EDUCATION AND COUNSELING

Occupational Medical Service cooperates with the Safety Committee and section chiefs in providing health information to all new employees. Laboratory safety, while primarily the responsibility of laboratory chiefs, requires health input in high-risk areas, such as infectious disease and chemical carcinogens.

Occupational Medical Service also provides a mental health program with broad participation at all management levels within the hospital. Orientation lectures in emotional health are provided to nursing care personnel. This orientation is directed specifically at interpersonal relationships on the supervisory level as well as at unique situations in the research nursing care environment. Group sessions with nursing care personnel on the matter of dealing with a dying patient have been conducted.

Alcohol and other addictive drug usage in the hospital or research environment is of particular concern. Occupational Medical Service provides supervisory training for the recognition and handling of these problems. Also, counselors are available for evaluation and referral as well as for continuing individual and group treatment.

These programs are coordinated with the Safety Committee, supervisors of Hospital Services, and Environmental Safety personnel who have responsibility for safety orientation of all employees.

RECORDS AND REPORTING SYSTEMS

Employees' medical records are maintained by the Occupational Medical Service. These records note all examinations, reports of injury and illness, and visits to the Occupational Medical Service Unit, and are kept separate from those of hospital patients in research or treatment programs. Moreover, the system has been computerized so as to provide a monthly report of type and frequency of visit, identification of those accidents causing injury and illness, and scheduling for surveillance examinations and immunization follow-up. All employees are informed about procedures for access to their records under the Privacy Act and that any release of personal medical information to third parties (even where the third party may be the Personnel Department) is not made without the employee's authorization in writing.

And finally, it is interesting to compare our on-going program, which developed spontaneously over the years, with that recommended by the NIOSH Hospital Occupational Health Services study. Although the wording is slightly different, all aspects are covered.

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Public Health Service
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