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OSHA UPDATE: SAFETY AND HEALTH PROGRAMS PROPOSED RULE*

Anita L. Schill and Michael A. Montopoli

OSHA is developing a proposed rule for Safety and Health Programs (SHP). This rule will include specific safety and health program elements, as well as requirements for exposure assessment and occupational health surveillance. This presentation will focus on the development of the SHP standard and the basis for the proposed program elements. Issues and options considered in the development of this rule will be presented. Unresolved issues will be presented in an effort to encourage input from the public health community. The standards development process will be discussed so that interested persons will understand how and when they may contribute to the rule-making process.

* The views of the authors do not necessarily reflect those of the Occupational Safety and Health Administration.

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TUBERCULOSIS IN THE WORKPLACE: OSHA's EXPERIENCE WITH INSPECTIONS OF HEALTH CARE AND OTHER FACILITIES

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In response to the increased incidence of tuberculosis (TB) in the United States, the Occupational Safety and Health Administration (OSHA) first issued specific guidelines for the prevention of TB in the workplace in May of 1992. Since that time, OSHA has extended its guidance to health care facilities, long-term care facilities, correctional facilities, drug treatment centers, and homeless shelters. Workplace protection guidelines include: 1) suspected TB cases; 2) administrative controls, including early detection of TB cases, screening workers with tuberculin skin tests, and workplace training; 3) use of personal respiratory protection for workers in some limited settings.

OSHA compliance officers have gathered information from 300 inspections of health care facilities since May of 1992. We examined the types of citations given to workplaces for TB control issues, as well as the descriptive characteristics of facilities and TB control programs inspected.

Generally, health care facilities had the best TB protection programs of the five facility types, and homeless shelters had the poorest programs. The inspected facilities had the most problems with failing to place and record workers' tuberculin skin tests, failing to provide adequate TB case isolation, and failing to provide adequate respiratory protection programs including respirators for workers. Characteristics of the problematic facilities will also be described.

A PRIORITY LIST OF CHEMICALS DEVELOPED BY NIOSH USING NTP's CARCINOGENESIS BIOASSAY RESULTS.

Leela I. Murthy, MS, Ph.D., NIOSH

The National Institute for Occupational Safety and Health reviews information on hazardous chemicals potentially used in the workplace. The constant introduction of new agents requires NIOSH to develop priority systems for allocating NIOSH resources. Chemicals were ranked from the National Toxicology Program's (NTP) bioassay studies which evaluate the toxicological potential, including carcinogenic activity, of selected chemicals in 2 species of animals. Five categories of evidence of carcinogenicity were used by NTP: clear, some, equivocal, negative, and inadequate. Using these 5 categories of evidence, NTP chemicals were prioritized using a two-tiered approach. A numerical score (1 to 5) was first given to each study from the NTP conclusions. Next, an overall priority code (1-17) was devised combining the results of each animal species by gender. Agents carcinogenic in both sexes in 2 animal species/2 strains of the same species were designated priority code "1." NIOSH data showed worker exposure potential to 25 of 41 chemicals from priority code 1, the number of workers ranging from <50 to over 573,000. Control measures afforded to workers ranged from "no control" to a variety of personal, respiratory and/or ventilatory protection. The extent of exposure of workers and control measures used for the prioritized chemicals will assist NIOSH in evaluating the need for further studies or for preparation of informational documents.

SURVEILLANCE AND RISK ASSESSMENT OF EMPLOYEES IN HOSPITAL TB SKIN TEST PROGRAMS: OBSTACLES TO IMPLEMENTING CDC GUIDELINES.

Reinisch F, Athanasoulis M, Cussler S, Liu D, Sutton P, Osorio AM, Harrison R.

In conjunction with National Institute for Occupational Safety and NIOSH, the California Department of Health Services has implemented a multi-year study of tuberculosis (TB) control measures in three large, urban acute care facilities. Adherence to 1994 Centers for Disease Control (CDC) guidelines for administrative and engineering controls, and personal protective equipment is consistently evaluated at each hospital by a comprehensive assessment tool. Potential exposure to TB aerosol is assessed using a self-administered exposure questionnaire and retrospective tracking of infectious TB patients. Efficacy of TB control measures is evaluated by calculating yearly employee rates of TB infection using TB skin test (TSTs) surveillance data collected according to CDC Guidelines. In the first year of the study, obstacles that have been identified in adhering to recommended surveillance methods include incomplete employee data, lack of automated systems to schedule and record TSTs, and inability to assess compliance with the TST program and calculate accurate conversion rates. Commercially available customized surveillance software has been installed in two hospitals, with transfer of existing data from paper and existing systems and coordination with payroll departments to regularly obtain accurate employee census. A standardized TST conversion rate formula has been developed and included in the software to allow uniform risk calculation and routine report generation. Initial results from this study suggest that adherence to CDC Guidelines for epidemiologic surveillance and risk assessment of hospital employees in a TST program may require significant efforts to develop and maintain an accurate personnel database, apply uniform criteria for calculation of TST conversion rates, and utilize standardized methods for exposure assessment. Such efforts are important to maintaining a TB exposure control program recommended by the current CDC Guidelines.

OVERCOMING PRACTICAL CHALLENGES IN INTERVENTION RESEARCH IN OCCUPATIONAL HEALTH & SAFETY

Anthony D. LaMontagne, ScD, MA, MEd, and Carolyn Needleman, PhD.

Intervention research in occupational health and safety is a growing area. This type of research plays an important role in the evaluation and improvement of preventive measures ranging from worker training programs to OSHA standards. In addition to more familiar research issues, intervention research projects in naturalistic settings present the investigator with a number of practical challenges including gaining access to potentially resistant populations, maximizing participation rates in the face of weak incentives for cooperation, getting valid answers to sensitive questions, and meeting ethical obligations when health or legal problems are discovered in the course of study. Generalizable approaches to these challenges will be addressed in the context of a retrospective evaluation of the implementation of OSHA's 1984 ethylene oxide standard in Massachusetts hospitals. In the evaluation study, enthusiastic cooperation was secured, a 96% participation rate was realized, sensitive questions were posed successfully, and worker health risks discovered in the course of study received attention without having to wait for the write-up of the study results. Key elements in the study population's receptivity appear to have been (1) the investigators' familiarity with the hazard, its setting, and respondent concerns and needs, and (2) reciprocity in the form of providing follow-up consulting services as an integral part of the research process, delivered to each hospital at the conclusion of data collection. Specific techniques used in the study will be presented in the hopes of aiding other investigators facing similar practical challenges in occupational health and safety intervention research.

PROTOCOL FOR EVALUATING CONTROL OF OCCUPATIONAL TUBERCULOSIS: DO HOSPITALS ADHERE TO CDC ENGINEERING CONTROL GUIDELINES?

Sutton PM, Nicas M, Reinisch F, Cussler S, Athanasoulis M, Osorio AM, Liu D, Harrison RH.

In response to the rise in the incidence of TB, the U.S. Centers for Disease Control (CDC) has updated Guidelines to reduce the risk of TB transmission in health care facilities. Under a cooperative agreement with NIOSH, the California Department of Health Services has undertaken a multi-year study of TB control measures in 3 urban acute care facilities ranging in size from 240 to 582 beds, with 2,000 to 4,000 employees, and treating 71 to 85 cases of tuberculosis a year. Specific criteria by which to measure adherence to CDC Guidelines were developed and compiled as a comprehensive assessment tool. The assessment tool was pilot-tested and implemented at each hospital. Results of the engineering control component of this assessment will be presented. At the first hospital, 75% of the isolation rooms tested were under negative pressure with the door closed; unnecessary and prolonged opening of isolation rooms doors was observed; none of the rooms demonstrated negative pressure with the door open. Virtually all rooms tested lacked good air mixing; 1 room exhibited short-circuiting. 38% of the rooms tested were at the minimum or below the 6 air changes per hour CDC criterion. TB control problems encountered by these hospitals included: an absence of negative pressure isolation rooms, breaches in isolation due to opening of isolation room doors, patient movement throughout the hospital, and failure to maintain engineering controls. Obstacles to implementing CDC Guidelines were significant and included a lack of financial and technical resources, uneven understanding of risk among health care workers and poor delineation of program authority. This study suggests that improvement in TB control efforts may be needed if hospitals are to adhere to CDC Guidelines.

CHEMICAL INNOCENCE, AN UNCONSCIONABLE ASSUMPTION: A STUDY OF SOCIAL INSTITUTIONS, SCIENTIFIC ARGUMENTS AND THE CHLORINE CONTROVERSY

By Darius D. Sivin

The use of scientific information to make regulatory decisions is a value-based process, reflecting the interes of various social constituencies. The case of organochlorines shows how markedly different approaches to re ulation are equally consistent with environmental health findings, due to the uncertainties inherent to observ tional research and to interspecies extrapolation in risk assessment. The precautionary principle, advocated b the International Joint Commission (IJC), states that initial or continued production or use of a chemical sh be permitted only subsequent to a weight-of-evidence determination of its safety. Conditions at the IJC favo to serious consideration of the precautionary principle included citizen participation and lack of industry pres CanTox, Inc., an industry consultant, opposes the precautionary principle, arguing that a "safe" threshold sh be established for each chemical, below which environmental releases would be permitted. CanTox's approa like the IJC's, is value-based. To establish an empirical threshold for each of the 65,000 or more industriall produced compounds in North America, or even the 10,000 organochlorines and their thousands of identified products, would require repeated experiments with each compound at a number of doses. Since no one in th lic or private sector is prepared to invest in this much research, CanTox is effectively calling for the establis of regulatory thresholds in the absence of scientific evidence. This position is inconsistent with CanTox's o tion that the precautionary principle would require chemical phaseouts without scientific justification. The a proach of the Environmental Protection Agency (EPA) relies on Quantitative Risk Assessment (QRA), a m of estimating the harms potentially caused by a chemical or activity, and cost-benefit analysis to determine much protection can be bought at what price. This approach was adopted as part of a Reagan Administratio effort to reduce the participation of public interest groups in the regulatory process and to reduce the cost of ulation. In keeping with these goals, the technical language of QRA hides the fact that choices among vari hypotheses as to a chemical's toxicity, in the absence of conclusive data, are fundamentally political choices The organochlorine controversy illustrates the fact that regulatory decisionmaking is inherently political and

A TB CONTROL PROGRAM FOR 36,000 DEPARTMENT OF CORRECTIONS EMPLOYEES IN CALIFORNIA

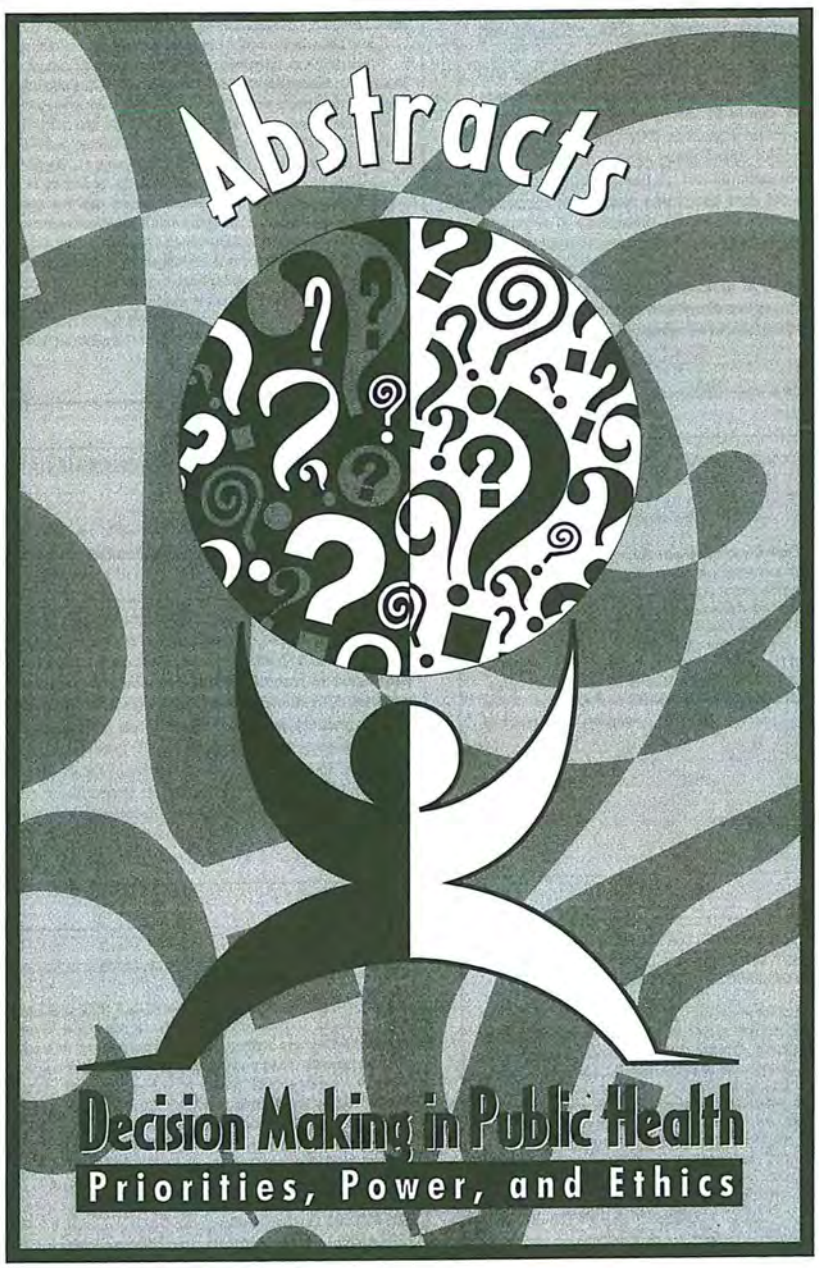
Susann J. Steinberg, M.D., A.B.P.M.

Objectives. To prevent exposure and transmission of TB in the California prisons and from the prisons to the community via employees. To implement a TB screening and identification program for employees.

Methods. CDC developed a comprehensive TB screening program to meet its objectives. Legislation was introduce to provide for mandated employee testing. Annually, as a condition of employment: 1) Current employees without a previously documented positive PPD skin test are tested annually; 2) Employees with documented positive PPD skin tests are evaluated for signs and symptoms and given a chest X-ray, as indicated. Employees are offered the testing and evaluation at no cost. New hires are required to present a certificate indicating they have been tested or evaluated for TB and are free from TB in an infectious stage prior to assuming their duties. Employees who convert under job-related circumstances are referred to Workers' Compensation for treatment. Non-job related conversions are referred to their private health care providers.

Results. CDC's Employee TB Control program ensures quick identification of employees with TB infection and refers them for further evaluation and/or treatment. 1994 testing established a baseline for CDC employee TB infection rates. 1995 testing has provided data for conversion rates. Rates were calculated by institution, job classification, and gender. In the future, rates will be calculated for age. The speaker will share the essentials of the TB Control protocols, results of the annual testing, and describe in detail the logistics of testing, data analysis, reporting, and the use of the prevalence rate, conversion rate, and case rate to manage TB in the CDC facilities.

Conclusions. Correctional employees are at greater risk for exposure to and transmission of TB than the general population. Quick identification and referral for treatment are necessary to minimize or prevent exposure and transmission of TB in correctional facilities. It is believed that this is the largest study of employees in relation to TB control for a high risk population. CDC has been successful for the past 2 years in annually testing its 36,000 employees in 30 institutions, at Headquarters, and in 4 major parole regions. CDC's protocol has had a significant impact on TB control for its employees.



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