XII. Challenges for the Future

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In this monograph, we have presented a general overview of concepts relating to surveillance and described programs that attempt to improve the capacity for performing surveillance of occupational diseases and injuries in the United States. Various authors have described current efforts in specific areas such as injury surveillance, exposure surveillance, or the surveillance of reproductive hazards while others have critiqued these efforts and have recommended directions for improvement.

The high level of activity over the past several years to improve surveillance is encouraging. As discussed elsewhere in this monograph, congressional committees, a committee of the National Academy of Sciences, the General Accounting Office, and an expert group convened by the Keystone Center have examined various issues relating to surveillance. As a result of this increased attention, programs have been developed.

In considering the future, where are the challenges? How should we define success? In five key areas, criteria for success can be stated, based in part on recent accomplishments, and potential obstacles identified. In so doing, the basis is set for evaluating the efforts of the future and for determining how best to allocate time and resources.

State-Based Surveillance

In recent years, state health departments have been encouraged to improve their capacity to perform surveillance and to focus surveillance efforts in a way that will lead to workplace intervention.[1] Particularly, states have been encouraged to reexamine the role of health-care-provider reporting of occupational disorders through adoption of a model of targeted surveillance followed by worksite intervention. (See chapter IV in this monograph.) Recent reports from states participating in this pilot effort are heartening; providers are reporting, state health departments are analyzing the reports, and follow-up visits to worksites are occurring.

The future success of state-based surveillance will be determined in part by the degree to which disease prevention occurs as a result of active surveillance efforts. As a parameter of success, the degree to which health providers do, in fact, report occupational diseases to state health departments must be used to monitor this process. As a further index of success, the degree to which worksites are visited, coworkers evaluated, and corrective action taken will require documentation.

As interest in occupational health and safety continues to spread, there is reason to be optimistic about expanding this pilot effort to most of the states. In this expansion, federal public health professionals must work to see that those states with strong programs continue to improve while those with weaker efforts overcome gaps in their level of effort.

NOTE: Author affiliations and addresses are listed on p. 7.

Collaboration of Federal Agencies

Three federal agencies have important responsibilities with respect to surveillance of occupational disease and injury: the Bureau of Labor Statistics (BLS) in the Department of Labor, and the National Center for Health Statistics (NCHS) and the National Institute for Occupational Safety and Health (NIOSH), both in the Centers for Disease Control, Public Health Service, Department of Health and Human Services. Some months ago, the three organizations signed a tripartite memorandum of understanding which expressed intention to collaborate in improving national estimates of the true occurrence of occupational disorders. Tangible progress has been made. As an example, a supplement to the 1988 National Health Interview Survey (NHIS) obtained comprehensive information on a variety of occupational disorders and obtained detailed work histories. This project, a joint effort of BLS, NCHS, and NIOSH, represents a model for future surveys of the National Center for Health Statistics in general and the National Health Interview Survey in particular. The three organizations have also collaborated on data sets collected by NCHS through either surveys or vital records analyses. Further collaboration has occurred in developing a methodology for coding of industry and occupation on vital records.

If these accomplishments of recent years are not institutionalized, these achievements will be eroded and information quality will suffer. Particularly within the activities of the National Center for Health Statistics, incorporation of occupational health issues into cyclical surveys such as the National Health Interview Survey is a particularly important goal in obtaining trend data over time. In all surveys, incorporation of occupation and industry information of an historical nature will be useful in obtaining high quality, relevant data at minimum cost. Continuation of the collaboration of these three agencies is essential in utilizing their different types of expertise and data systems.

Exposure Surveillance

Several articles within this monograph address needs to improve exposure surveillance. As described by Sundin and Frazier in chapter VII in this monograph, NIOSH has actively pursued large-scale surveys of representative samples of the US workplace to obtain statistically valid estimates of potential exposure to toxic substances and other workplace hazards. These studies are valuable but very expensive. Further, in view of the magnitude of the effort, the data sets are large and reports are slow to produce.

In considering the challenges of the future in improving exposure surveillance, utilization of existing data sources, such as those provided by the Occupational Safety and Health Administration (OSHA) and the Mine Safety and Health Administration (MSHA), is essential in view of limited resources for surveillance. (See chapter VI in this monograph.) By close interaction with the agency collecting the data, techniques can be modified to improve the utility of

the data source for surveillance purposes. Of particular importance, OSHA and MSHA can identify surveillance priorities that complement their responsibilities for assuring compliance with existing regulations. Through such an approach, a targeted exposure surveillance program could provide accurate information in a timely fashion which focuses prevention efforts in areas where the most significant exposures are occurring.

Standardization of Data Collection

Several chapters in this monograph have referred to efforts designed to standardize the approach to collecting surveillance data. Although this topic appears to be one of a purely technical nature, designed to improve reproducibility of collected information, the importance of standardization goes far beyond this utilitarian dimension.

Methods standardization affects professional credibility. In communicating within the field of occupational health and outside it, professionals must be able to specify the nature of occupational disorders. Further, in the conduct of surveillance programs, the approach to collecting data on the occurrence of occupational disorders must be standardized to confirm that "we know what we are looking for." If occupational health professionals cannot specify the problem that is to be prevented, the problem will be either neglected or ignored.

As a result of the pilot effort in state health departments to improve provider reporting of occupational disorders, interest in standardizing case reporting criteria has emerged. (See chapter V in this monograph.) In response to the needs of state health departments, NIOSH convened a subcommittee of its Board of Scientific Counselors and that subcommittee, along with the full Board, approved a case definition for carpal tunnel syndrome (See chapter V, appendix I), which was published in CDC's *Morbidity and Mortality Weekly Report*, vol. 38, July 21, 1989. This effort will be continued with other conditions and represents an important step in standardizing the process of providing case reports to health departments.

In the context of the proposed OSHA generic standard on medical surveillance, other opportunities for methods standardization will arise. In fact, standardization of approach is central to the concept of a generic standard.[2] In its response to OSHA's Advanced Notice of Proposed Rulemaking (ANPR), NIOSH endorsed the concept of methods standardization particularly with respect to the use of health questionnaires and tests of organ system function.[3]

Undoubtedly, this effort will give further impetus to activities underway to develop a standard occupational health survey questionnaire. (See chapter III in this monograph.) Analogous efforts relating to tests of organ system dysfunction should also prove particularly useful. Therefore, experience in the recent past and present activities present a basis for optimism and criteria for measuring the progress of standardization of surveillance methodologies in the future.

Employer Reporting of Occupational Illness and Injury

Undoubtedly, the most difficult area of surveillance is that related to employer reports of illness and injury required by OSHA regulations. Many have expressed concerns regarding underreporting of the occurrence of conditions from this source.[4] Clearly, strong disincentives to report affect the willingness of employers, physicians, other health personnel, and employees themselves to report conditions through this system. Nevertheless, useful information is undoubtedly available and further study of its utility is warranted.

Pilot projects planned by the Bureau of Labor Statistics for 1989 and 1990 will address important methodologic issues but may not address adequately the central issue of data credibility. The efforts of OSHA to issue citations to employers who willfully underreport illnesses and injuries will undoubtedly increase employer attention to this previously neglected area and, hopefully, will improve data quality as a result.

In view of the inherent limitations of employer reporting, parallel data systems must be maintained to assess the degree of underreporting over time. For example, studies performed by NIOSH on the rate of fatal occupational injury using death certificates have been usefully compared with BLS estimates derived from employer reports to identify potential sources of employer underreporting and differences in study design. (See chapter VIII in this monograph.)

Regardless of the utility of employer reports in the enumeration of occupational conditions, the process of recording these events is useful for other purposes. If properly executed, the system may serve the employer by monitoring responsibility to provide a "safe and healthful workplace." Further, through this system, the worker may be notified of the work-relatedness of a specific injury or disease. Although of limited utility for recording of work-relatedness of occupational diseases, workplace logs maintained in response to OSHA regulations may serve a useful purpose with respect to injuries. As a result, the existence of the system provides an internal stimulus to the employer to focus preventive efforts on causes of occupational disease and injury.

Although underreporting clearly limits the utility of data generated by employers, the data should serve a useful surveillance role, particularly in surveillance of acute injuries,[4] and as a stimulus for improving the health and safety of the workplace.

Conclusion

In 1983, a congressional committee agreed with Dr. J. Donald Millar, the Director of the National Institute for Occupational Safety and Health, that occupational health surveillance was "seventy years behind communicable disease surveillance."[5] Two years later, another congressional committee concluded that occupational health surveillance was "seventy-two years behind and still counting." Hopefully, as a result of the programs reviewed in this monograph and others not described here, the gap is being closed. In view of its technical complexity and significance for policy development, surveillance for occupational disorders will remain among the most challenging of public health programs.

To maintain the gains of recent years and to achieve new accomplishments, continued cooperation between state and federal agencies is essential. Future efforts must build on past accomplishments. We must learn from our failures and be encouraged by our successes. In view of its role in identifying the successes and failures of prevention efforts, surveillance is central to occupational health practice. In occupational health, a commitment to improving surveillance is a commitment to improving the heath and safety of workers.

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