AMERICAN JOURNAL OF INDUSTRIAL MEDICINE 40:291–294 (2001)

Introduction

Advent of Occupational Health Services Research

Scott Deitchman, MD, MPH,[1]* Allard E. Dembe, PhD, ScD,[2] and Jay Himmelstein, MD, MPH[2]

After lagging behind health services research in general health care, research is now examining health services provided to workers suffering occupational injuries and illnesses. The National Institute for Occupational Safety and Health, the Robert Wood Johnson Foundation Workers' Compensation Health Initiative, the Agency for Health Care Policy and Research (now the Agency for Healthcare Research and Quality), and the Canadian Institute for Work and Health co-sponsored a June, 1999, conference to explore research needs in this area. Fundamental tenets for advancing occupational health services research include: adopting the goal of improving occupational health care, including better integration of preventive and curative care; creating standardized interstate occupational health care data sets that include medical, economic, and patient perspectives; better defining quality in occupational care and developing appropriate performance measures; in addition to medical costs, assessing social, economic, medical and functional outcomes of care; considering the connections between work and health, including general health services; and addressing the need to train qualified occupational health services researchers. Am. J. Ind. Med. 40:291–294, 2001.
Published 2001 Wiley-Liss, Inc†

KEY WORDS: occupational health services; health services research; National Institute for Occupational Safety and Health; United States Agency for Healthcare Research and Quality

INTRODUCTION

During the past decade, extensive research has examined the delivery and financing of general medical care and its impact on costs, service utilization, and patient outcomes. Until recently, there were few comparable studies examining the structure, process, and impact of medical care provided to injured workers. Numerous investigators are now beginning to examine the type and extent of health services provided to workers suffering occupational injuries and illnesses to determine which approaches are the most cost effective and result in the best quality care. Much of the recent interest in this area has been driven by mounting concerns about the traditionally high cost of occupational health care and the potential impact of cost containment strategies that have been recently adopted in various states [Himmelstein et al., 1999].

The increasing awareness of a need for expanded occupational health services research led to its selection as one of the priority areas in the National Occupational Research Agenda (NORA) developed in 1996 by the National Institute for Occupational Safety and Health (NIOSH). Major grantmaking initiatives to stimulate enhanced research in this area were conducted by NIOSH

[1]National Institute for Occupational Safety and Health, Centers for Disease Control and Prevention, Atlanta, Georgia
[2]Center for Health Policy and Research, University of Massachusetts Medical School, Shrewsbury, Massachusetty
*Correspondence to: Scott Deitchman, 1600 Clifton Rd NE D32, Atlanta GA 30333.

Accepted 22 May 2001

in 1996 and 1999. Additionally, the Robert Wood Johnson Foundation (RWJF) established a national program, the Workers' Compensation Health Initiative, to test new models for enhancing the delivery of high quality medical care to injured workers in 1995. To date, 21 grant projects have been awarded through that program. Both NIOSH and RWJF have held technical meetings and educational programs to train qualified researchers and promote interchange of information and research data in this area. In 2000, NIOSH awarded a series of new training grants for the establishment of doctoral-level academic training programs in occupational health services research.

Four papers in this issue of the *Journal* were originally presented at the conference ''Functional, Economic, and Social Outcomes of Occupational Injuries and Illnesses: Integrating Social, Economic, and Health Services Research'' held in Denver, Colorado on June 13–15, 1999. The conference was organized by NIOSH and co-sponsored by the RWJF Workers' Compensation Health Initiative, the Agency for Health Care Policy and Research (now the Agency for Healthcare Research and Quality), and the Canadian Institute for Work and Health. These papers addressed research on health services delivered to prevent or treat occupational injury or illness, and research into how health services affect the economic and social consequences of occupational injuries and illnesses.

These four papers illustrate the complex linkages that exist between medical treatment for work-related disorders and broader characteristics of the employment context, including the prevention of job hazards, work organization, labor–management relations, disability management, and labor market transitions. The authors uniformly stress the inadequacies of existing data to answer fundamental questions about the nature of these interdependencies. They agree on the need for expanded research in this area and the necessity of transforming research into specific policies that will ensure the delivery of high quality care and make clinicians and healthcare systems more accountable for the care provided.

Pransky, Benjamin, and Dembe [Pransky et al., 2001] call attention to the difficulties in defining and measuring the quality of medical care for injured workers and the performance of workers' compensation health care systems. They draw comparisons between this effort and the development of similar standards in the general health care setting as represented by the promulgation of the Health Plan Employer Data and Information Sct (HEDIS) and The Foundation for Accountability (FACCT) quality measurement systems. Much of the motivation for developing performance standards in the occupational health area reflects concerns about the introduction of managed care systems and their potential impact on the quality of care and patient experiences. These authors point out many of the difficulties involved in developing an appropriate set of standards including the paucity of clinical data upon which to base the standards, concerns about the confidentiality of patients' medical information, and the need to make ''risk adjustments'' when drawing comparisons between different health care plans and providers.

Another fundamental challenge in the development of quality standards is the differing perspectives of system participants. Employers or insurers, for example, may think of ''quality'' care in terms of cost savings and speedy resumption of work activities. Affected employees, by contrast, might emphasize the ease of access to care, good communications with providers, and restoration of full physical and vocational functionality. In this respect, an employer's idea of an indicator of ideal system performance could be entirely different than a patient's notion of high quality and supportive care. Reconciling those disparate views will be a major challenge to the architects of standard measurement systems.

Ideally, work-related injuries and illnesses would be prevented rather than relying upon treatment. In this regard, occupational health suffers from the same societal biases as in general health care that lead to tremendous expenditures on curative care and comparatively little for preventive care. Frequently, health care providers see the prevention of occupational maladies as strictly as the employer's responsibility. As Rudolph and Deitchman point out, however, the health care professional can be an active partner in workplace prevention efforts [Rudolph and Deitchman, 2001]. For example, health care workers can identify workplace factors that may contribute to patient complaints and alert employer management of the need to correct the causative hazard. As occupational health care increasingly is provided in large managed care organizations, providers can include epidemiological analyses for better detection of injury and illness trends that provide clues to prevention opportunities. Unfortunately, traditional barriers to prevention remain, including lack of occupational health training for many providers and financial barriers in plans that do not cover prevention activities.

Rudolph and Deitchman further remind us that ''occupational health services'' are not confined to the diagnosis and treatment of work-related disorders covered under workers' compensation. They also include pre-placement medical screening, medical surveillance and monitoring (e.g., periodic audiometric testing), worksite-based health promotion and job accommodation, substance abuse programs, and on-site first aid. Each of these potentially provides health care professionals with an opportunity to move beyond limited approaches dealing with individual symptoms and behavior to a population-based approach that emphasizes protection of the entire workforce. These authors conclude that a multifaceted approach is needed drawing on a variety of techniques and perspectives and that

additional research is needed to evaluate the effectiveness of the various strategies.

If prevention is the goal, Shannon, Robson, and Sale take the discussion a step further by exploring the concept of a ''healthy workplace'' [Shannon et al., 2001]. The components of a healthy workplace can include workplace organization and job demands, management attitude, worksite communications, and the external environment in which the workplace operates. Clearly some employers create better environments than others, and guidebooks that describe the ''best places to work'' echo worker impressions about the features that are most desirable. As Shannon, et al. [2001] describe, there are fascinating suggestions that workplace organizational factors contribute to the incidence of, and recovery from, occupational injuries and illnesses and, therefore, present opportunities for intervention. It has proven a major challenge, however, to identify the workplace factors most ripe for intervention and to demonstrate their effectiveness. Studies have been plagued by inadequate statistical power, inconsistent results, and methodological shortcomings. The positive side of this experience is that it suggests that the field holds many opportunities for investigation.

Ultimately, however, health is more than just treatment or prevention of occupational injury/illness—it is ''a state of complete physical, mental, and social well being'' [World Health Organization, 1978]. This includes the family, community, and social environment in which the worker lives and functions. All of them may be affected by work-related injury/illness. Just as different occupational health services may have different medical outcomes, they may also differently affect social and economic well-being. A complete understanding of occupational health services, therefore, must include information on how those services can mitigate the social and economic impact of occupational injury/illness. This information is rarely available through health records. Mustard and Hertzman describe various methods by which to acquire a more complete perspective on the health, economic, and functional experience of injured or ill workers [Mustard and Hertzman, 2001]. One of their methods, linking administrative records, is especially challenging in countries, such as the US, where centralized health care systems and records are absent. In addition, increasing concerns for patient privacy are likely to further complicate researcher access.

Any system for measuring or establishing performance standards will require valid and reliable data on workers' health care experiences covering the workplace, through injury/illness, treatment, and rehabilitation, to return to work or disability. In a fifth presentation at the conference (not published in this issue of the Journal) Mendeloff reviewed the data sources available and being developed to support occupational health services research [Mendeloff, 1999]. He noted that most existing occupational surveillance systems tabulate (very imperfectly) the incidence of work-related injuries and illnesses, with little or no linkage to information about health care procedures, costs, and outcomes. As a result, researchers are often frustrated because administrative systems based on workers' compensation claims records, hospital discharge summaries, and clinical surveillance (such as emergency room encounters) are incomplete. Even linkages that trace a workers' experience through the entire occupational health delivery system often afford only partial views of the total health services impact. The advent of detailed electronic medical records, along with electronic filing of workers' compensation information, has been slow to develop, but may afford the most promising new approach for understanding injured workers' health services experiences.

Mendeloff described the inherent inadequacies of relying exclusively on data gained through the workers' compensation (WC) insurance system, since many cases of occupational injury and illnesses are not reported as WC claims or might fail to be accepted as such by WC insurance carriers. He also discusses the problems in quantifying the indirect effects of occupational injuries, and the difficulties involved in measuring injury severity. Mendeloff expressed optimism that new initiatives underway to standardize and collect interstate data on occupational health care, collect information directly from health care systems, and utilize large-scale national survey databases may hold promise for dramatically improving the type and quality of data available for occupational health services researchers.

Occupational health services research is a young discipline, with roots in occupational safety and health, in economic analysis of labor-market participation, and in traditional health services research. These papers help demonstrate many of the challenges confronting researchers attempting to examine the impact of health services on workers with occupational injuries and illnesses. Future efforts to advance the field must be predicated on several fundamental tenets:

a) The goal of occupational health services research should be to promote the adoption of policies and procedures that ensure that all injured workers have access to the best possible care with a goal of minimizing disability and maximizing functional status, employability, and quality of life.
b) Systematic collection of relevant data is required, including standardized interstate administrative data on medical encounters, economic data including wage loss and insurance wage replacement, and patient-centered survey data on functional status, labor market participation, and patient experiences with occupational health services.
c) Better clarity is needed as to what constitutes high-quality medical care offered to injured workers.

d) Research must address the assessment of wide-ranging social, economic, medical, and functional outcomes of care in addition to direct cost impacts.
e) Any examination of the impacts of occupational health services ought to consider health services in the broader context of general health services and of the complex connections between work and health.
f) There is a growing need for the training of qualified investigators in occupational health services research who can address the multidisciplinary challenges of this emerging field.

REFERENCES

Himmelstein J, Buchanan JL, Dembe AE, Stevens B. 1999. Health services research in workers' compensation medical care: policy issues and research opportunities. Health Services Res 34:427–440.

Mendeloff J. 1999. Data needs for occupational health services research and for understanding the social and economic consequences of injuries and illnesses. Presented at "Functional, Economic, and Social Outcomes of Occupational Injuries and Illnesses: Integrating Social, Economic, and Health Services Research, " Denver, Colorado, June 14, 1999.

Mustard C, Hertzman C. 2001. The relationship between health services outcomes and social and economic outcomes in workplace injury and disease: data sources and methods. Am J Ind Med 40:335–343 (this issue).

Pransky G, Benjamin K, Dembe A. 2001. Performance and quality measurement in occupational health services: current status and agenda for further research. Am J Ind Med 40:295–306 (this issue).

Rudolph L, Deitchman S. 2001. Integrating occupational health services and occupational prevention services. Am J Ind Med 40: 307–318 (this issue).

Shannon HS, Robson LS, Sale JE. 2001. Creating safer and healthier workplaces: the role of organizational factors. Am J Ind Med 40:319–334 (this issue).

World Health Organization. 1978. Primary health care report of the international conference on primary health care, Alma-Ata, USSR, 6–12 September 1978.