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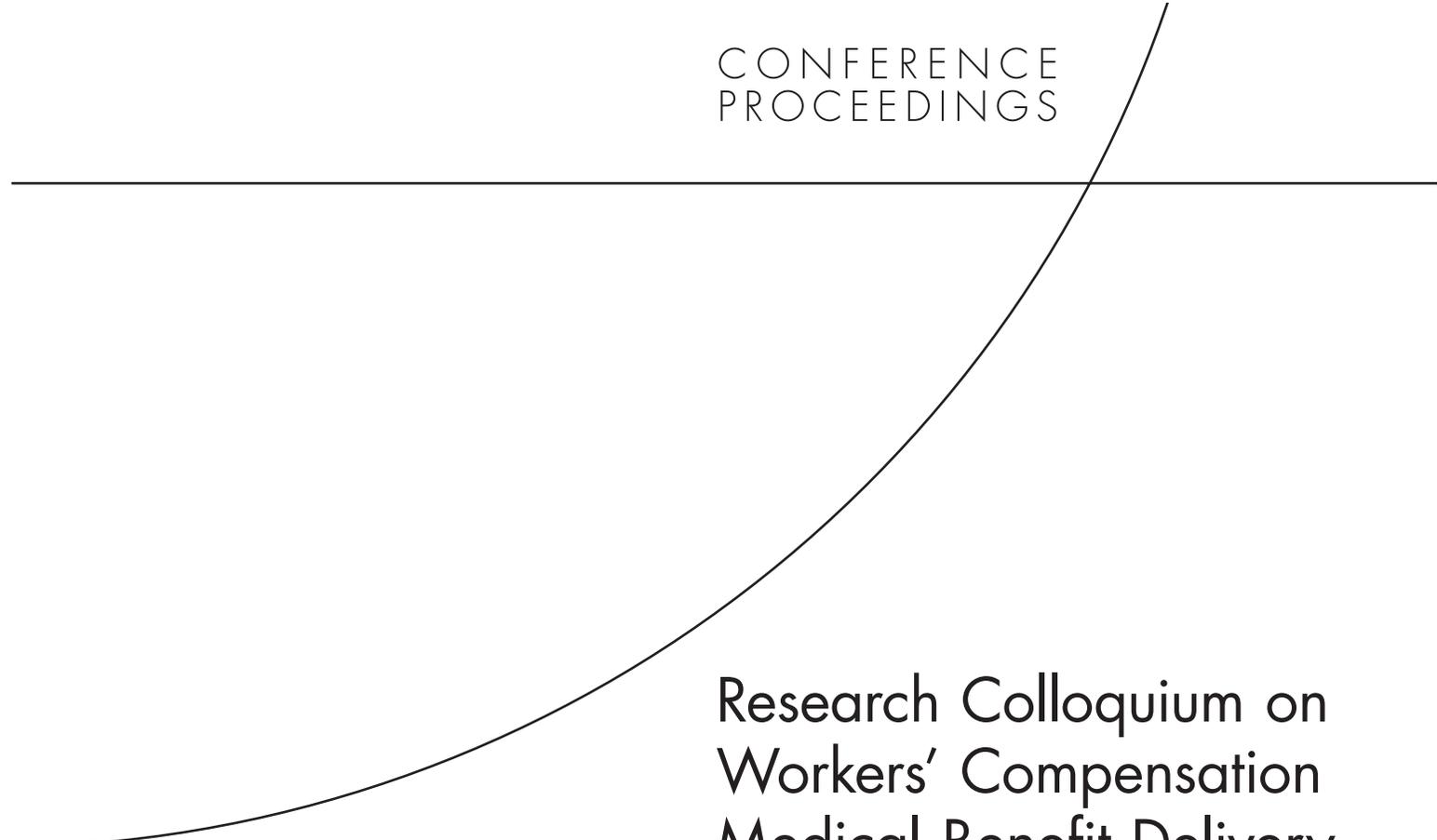
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CONFERENCE
PROCEEDINGS



Research Colloquium on Workers' Compensation Medical Benefit Delivery and Return to Work

Stephanie S. Teleki, Allard E. Dembe,
Jeffrey S. Harris, Thomas M. Wickizer,
Donna O. Farley, Barbara O. Wynn

Prepared for the
California Commission on Health and Safety and Workers' Compensation



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Preface

The papers in this compendium were presented at a May 2003 research colloquium on the workers' compensation medical benefit delivery system and return to work.¹ At the time, the California workers' compensation program was at the center of intense debate and legislative activity. In 2002, payments for medical care had increased 26.3 percent and, at \$387 per 100,000 covered workers, were more than twice the national average.² Yet despite this upward trend in costs, California's injured workers expressed greater dissatisfaction with their care and had generally poorer outcomes than did injured workers in other large states with lower medical expenditures.³

The colloquium brought together national experts and California stakeholders with an interest in whether injured workers have access to appropriate medical care and how initiatives in other health programs might be used to improve the efficient delivery of high-quality services to injured workers. It was designed to foster dialogue, to further research, and to spur reform of the California workers' compensation medical benefit delivery system. The six papers in this compendium were selected from among the many insightful papers that were presented at the colloquium. Together, the papers provide an overview of the access, cost, and quality issues confronting the workers' compensation medical benefits delivery system and identify mechanisms that might be used to improve the quality and efficiency of the medical care provided to injured workers.

Stephanie S. Teleki, Cheryl Damberg, and Robert T. Reville offer a paper on quality improvement that provides a framework for the papers that follow on specific aspects of workers' compensation medical care. Their paper describes the attributes of a high-quality health care system and provides important lessons from non-workers' compensation health care that might be used to promote quality monitoring, improvement, and accountability in workers' compensation. The authors conclude by presenting an agenda for improving the quality of medical care in California's workers' compensation program.

Allard E. Dembe and Robert J. Harrison's paper explores the non-financial access issues affecting injured workers as they attempt to gain entry into the system and find providers who are willing to treat them, and in obtaining appropriate and effective care. The authors suggest both voluntary and regulatory strategies for improving access to workers' compensation medical care.

Jeffrey S. Harris focuses on outcomes, synthesizing earlier work that assesses the efficiency and effectiveness of workers' compensation medical care. He draws on cross-state comparisons of administrative data, case reviews, and survey data on physician practices to highlight the attributes of effective physician and employer practices in reducing time lost from work. Thomas M. Wickizer et al.

¹ Colloquium co-chairs were Christine Baker, Executive Officer, California Commission on Health and Safety and Workers' Compensation, and Susan Marria, then-Acting Chief Deputy Director, Department of Industrial Relations.

² Statistics from the National Academy of Social Insurance (NASI), online at <http://www.nasi.org> (as of September 2006).

³ Statistics from the Workers' Compensation Research Institute (WCRI), online at <http://www.wcrinet.org> (as of September 2006).

take a detailed look at one statewide intervention to improve outcomes. They describe a pilot study in Washington that introduced a communitywide delivery system intervention to improve health outcomes and reduce disability among injured workers. One of the main goals of the intervention was to develop quality performance indicators that would help establish expectations for medical care delivered to injured workers and provide information to support quality improvement activities.

Papers by Donna O. Farley and Barbara O. Wynn offer two other perspectives on improving quality of care for injured workers. Farley suggests using worker experiences with health care providers as a performance measure and tool for improving quality. Focusing on potential applications of the Consumer Assessment of Healthcare Providers and Systems (CAHPS®), formerly the Consumer Assessment of Health Plans Study, in workers' compensation medical care, Farley outlines the steps that would need to be followed in developing a survey instrument. Noting that financial incentives affect access and utilization, Wynn explores the issues related to adopting Medicare-based fee schedules for workers' compensation, including the modifications that might be necessary to tailor the Medicare fee schedules to workers' compensation patients.

Taken together, these papers highlight several recurring themes:

- There is substantial room for improvement in the California workers' compensation benefit delivery system.
- Progress is most likely to occur if there is a common understanding among employers, workers, and the provider community alike that each stands to benefit from efforts to improve the medical treatment delivery system.
- Measures of the clinical quality of medical care and worker satisfaction with the delivery system are needed for performance assessment and accountability.
- While there are unique issues and challenges in workers' compensation medical care, there are also models in non-workers' compensation health programs that have potential relevance to workers' compensation.

The thoughtful discussions at the May 2003 colloquium and in other venues helped draw attention to potential system reforms to improve the quality and efficiency of care. Reform legislation in 2003–2004 contained provisions intended to improve the quality and efficiency of the system and reflected many of the ideas presented in these and other papers. Most notably, the legislation took three important steps: (1) it gave employers authority to establish medical networks, (2) it made evidence-based treatment guidelines presumptively correct in medical necessity determinations, and (3) it adopted Medicare-based fee schedules for non-physician services. Of course, much remains to be done. The impact of the reform legislation needs to be evaluated. Measures to assess the appropriateness of care need to be developed, and a monitoring system is needed to assess access, cost, quality, and outcomes on an ongoing basis. Continued progress along these lines will require concerted and sustained efforts across the stakeholder community.

California Commission on Health and Safety and Workers' Compensation

The Commission on Health and Safety and Workers' Compensation is a joint labor-management body created by the workers' compensation reform legislation of 1993 and charged with overseeing the health and safety and workers' compensation systems in California and recommending administrative or legislative modifications to improve their operation. The Commission works with the entire health and safety and workers' compensation community including employees, employers, labor organizations, insurers, attorneys, medical and rehabilitation providers, administrators, educators, government agencies, and members of the public to provide a more effective and efficient workers' compensation system in California.

The Commission contracts with independent research organizations for projects and studies designed to evaluate critical areas of key programs. This is done to ensure objectivity, incorporate a balance of viewpoints, and to produce the highest-quality analysis and evaluation.

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Quality of Health Care: What Is It, Why Is It Important, and How Can It Be Improved in California's Workers' Compensation Programs?

Stephanie S. Teleki, Cheryl Damberg, and Robert T. Reville

INTRODUCTION

The Institute of Medicine (IOM) has defined quality of health care as “the degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge.”¹ A primary objective of the United States health care system is to provide the combination of health services that optimizes the population's health; efforts to improve the quality of health services are key to reaching this goal.²

Although there is a general assumption by most Americans that the quality of health care provided in the U.S. is very high, it is now well-documented that this is often not the case.^{1,3} The failure to verify the blood type of a transplant patient at Duke Medical Center serves as a dramatic example that, even at the nation's premier medical centers, the quality of care may be less than optimal.⁴ Such quality-related deficiencies are especially alarming at a time when annual, national spending on health care has exceeded \$1 trillion (approximately 14% of the Gross Domestic Product or GDP) and is expected to increase dramatically over the next decade.⁵ In short, the quality of health care in the U.S. is not acceptable from a clinical standpoint and is not commensurate with the amount spent.

The care provided through workers' compensation programs is not immune from the same quality problems that plague the U.S. health care system as a whole. In an effort to advance quality assessment and improvement efforts in California's workers' compensation programs, this paper begins by providing a broad overview of health care quality including: the current state of health care quality, why it is important, and lessons learned. This paper then examines key issues that should be considered and addressed (if possible) when measuring and improving health care quality. Lastly, this paper concludes by offering some suggestions for next steps that may be taken to improve the quality of health care for individuals in California's workers' compensation program.

It is important to acknowledge one important area that is not within the scope of this paper: injury prevention, a field that is independent of quality measurement and improvement, and is industry- and often worksite-specific. Over the last 100 years, major strides have been made in reducing work injuries due in part to: 1) the outrage over preventable catastrophic events which led to the passage in 1970 of the Occupational Safety and Health Act. This act created the Occupational Safety and Health Administration (OSHA) (which promulgates and enforces workplace safety and health regulations) and the National Institute for Occupational Safety and Health (NIOSH) (which conducts occupational safety and health research for prevention); 2) the application of epidemiology and a public health approach to injury

prevention; and 3) an increase in cooperation and collaboration among government, industry, labor, and other relevant sectors as well as among those trained in diverse disciplines that study work injuries.⁶ Additionally, national surveillance data on traumatic occupational fatalities are now available, as well as estimates of lost workday injuries and work-related injuries presenting to emergency departments.⁷ Nonetheless, despite these strides and the useful information that does exist, many barriers to injury prevention remain. According to experts in the field, there is a lack of sufficient prevention evaluation research, including cost-benefit analysis; additionally, information about new prevention programs, strategies, technologies and products is frequently slow to be diffused and adopted by industry.^{6,7} Although this paper focuses specifically on the measurement and improvement of the quality of health care and does not address injury prevention, it should be kept in mind that avoiding injury must be an important component of an overall strategy to improve the health and well-being of workers.

AN OVERVIEW OF HEALTH CARE QUALITY

Key Performance Dimensions of a High Quality Health Care System

The IOM has identified six key performance dimensions of a health care system that provides high quality care to individuals.¹ First, the system is safe (i.e., free from accidental injury) for all patients, in all processes, all the time. This standard implies, for example, that there should not be lower standards of safety on weekends or at night, that patients need only tell their health care providers information once, and that information is not misplaced or overlooked. Second, a high quality health care system provides care that is effective (i.e., care that, wherever possible, is based on the use of systematically obtained evidence to make determinations regarding whether a preventive service, diagnostic test, therapy, or no intervention would produce the best outcomes). Third, a high quality health care system is patient-centered. This concept encompasses the following: respect for patients' values, preferences, and expressed needs; coordination and integration of care; information, communication, and education; physical comfort; emotional support (i.e., relieving fear and anxiety); and involvement of family and friends. Fourth, high quality health care implies care that is delivered in a timely manner (i.e., without long waits that are wasteful and often anxiety-provoking). Fifth, a high quality health care system is efficient (i.e., uses resources to obtain the best value for the money spent). Sixth and lastly, a high quality health care system is equitable (i.e., care should be based on an individual's needs, not on personal characteristics—such as gender, race, or insurance status—that are unrelated to the patient's condition or to the reason for seeking care).

Our Reality: The Current State of Health Care Quality in the U.S.

At present, the U.S. is at the forefront in terms of both developing and using state-of-the-art medical technologies and innovative pharmaceuticals; it has some of the most sophisticated and highly renowned medical centers in the world; and its training of clinicians is recognized across the globe as being of the highest caliber.^{8,9} However, despite these impressive facts and largely unrecognized by most Americans, the quality of health care in this country is often sub-optimal and, at times, alarmingly poor.^{1,3} As has now been well-documented in the medical literature, the problems with the quality of health care in the U.S. are serious and extensive—even at the finest medical institutions in this country, even if a patient has health insurance coverage, and even if he/she is able to access the health care system.^{1,3,10} Generally

speaking, quality problems fall into one of three categories. First, overuse (when a service is provided under circumstances in which its potential for harm exceeds possible benefit) is a concern.^{1,11} For example, in one study of Medicaid beneficiaries diagnosed with the common cold, 60% filled a prescription for an antibiotic despite the common knowledge that: 1) almost all colds are caused by a virus for which antibiotics are not effective, and 2) such overuse leads to the development of bacterial strains that are resistant to available antibiotics.¹² Additional examples of overuse include one national study that found that 17% of coronary angiographies, 32% of carotid endarterectomies, and 17% of upper gastrointestinal tract endoscopies were performed for clearly inappropriate indications; another study concluded that 16% of hysterectomies in a group of seven health maintenance organizations (HMOs) were inappropriate.^{11,13,14} More recently, Tenet Healthcare Corp., the nation's largest for-profit hospital chain, has been under federal investigation regarding claims that physicians at its Redding hospital performed unnecessary heart surgeries;¹⁵ and researchers have found that Medicare enrollees in higher-spending regions receive more care than those in lower-spending regions, but do not have better health outcomes or satisfaction with care.¹⁶ In general, it is estimated that about one-third of the procedures performed in the U.S. are of questionable health benefit relative to their risks.²

At the opposite end of the spectrum, underuse (the failure to provide a health care service when the expected benefit exceeds the expected risk) is a common quality problem.^{1,3,11} At the most basic level, over 40 million Americans do not have health insurance, thus greatly limiting their ability to obtain care.¹⁷ Even among those who are able to access the health care system, many fail to receive recommended preventive and/or clinically indicated services for both acute and chronic conditions.³ For example, in one nationally representative sample, approximately one quarter of children did not receive recommended routine vaccines;¹⁸ in another nationally representative sample, over 30% of women had not had a Pap smear in the prior three years.¹⁹ Regarding treatment for acute conditions, it is estimated that failure to use known, effective treatments for acute myocardial infarction (such as thrombolytics, beta-blockers and aspirin) for all patients who could benefit from these interventions may result in as many as 18,000 preventable deaths each year in the U.S.^{11,20} Overall, the gap between the care individuals should receive and what they do receive is large. As a recent comprehensive, national study of quality of care in the U.S. found that, on average, patients receive only about half of recommended care.³ In this study, little difference was found among the proportion of recommended preventive care provided (54.9%), the proportion of recommended acute care provided (53.5%), and the proportion of recommended care provided for chronic conditions (56.1%).³

Third, the system suffers from misuse of services.^{1,11} Misuse occurs when an appropriate service is provided incorrectly—meaning the patient does not receive the full potential benefit of the intervention. For example, 33% of a national sample of elderly Medicare patients discharged with antidepressants were given doses below the recommended level.²¹ Misuse may also refer to medical error. A report released in 1999 by the IOM estimated that between 44,000 and 98,000 Americans die each year from medical errors.²²

In addition to these three categories of problems, there is notable consumer dissatisfaction with the health care system—another indication of less-than-optimal quality. According to recent results of the Consumer Assessment of Health Plans Study (CAHPS®), 15 to 27% of health care consumers in the U.S. reported problems getting needed care, 13 to 22% reported problems getting care as quickly as desired, 6 to 14% reported problems with poor physician communication, and 28 to 36% mentioned problems with

health plan customer service.²³ In California, results of the 2004 California Consumer Assessment Survey (CAS) indicate that roughly 25-30% of patients report problems with getting access to routine and specialty care, and close to half say their physicians did not follow-up with the results of tests.²⁴

Although most patients are not medical experts, studies show that consumers tend to report accurately many experiences with the health care system, including the provision (or lack thereof) of clinical care;^{25,26} for example, one study determined that consumers correctly reported 80-94% of history and physical elements that were performed during a health examination.²⁵ Patient satisfaction information also provides a meaningful assessment of the design and management of the health care system.²⁷ Additionally, patient experiences are important given that the interpersonal process between a physician and patient is an important means by which high-quality, technical care is delivered and on which its success depends (i.e., communication is important to adherence).²⁷ Patients who are dissatisfied with the health care they receive have been found to switch physicians and health plans more often (thereby disrupting their continuity of care), to delay seeking needed care, and to have poorer health outcomes.^{1,28,29,30,31} For all these reasons, patient satisfaction measures are valuable.

Another indicator of problems in the delivery of health care in the U.S. is the wide and unfounded variation in clinical practice patterns that have been well-documented for several decades across regions of the U.S., within states, and between cities in the same state or region.^{2,32} For example, one study found that in the last six months of life, Miami residents spent an average of 4.8 days in intensive care units (ICUs), while Minneapolis residents spent an average of only 1.6 days.³² The same study determined that mastectomy for breast cancer is also a high variation procedure: 25 regions in the U.S. had rates 30% higher than the national average, while 21 regions had rates more than 25% below the national average; overall, rates were higher in the Midwest than on the East or West coasts.³² Such variations have not been explained by differences in patient need or demand; indeed, they have little to do with the severity of illness, socioeconomic status, or the prices of medical services. Rather, the amount and type of health care consumed by Americans is alarmingly dependent on the capacity (i.e., supply) of the health care system where individuals live and on the practice styles of local physicians.³² Such geographical variations are troublesome not only with regard to their clinical quality implications, but also with regard to their cost ramifications. As noted earlier, Medicare enrollees in higher-spending regions of the country were found to receive more care than those in lower-spending regions, but were not found to have better health outcomes or satisfaction with care.¹⁶

With respect to workers' compensation programs, there is no reason to believe that the state of health care quality in these programs differs from that found in the general U.S. health care system. Although quantification is currently lacking, it is reasonable to assume that the workers' compensation system—being a subset of the general health care system—likely suffers from the same problems that plague the health care system as a whole: overuse, underuse, and misuse. Additionally, as with patients who have complex co-morbidities in the general health care system, continuity of care for workers within the workers' compensation health care system is known to be problematic. For example, one survey of California workers found that fewer than 20% of injured workers saw only one physician for treatment of their injuries, while one quarter saw five or more physicians;³³ another study determined that providers of patients with work-related conditions were less likely to be those patients' primary care physicians.³⁴

One notable difference between California workers' compensation and the general healthcare system is the universality of coverage for work-related conditions and the fact that payment is supposed to be made from the first dollar. However, as is discussed in detail in another article in this volume (Dembe and Harrison), access to care for injured workers is another concern for a variety of reasons including the following: patients may be unable to prove that their conditions were caused occupationally; they may be discouraged by employers from reporting occupational injuries; workers' compensation insurance carriers may contest claims; physicians may not be willing to participate in workers' compensation programs due to administrative or legal complexities of the system and/or low compensation; and cumbersome authorization procedures must often be followed to receive care for work-related conditions.^{34,35,36}

Additionally, dissatisfaction from all parties involved in the workers' compensation system is common. As was found in a survey of injured California workers, nearly 25% of survey respondents reported dissatisfaction with medical care received or provider choice; over 44% said they had returned to work too soon after injury; and many reported significant continuing impacts of the work injury.³³ From the employer's perspective, dissatisfaction comes from the belief that providers (who are generally paid on a fee-for-service basis in workers' compensation programs) prescribe unnecessary services and keep employees from work for unreasonable lengths of time.³⁷

Underlying all of these concerns is lack of the following: quality of care standards, evidence-based treatment protocols and measures, systematic measurement of quality of care specific to work-related injuries, and public accountability of the performance of providers in the workers' compensation system.^{37,38,39}

Thus, despite the current deficiencies in measuring the quality of care provided through workers' compensation programs, it is apparent from the information that is available that the state of quality of care in such programs is problematic. The lack of current knowledge regarding the extent and specifics of the problems underscores the need to measure the quality of care and to develop strategies for improvement where there are deficiencies.

Measuring Health Care Quality

Until fairly recently, professional judgment was relied upon almost exclusively to ensure that patients received high-quality care; the monitoring of and improvement in quality were viewed as the responsibility of individual clinicians.⁴⁰ However, as evidence has emerged regarding wide and inexplicable variations in practice patterns as well in quality, interest has grown in collecting and assessing objective measures. Additionally, dramatically increasing health care costs in the early 1990s pushed both public and private purchasers of health care to demand measurement and accountability.⁴¹

The measurement of health care quality is an "elusive but achievable goal."⁴² To break down this measurement challenge into more manageable units, the conceptual framework proposed by Avedis Donabedian is often used; this framework identifies three domains of quality: 1) structure, 2) process, and 3) outcome.⁴³

Structure refers to the relatively stable elements of a health care delivery system that promote or prevent access to and provision of services.² The structure of a health care delivery system includes community characteristics (such as disease prevalence and distance of the population from key health resources), organizational characteristics (such as number of hospital beds per capita, staffing patterns, and ownership), provider characteristics (such as specialty mix, years in practice, and board certification status), and population characteristics (such as socio-demographics, insurance status and type, and functional status).² Structural quality is most commonly assessed through organizational accreditation. Organizations such as the Joint Commission on the Accreditation of Healthcare Organizations (JCAHO), the National Committee for Quality Assurance (NCQA), and the American Accreditation Healthcare Organization (also known as URAC) accredit various structural aspects of the health care system ranging from hospitals and clinical laboratories to managed care and utilization review programs. In general, research to date has shown that structural factors are often associated with differences in the process of care, but not with significant differences in outcomes.² For example, health insurance does not guarantee higher quality care because there may be other factors such as lack of education or transportation that impede access.⁴⁴ Additionally, although there is evidence that facilities that perform a higher volume of certain procedures yield better outcomes,^{45,46,47} some researchers have found that volume is only modestly associated with outcomes (i.e., other — as yet undetermined — factors may explain more of the variance).^{48,49,50}

Process refers to what occurs during the patient-provider interaction, and consists of both technical excellence (the appropriateness of the intervention) and interpersonal excellence (the humane and responsive nature of the care provided to the patient).²⁷ There are four commonly used methods of assessing the quality of medical care processes. First, the appropriateness of an intervention (either diagnostic or therapeutic) may be assessed to determine whether for individuals with specific clinical and personal characteristics, the expected health benefit from doing the intervention is sufficiently greater than the health risk so as to justify the intervention.² One group of experts at RAND and UCLA advocate assessing the appropriateness of an intervention through a rigorous procedure of reviewing the literature, developing a list of indications, convening a panel to select indications, rating the indications, and ultimately evaluating the appropriateness of interventions. A second method of process assessment is to examine the degree to which care parallels practice guidelines or professional standards. A third method of process assessment is practice profiling which compares the patterns of cost, utilization and/or quality processes among providers to a pre-established standard. Profiling is distinct from the other process methods outlined in that it is not necessarily conducted specific to a clinical condition. Fourth, process assessment, and more specifically, the interpersonal quality of care, may be evaluated through consumer ratings. Such ratings are typically obtained through surveys of health plan enrollees, and consist of measures of both care received and satisfaction with care received.

Outcome, the third dimension of quality, refers to the effect of the care on the health status of both patients and populations; it includes the results of efforts to prevent, diagnose, and treat health problems, and is often viewed as the “bottom-line” of health care quality assessment.^{2,27} Three approaches to outcome assessment include the condition-specific approach (which examines outcomes for individuals with a particular diagnosis), the generic approach (which examines outcomes—like mortality, change in functional status, and patient satisfaction—that can be assessed on all individuals regardless of health

problems), and the sentinel/adverse events approach (which examines an event that is likely associated with poor quality and tracks its frequency).^{27,51}

In general, good structure increases the likelihood of good process, and good process increases the likelihood of good outcomes.²⁷ It is possible to measure quality at any of the three levels proposed by Donabedian, and all three levels refer to important pieces of the health care quality puzzle. However, structural components typically are relatively stable and, therefore, difficult to change, so are not the best focus for policymakers.² Process data are thought to be more sensitive measures of quality than outcome data because a poor outcome does not necessarily occur every time the provision of care is substandard and/or may not be captured because it may take a long time to track.⁴⁰ Process measures may be viewed as proxies for outcomes if a link between the process and outcome has been demonstrated. For example, the process measure of an adult receiving an immunization against measles, mumps, and rubella is a proxy for the desirable outcome of preventing these diseases.

There are two general approaches to assessing quality and identifying areas for improvement.^{1,2} First, one may examine the health services delivery system without referring to the specific clinical problems of individuals or treatments rendered to them. One example of this method is tracking the timeliness with which a physician receives the results for laboratory tests he/she ordered. Alternatively, one may focus on specific health conditions or services and compare the care delivered to an individual (or group of individuals) having those conditions to an accepted standard. Two examples of this method are evaluating whether: 1) a depressed patient was prescribed an appropriate anti-depressant at the correct dose, and 2) a woman underwent mammography screening at the appropriate time interval. For optimal quality improvement of a health care system, both areas should receive significant attention.¹ Health care quality problems are not simply the result of the deficiencies of a few health care providers; on the contrary, systems are highly responsible as well. As such, assessment and improvement are necessary at both the individual and system levels.¹

Lessons Learned from the Non-Workers' Compensation World

Within the U.S. health care system, many types of organizations have taken a leadership role in promoting quality measurement, improvement, and accountability. Among these there are accrediting bodies (e.g., NCQA, URAC, and JCAHO), professional associations (e.g., the American Medical Association and Society of General Internal Medicine), individual purchasers or groups that represent purchasers of care (e.g., the Centers for Medicare and Medicaid Services or "CMS", Pacific Business Group on Health, the Alliance, the Buyers HealthCare Action Group, the National Business Coalition on Health, The Leapfrog Group), governmental agencies (e.g., CMS, AHRQ, and the Centers for Disease Control and Prevention), and not-for-profit entities (e.g., the IOM, the National Quality Forum, the Foundation for Accountability, the Institute for Healthcare Improvement, and RAND). The mandates of these groups include identifying priority areas for health care quality, establishing national standards for quality measurement and accountability, implementing quality measurement and improvement activities, and communicating the performance results to providers and consumers. Important lessons have been learned from the experiences of these organizations—many of which may be useful to those embarking on quality measurement and improvement efforts in workers' compensation programs.

The first lesson learned is that health care quality can be measured. Over the past decade, organizations such as the ones noted above have placed special emphasis on quality measurement and have yielded useful measurement tools. For example, NCQA developed and refined its Health Plan Employer Data and Information Set (HEDIS®) measures which are widely used today to evaluate health plan quality; AHRQ has made important measurement contributions in areas such as consumer satisfaction (through CAHPS®) and hospital quality (through the Healthcare Cost and Utilization Project, HCUP); the National Quality Forum has developed a set of national measures for assessing the quality of care delivered by hospitals, performance measures for nursing facilities, and standards for patient safety; FACCT has developed quality measures for asthma care, been instrumental in the development of the children's CAHPS® health plan survey, and developed a public reporting framework for displaying quality of care information in a consumer friendly fashion; and RAND has established a comprehensive, evidence-based tool to assess the quality of preventive, acute, and chronic health care (i.e., the Quality Assessment Tools) that is usable at multiple levels of the health system. These efforts represent important strides in the measures development area. However, while much has been done and there are signs of improvement, much remains to do, and the process is slow.

A second lesson learned is that there are six key performance dimensions of a health care system, all of which should be measured in order to monitor and improve the quality of care (refer to discussion above in the section “Key Performance Dimensions of a High Quality Health Care System” for more detail).¹

A third lesson learned from quality of care efforts undertaken over the last decade is that because multiple levels within the health care system impact the quality of care provided, measurement needs to happen at all levels.

As an aside, some historical background regarding the level of measurement is informative. Initially, quality measurement and accountability focused on the plan level—primarily in response to the growth of managed care and the HMO being the discrete unit accountable for delivering care to members. Employers, who increasingly shifted greater numbers of their employee and dependent populations into managed care, wanted to understand the quality of care being delivered in these new plan models. Employers also began pushing strongly for more accountability by their health plan partners in response to the rapid increase in health care costs during the late 1980s through the mid-1990s.

Today, although the focus still remains heavily on plan-level measurement and accountability, efforts are expanding to cover the full set of players in the system. These efforts are in response to recognition that variation in care is occurring at the hospital, provider group, practice site, and individual provider levels within the system and that, to improve quality, behavior change is needed at all of these levels.

Moreover, consumers report a desire for performance information about their individual physician or provider (e.g., hospital, nursing home) when making health care choices, and less interest in plan-level comparative data that frequently show little variation in performance scores. By shifting measurement and accountability down to the units that deliver care, the hope is that more dramatic improvements may be achieved than have been observed during the last decade. One significant effort in this area is CMS' Doctors' Office Quality (DOQ) project that seeks to evaluate individual physicians on clinical quality, patient experience, and efficiency measures.⁵² CMS has pilot projects in California, Iowa, and New York to develop and test physician-level performance measures that they intend to implement nationwide in

the next five years. Additionally, CMS is actively engaged in the development and pilot test of the hospital CAHPS® survey (“H-CAHPS®”) with the expectation that it will be used by all Medicare-contracting hospital in the future to assess consumer experience and satisfaction with hospital care.

A new focus in the quality improvement area—which underscores efforts to drill measurement and accountability down to the provider level—is the development of financial and non-financial incentives that are viewed as helping to make the business case for delivering high quality care. (Historically, providers have been paid the same regardless of the quality of care they provide.) Many initiatives are currently underway at various levels (e.g., physician, medical group, hospital), some of which include a pay-for-performance component aimed at providing financial incentives to improve quality. For example, Lumetra, the largest federally designated Quality Improvement Organization (QIO), is launching a pilot of the CMS DOQ project in California.⁵³ As noted above, the DOQ project aims to develop a model for measurement and improvement of quality of care for chronic and preventive services at the individual physician and medical office levels; the Bay Area pilot will test incentives for quality improvement such as Continuing Medical Education (CME) credits, public recognition, and reduction in medical liability risk and premiums.⁵⁴ CMS is also spearheading an incentive demonstration program linking quality and information technology (IT) investment that will provide technical assistance to physician practices in four states to help them build their IT infrastructure to better deliver and measure quality care.⁵² Additionally, CMS recently announced the first Medicare pay-for-performance initiative for physicians; this demonstration project will involve 10 large medical groups that will receive additional Medicare payments for improving patient care while keeping Medicare costs down.⁵²

Other, non-CMS examples of efforts to encourage improvement in the quality of care at the provider level by paying-for-performance include Blue Cross of California’s Physician Quality Incentive Program (PQIP) and the Integrated Healthcare Association (IHA) Pay-for-Performance Initiative.⁵⁵ These two, California-based efforts are providing financial incentives to physicians and physician groups (respectively) based on their performance on a set of quality measures; non-financial incentives (such as comparative performance scores of peers and public report cards) are also being used to change practice behavior.

With regard to hospitals, CMS has several pay-for-performance efforts underway. For example, CMS has partnered with Premier hospitals in a demonstration project to assess whether financial incentives for quality performance will raise quality scores for patients with AMI, CABG, CHF, pneumonia, and hip or knee replacement.⁵² Also, with the passage of the Medicare Modernization Act (MMA) of 2003, hospitals that do not choose to submit data on 10 quality measures for public reporting under the Annual Payment Update provision will receive a 0.4% decrease in Medicare payments.⁵²

The development of measures that can be applied at levels more specific than the health plan (e.g., hospital, medical group, individual physician) may be important to efforts to evaluate the quality of care in the workers’ compensation system. At this early stage, there is no clear evidence demonstrating the success of these relatively new measurement strategies. However, eventually—if shown that they can lead to improvements in the quality of care—measurement at these “drill-down” levels coupled with incentives (such as provider tiering, differential pay, and public reporting) may be useful mechanisms to stimulate improvements in the delivery of care to injured workers. Those involved in the structuring of

workers' compensation programs in California should monitor the success of these emerging models to see if they offer promise to the workers' compensation program.

A fourth lesson learned is that, while quality—as a dimension of care that should be monitored—is valued by “believers,” mechanisms such as mandates, rewards, and/or penalties may be necessary to encourage skeptics to participate in measurement and reporting efforts. The public release of performance results is one of the types of incentives being used to drive quality improvement. While public reporting remains controversial and is often not favored by providers of care, evidence suggests that such reporting may yield positive change. For example, a recent study found that making hospital performance results public stimulated greater investment in quality improvement activities among hospitals that publicly reported performance data as compared to hospitals that either received confidential internal reports comparing their performance to their peers or that did not receive any report card information.⁵⁶

Fifth, quality measurement efforts frequently necessitate the involvement of multiple stakeholders; however, finding ways to get these players to work effectively together can be challenging and typically requires the parties involved to compromise. Two organizations illustrate collaborations among multiple stakeholders that have led to advancements in the quality of care agenda in the general health care world and are likely required for success in the workers' compensation arena as well. First, at the national level, NCQA has undertaken significant quality measurement and accountability efforts and, through its accreditation program, has succeeded in raising national awareness of the importance of health care quality.^{2,57} More recently, NCQA has partnered with leading associations (American Heart Association, American Stroke Association, and American Diabetes Association) to align measures, obtain endorsement, and establish a program that allows physicians to voluntarily submit performance data on diabetes care and cardiovascular stroke care as part of its Physician Recognition Programs. This program is designed to publicly and nationally recognize and financially reward those health care providers who are delivering high quality care.

NCQA's model is a collaborative process of the key stakeholders—purchasers of health care (both public and private), plans, providers, and consumers. Its leverage for making quality measurement and public accountability occur stems from having purchasers at the table who require, as part of their contracting process, that health plans with which they do business undergo NCQA accreditation. NCQA wants to ensure that all stakeholders are involved in defining the priorities for quality measurement, the levels of the system at which measurement should occur, and the way in which the results should be scored and made public. The development of NCQA's various quality measurement programs has been iterative, starting with a small number of clinical quality measures and operating standards for the delivery of high quality care. Over time, NCQA has continued to add to its measure set and has incorporated its clinical and patient experience measures into its accreditation program. Two keys to NCQA's success have been: 1) Getting a national body, representative of the key stakeholders, to use a consensus process to develop national, scientifically rigorous and evidence-based standards for quality of care; and very significantly, 2) The support of purchasers who have been willing to require participation in NCQA accreditation and quality measurement as a condition of offering a plan to employees (i.e., a market mandate, in effect).

A second illustration of stakeholder collaboration for quality measurement and reporting is the California Cooperative Healthcare Reporting Initiative (CCHRI). CCHRI is a unique collaborative of health plans, providers, and purchasers dedicated to the standardized measurement and public reporting of quality indicators (CCHRI 2002 Report on Quality, 2002). Each year, CCHRI engages in the joint collection of CAHPS® and HEDIS® data at the plan level; conducts a Provider Access Audit Survey and the California Consumer Assessment Survey (CAS) which reports on patient experience with getting care from more than 160 medical groups statewide; and operates the Diabetic Continuous Quality Improvement project, a collaborative of plans and provider groups that partner to improve care for diabetics. Like NCQA, CCHRI has been successful at bringing key players together and leveraging their collective interests to achieve the larger goals of quality measurement and accountability through public reporting of performance results. CCHRI works to minimize the burden of data collection through coordination across plans and medical groups for HEDIS®, standardizing the data collection process, moving health plans away from chart review and towards the collection of electronic administrative data, working with the system on collaborative quality improvement efforts, and drilling down measurement beyond the health plan level. As with NCQA, CCHRI's experience has been iterative—starting with a small number of measures and only measuring at the plan level, and now undertaking a broad range of quality measurement, improvement, and reporting activities at several levels of the health system.

The experiences of NCQA and CCHRI offer important insights and lessons for broadening quality measurement and accountability in the workers' compensation program. For both NCQA and CCHRI, success has involved organizing and convening the various stakeholders to establish common agreement on the problem(s), to develop measures, and to reach consensus regarding how the data would be reported publicly.

The Business Case for Quality

Although there have been improvements in quality of care in selected clinical areas, improvement has generally been slow and narrowly focused. The IOM report called for numerous actions to transform the health care system, such as investment in the information infrastructure and aligning financial incentives, so as to more rapidly produce gains in quality.¹ The IOM specifically identified creating a business case for quality as a potentially important driver of quality improvement. A business case for quality means that the entity that makes an investment to achieve improved results (e.g., establishing an electronic registry of patients with chronic conditions) is the same entity that reaps some or all of the rewards of that improvement (i.e., the organization making the investment sees a financial return on its investment). At present, the health care system generally pays providers equally, regardless of the quality of care they provide—thus providing no business case for making investments to improve care.

As noted earlier, currently there are a number of demonstration projects underway in both the private and public sectors that are testing the application of a range of incentives (e.g., financial, public reporting, tiering) as a means to improve quality at the physician group, physician, and hospital levels.⁵⁵ At this stage, it is unknown whether these programs will have the desired impact on quality; however, evaluations are being conducted that will provide an opportunity to learn whether incentives (i.e., creating a business case) are an effective means for driving quality improvements. It will be important

for the workers' compensation stakeholders to monitor these efforts and determine whether they hold promise for application in the workers compensation arena.

In workers' compensation, the business case for quality may actually be easier to make. This is because the employer not only pays for the healthcare of injured workers, but also indemnity costs for time out of work and permanent disability. One of the goals of occupational healthcare is to facilitate a timely and successful return to work, and therefore improved quality, even when it results in higher healthcare costs, should reduce indemnity costs as well as additional costs associated with lost productivity and the increased likelihood of the loss of a valuable employee. In light of these observations, a valuable area for future research is to examine the business case for improved quality of healthcare in the workers' compensation system.

ISSUES IN MEASURING AND IMPROVING HEALTH CARE QUALITY

To successfully measure and improve the quality of health care, it is useful to be aware of several important issues and to address them, if possible. In this section, we outline several of these issues and note special considerations for the workers' compensation system.

Complex and Fragmented Health Care System

As is well-known, the U.S. health care system is highly complex and fragmented.⁵⁸ The workers' compensation system, a sub-system within the U.S. health care system whereby the employer typically pays the entire cost of care, is no exception.⁵⁹ Each of the fifty states and the District of Columbia legislates its own workers' compensation program; as such there are no national standards.⁵⁹ Additionally, there are complexities within each program. For example, in California, there are varying rules regarding where an employee injured on-the-job may seek care that depend on whether the employer has established a medical network and on whether the employee has pre-designated a physician (i.e., prior to the work injury).⁶⁰ Potentially, an injured worker may see many different providers in many different types of health facilities, making it difficult to monitor and improve quality of care.

Diverse Viewpoints of Stakeholders

The diverse viewpoints of stakeholders must be taken into account when aiming to measure and improve the quality of care.⁶¹ Purchasers generally assess quality by how well premium dollars are spent for the given covered lives; patients typically judge quality in terms of how well their individual needs are met; and physicians attempt to walk a fine line among the many opposing demands of cost-controlling mechanisms, their own clinical judgment, and patient demands. Finding feasible ways to address each player's interests is often a delicate balancing act and requires compromise.

In the workers' compensation system, there is significant distrust among the different players.^{36,62} In a system where the employer pays the entire cost of medical care (i.e., no co-payments or deductibles for the injured worker) as well as disability benefits (i.e., at least partial wage compensation for time lost due to injury), the major stakeholders often view the situation differently and may have conflicting goals. Focus groups conducted in California have found that employers may be concerned about misuse of

benefits, especially since disability pay is not taxed and thus a worker could earn more on disability leave than by working.³⁶ Employers also worry about the overuse of services that physicians may encourage given that workers' compensation billing operates on a fee-for-services basis in the majority of cases.⁶³ As found in several studies, workers also are sensitive to and resentful of these suspicions, fearing that their injury/work limitations could become an excuse to demote or fire them.⁶⁴ Frequently, workers also distrust the "company physicians" to whom they are typically sent by the employer or insurer; one of the main concerns they voiced was that the physician (who relies on the employer/insurer for referrals) could be more focused on getting them back on the job than on fully treating the work injury/illness.⁶² At the same time, the physicians in this California focus group reported being frustrated by the inability to establish trusting relationships with some patients and by the intense legal component of providing care to injured/ill workers. In such an environment, measurement and improvement of health care quality is not only an empirical challenge, it is also a highly political task. An important first step for those wishing to measure and improve quality in the workers' compensation system is to get stakeholders to jointly define the key dimensions of quality in which they are interested. In this way, measuring and improving the quality of care for injured workers could begin to be viewed as a shared goal of employers who want workers to get back to work, providers who want to provide top care, and workers who want to get well.

Accountability

In measuring and improving the quality of health care, there is a need to establish accountability (i.e., ownership of the quality problem and responsibility for addressing it).⁶¹ In working to establish accountability, the performance standards expected of individual physicians, medical groups, hospitals, and health plans must be fair (i.e., achievable by that entity) and clearly defined. Of particular note, the process of determining the accountability of individual physicians depends on the given health care system model and involves different trade-offs. For example, in a capitated/managed care model, the primary care "gate keeper" is often held accountable for all care since he/she is the main provider of care. In contrast, in fee-for-service or PPO models where patients have more choice of providers, other means of assigning accountability may be used, such as attaching responsibility to all providers who saw the patient for any reason, or to the provider(s) who saw the patient most frequently. Additionally, the challenge of establishing accountability in quality measurement is intimately tied to the larger, more global challenge of convincing all players that quality problems in the U.S. health care system cannot be attributed solely to individual clinicians or to management concepts such as health maintenance organizations.⁶⁵ While there certainly may be "bad apples" in the pool of physicians or inferior plan designs, the quality problems of the U.S. health care system are systemic—cutting across all types of care, facilities, providers, health insurance, geographic areas, and patient populations; as such, there needs to be accountability at all different levels.^{1,10,11,66}

With regard to the workers' compensation program and accountability, a significant obstacle to quality measurement has been that key players did not demand it. The quality movement in the general U.S. health care system has been spurred on by purchasers—both private and public—asking for it and indeed requiring it as a part of doing business.^{42,67,68, 69} The workers' compensation program needs influential quality champions—most notably those who control payment for care, unions, or perhaps state or federal governments on behalf of workers—to convince all players that quality measurement is important and further, to push for financial penalties if quality measurement and performance objectives are not met.

Explicit and Transparent Criteria

To measure and improve the quality of care, there is a need to establish explicit and transparent criteria. With regard to technical or clinical quality (vs. interpersonal quality or patient experience with care), wherever possible measures should be based on the most current, evidence-based scientific literature.^{1,61} Where studies are not available, professional consensus should be sought. This process of review to construct measurement criteria is labor-intensive, time-consuming, and expensive. Thus, while standards have been developed for many important conditions, there are many more (such as acute problems, rare conditions, or complexities of common conditions) for which there has been no criteria development. Additionally, even when criteria have been developed, they are often presented as clinical practice guidelines rather than in a format that is operationalized for quality measurement—meaning, for example, that vague terms such as “mild” or “severe” have not been translated into specifics, that performance periods have not been precisely defined, and/or that complexities related to patient compliance have not been taken into account.

Linked to establishing explicit clinical criteria is the task of selecting indicators for reporting.⁶¹ Measures cannot simply be explicit and evidence-based, they must also be relevant, scientifically sound (i.e., reliable and valid), comprehensive, feasible to implement, and financially achievable—not a simple balance to reach or to maintain. To comprehensively assess quality of care, measures to assess interpersonal quality or patient experience with the same rigor used to assess clinical quality are also needed.⁷⁰

In the workers’ compensation program, at the most basic level, there is not a clear, generally-accepted definition of quality for workers’ compensation health care or agreement about what the most important issues are.³⁹ Without clear consensus about the end-goal, it is difficult to construct a process for measurement or improvement. There are also no widely usable, standardized quality measures for either clinical care or consumer satisfaction in workers’ compensation programs. The assessment of clinical performance in particular has been stalled by the absence of evidence regarding the efficacy of most treatments and by uncertainties in interpreting existing information given wide variations in the workers’ compensation population;³⁸ thus, the ability to assess the quality of technical care has been somewhat restrained by the weakness of clinical knowledge. However, some in-roads are being made. With funding from the Workers’ Compensation Health Initiative (WCHI), a \$6 million, multi-year program of the Robert Wood Johnson Foundation (RWJF), URAC designed several complementary tools relating to workers’ compensation care provided by managed care organizations (MCOs): a survey of injured workers, a protocol for analyzing claims data, and a tool for auditing medical records for quality of care indicators.⁷¹ However, there are some limitations: URAC’s measures are consensus-based (not evidence-based), have not been validated, and only address care provided by MCOs—significant because only a very small percentage of individuals in workers’ compensation programs are enrolled in managed care.⁶³

Recently, RAND conducted an evaluation of medical treatment guideline sets for injured workers in California for the Commission on Health and Safety and Workers’ Compensation (CHSWC) and the Division of Workers’ Compensation, California Department of Industrial Relations.⁷² The RAND team reviewed existing sets of guidelines that met the following criteria: evidence-based, peer-reviewed, nationally recognized, developed with a multidisciplinary process, reviewed at least every three years,

and cost less than \$500 per individual user. Five sets of guidelines were identified for in-depth study, and a multidisciplinary panel of expert clinicians convened to evaluate the comprehensiveness and validity of guideline content addressing utilization decisions (e.g., appropriateness and quantity of care). The clinical panelists' conclusion was that all five guideline sets were far from ideal and that substantial improvement is desirable. In the interim, RAND recommended using a mix of guidelines from two of the sets: the American College of Occupational and Environmental Medicine's (ACOEM) Occupational Medicine Practice Guidelines, and Clinical Guidelines by the American Academy of Orthopaedic Surgeons (AAOS). For specific, selected topics, in the longer term, RAND recommended that the state address deficient areas such as the development of guidelines in areas that are currently lacking and developing a set of utilization criteria to be used by all payers. Thus, while progress is being made to identify sound measures of clinical quality for the workers' compensation program, much remains to be done; more work is also needed to assess patient experience.

Data Limitations

Those who wish to measure and improve quality of care in the U.S. must face the significant limitations of available information systems.⁶¹ The detailed information needed to assess clinical quality of care, especially at the patient/provider or process level, is often only available in medical records that are very costly to review. Frequently, this lack of accessible, affordable information makes scoring quality measures as well as adjusting for case-mix differences among providers difficult and expensive. Because of this situation, the availability of automated data, such as administrative/claims records, may drive the selection of quality measures and limit the number of measures that can be collected. Such deficiencies of relevant, easily accessible data underscore the need for more advanced medical records systems;¹ for example, it is possible to envision an electronic medical record that would enable clinicians to follow closely their patients' treatment paths and would permit reliable, comprehensive, pertinent, and timely quality assessments to be made.

With regard to information on patients' assessments of quality, the Agency for Healthcare Research and Quality-sponsored Consumer Assessment of Health Plans Study (CAHPS®) has made a significant contribution to generating interest in consumer issues as well as to creating credible measures; however, a need remains for more information and further study in this area to ensure that such data are actually used by consumers to make health care decisions.^{73,74}

If data do exist, another complicating factor may be privacy and confidentiality regulations. For example, the federal Health Insurance Portability and Accountability Act (HIPPA) limits access to personal health information.¹ Additionally, the federal Privacy Act of 1974 precludes the federal government from collecting and releasing identifiable information at the physician level.⁷⁵ There are numerous similar laws at the state level as well. Since many physicians and other health care entities do not want their data exposed publicly, attempts to release them may be challenged in court.

In workers' compensation programs, researchers have limited access to claims data, there is minimal information collected on medical care and functional status in existing databases, there is no national workers' compensation data collection system, and it is not possible to link workers' compensation data to general health information.³⁹ The latter issue is of particular importance because some workers, fearing retribution from their employers, elect to use their regular health care benefits for a work-related injury

rather than being cared for under their workers' compensation plan; when this occurs, work-related injury data are lost in the sea of general health care claims.^{36,63}

Alignment of Financial Incentives

The alignment of financial incentives with the provision of high-quality care is another important consideration when measuring and especially when aiming to improve health care quality.^{61,76} In many instances, the U.S. health care system employs payment mechanisms that may be at odds with the provision of high quality health care. For example, capitation offers providers a fixed payment for providing services to a certain population. While in some cases this inducement to limit care may result in best practices, in other cases a reduction in the provision of services may not be in line with optimal care.⁷⁷ At the opposite extreme, fee-for-service (the payment structure most often used in workers' compensation programs) tends to financially reward providers who provide a high quantity of services, not quality; it sets few limits and thus often leads to overuse. Still another example of a potentially misaligned financial incentive is that reimbursements for interventions or medications may be higher than for potentially more appropriate options (such as consultation regarding lifestyle modification).²

Designing incentives that track well with achieving quality goals is complex.⁷⁶ It requires a better understanding of the optimal combinations of interventions for different conditions as well as an assessment of how the structure of benefits, providers, and payers supports or inhibits the provision of high-quality care.⁶¹ In California, as noted, at least two efforts are currently underway to assess whether offering providers a financial bonus for providing higher quality care leads to an improvement in the quality of care: the Physician Quality and Improvement Program (PQIP) at Blue Cross of California, and the Pay-for-Performance program managed by the Integrated Healthcare Association (IHA).⁵⁵

Regarding workers' compensation, although care disputes are ultimately resolved by judges (not clinicians) in California, physicians are often embroiled in the legal aspects of care because their assessment of injuries is a critical determinant of whether an employee receives workers' compensation benefits.⁷⁸ Ultimately, in this milieu of mistrust, incentives are misaligned. The goal is often not high quality care, but instead the maximization or minimization of care/compensation depending on whether one is (or represents) the employer or employee. Litigation (or the threat of litigation)—not quality—often drives care.⁷⁸ As noted, it has not been established that paying-for-performance will lead to improved quality (i.e., experiments—such as the ones described above—are only now getting underway); those interested to improve care in workers' compensation programs should track the success of these programs. In addition, the workers' compensation community would benefit from experiments or other research to examine the relationship between quality of care and reduced time out of work. If quality care can reduce indemnity costs, the workers' compensation system may already align incentives appropriately.

NEXT STEPS TO IMPROVE QUALITY IN WORKERS' COMPENSATION IN CALIFORNIA

What Has Been Done

With regard to national quality improvement efforts relating to workers' compensation, at the broadest level, the National Institute for Occupational Safety and Health (NIOSH), a division of the Centers for Disease Control and Prevention (CDC), conducts research and makes recommendations for the prevention of work-related disease and injury.⁷⁹ Additionally, through the Department of Labor's Occupational Safety & Health Administration (OSHA), the federal government sets standards that impact the health and safety of workers.⁸⁰ Significantly, as noted above, since 1995 the Robert Wood Johnson Foundation's Workers' Compensation Health Initiative (WCHI) has aimed to improve the quality of medical care for persons suffering job-related injuries and illness by awarding grants to develop and test models of health services delivery, and to conduct applied research regarding the quality of workers' compensation medical programs.³⁹ Through the WCHI, research and/or evaluation projects have been carried out in the following areas: 1) defining quality health care and establishing standards for measurement, 2) disseminating and evaluating treatment guidelines, 3) developing tools to measure satisfaction and outcomes of care, 4) developing tools and methods to improve communication, 5) encouraging and evaluating the implementation of integrated/coordinated benefits programs, and 6) supporting efforts to collect and disseminate needed information.⁸¹ This work has provided useful insight and direction for future efforts. For example, regarding quality measurement, WCHI funding has supported the development of clinical practice guidelines for workers' compensation injuries as well as of URAC's performance indicators for managed care organizations.^{71,82} WCHI projects have also yielded evidence for a number of observations: physicians are receptive to assistance with quality improvement especially if benchmarks are provided; obtaining quality information from workers is critical; case managers are an effective way of ensuring appropriate use of workers' compensation benefits; and training sessions for clinicians may be a useful method of generating interest in and improving quality.⁸¹

In California, significant efforts regarding quality in workers' compensation programs have been made by the state's Division of Workers' Compensation (DWC), many funded by the WCHI. For example, DWC conducted a preliminary assessment of utilization review in California's workers' compensation health care system and found that there is considerable variability in current utilization review practices, including variation in clinical criteria used for review and in the internal appeals process.⁸³ DWC recommended further study of utilization review in California's workers' compensation programs. Additionally, it recommended that in order to avoid cumbersome administrative processes and high transactional costs, regulations and statute governing utilization review in workers' compensation should be more consistent with those in other health care sectors in the state. Utilization review data collection methods are important because the data gathered for such review may form the foundation of a database that could be used for quality measurement.

With support from the WCHI, DWC also explored the feasibility of establishing a California Work Injury Resource Center to educate the community on quality of care for injured workers, to convene quality of care researchers, and to work with stakeholders regarding quality of care issues.⁸⁴ Thus far, the Center has assisted in creating a greater awareness of quality problems in workers' compensation and in taking

steps to measure, report, and improve quality. It also held a workshop and twice convened an Ad Hoc Work Group on Quality Improvement to address quality issues, including identifying steps to develop standardized quality indicators.

Additionally, DWC (with assistance from the University of California at Berkeley's Survey Research Center) designed a standardized questionnaire to assess patient satisfaction with care as well as patients' perceptions of pain and functional outcomes. This survey was then used in a study of 800 workers. Importantly, this study found strong and consistent evidence of dissatisfaction, underscoring the need for quality monitoring and improvement efforts.³³ DWC also conducted a series of focus groups with key players in workers' compensation (i.e., injured workers, employers, physicians, nurse case managers, claims adjusters, attorneys, DWC judges, and information/assistance officers).³⁶ The findings of these focus groups highlight the significant disagreement and lack of trust among the groups. This study is important to future quality improvement planning as it documents the context in which those striving to improve quality must work.

DWC oversees data reporting for workers' compensation managed care organizations as well. These data may be a useful source of information for quality measurement at this stage, given that they are fairly comprehensive and that there are not many such data resources at present.⁸⁵

Another entity in California, the Commission on Health and Safety and Workers' Compensation (CHSWC), a joint labor-management body created by the workers' compensation reform legislation of 1993, has also played an important role regarding health care quality in workers' compensation programs. For example, CHSWC produced a guidebook for workers to help navigate the workers' compensation system.⁸⁶ It has also funded research examining return-to-work issues as well as the impact of legal decisions on medical practice.^{62,78} Additionally, CHSWC has helped to inform the issue of the economics of workers' compensation—which, as noted above, may be linked to quality through the incentives and disincentives that exist for different players to provide high quality care or to seek care through the workers' compensation program.^{87,88,89,90,91} CHSWC has also been involved in the Worker Injury National Survey (WINS) Project, a national effort funded by the Robert Wood Johnson Foundation to better understand how injured workers fare after treatment for their injuries.⁹² A survey that was developed and tested by the WINS team has been administered in Florida and Minnesota; California as well as Texas, West Virginia, and Massachusetts will soon be administering a revised instrument. In addition to the wealth of information being collected regarding injuries and treatment, the WINS project is promising in that it will allow state-to-state comparisons to be made.

Finally, as noted earlier, recently CHSWC and DWC jointly hired RAND to conduct an evaluation of medical treatment guideline sets for injured workers.⁷²

Taken together, these efforts by DWC and CHSWC represent important contributions to quality measurement and improvement in California. They may serve as an important basis for future initiatives to improve the quality of health care in workers' compensation programs in the state.

Next Steps

Given the troubling state of health care quality and the challenges of measurement, what steps may be taken to improve the quality of health care in California's workers' compensation program? First and foremost, there is a need for workers' compensation stakeholders in the state to acknowledge that there is a quality problem in need of addressing.⁶⁷ Convincing stakeholders of this fact and then keeping this issue on their agendas is perhaps the single biggest challenge to quality measurement and improvement in California's workers' compensation programs. The mindset in California concerning workers' compensation needs to be expanded beyond cost to include quality, and the key issues need to be clearly and jointly defined by all stakeholders.

Second, someone—whether it be private or public purchasers, regulators, labor unions, and/or some other entity—must demand that attention be focused on quality in the workers' compensation system. As past experience at both the national and state levels has shown, change instigated from within is highly unlikely; significant quality improvement efforts in health care have historically come from continued outside pressure. Such demand would be most effective if it came from entities with significant leverage. Strongly linked to the need for a demand for improved health care quality is the need for those demanding improvement to hold accountable those delivering the care. Quality measurement and improvement are not likely to happen unless responsibilities for these tasks are clearly delineated and there are repercussions for not meeting goals.⁶⁷ Aligning payment incentives (e.g., rewarding financially those who provide better care) is currently being explored. The “jury is still out” regarding whether this will prove to be a useful mechanism to improve quality; those involved in workers' compensation programs should track these experiments.

Third, to improve the quality of health care in California's workers' compensation program, stakeholders must move past the distrust they have of one another to recognize that improving the quality of health care in the state's workers' compensation program will benefit each of them. Additionally, an effort must be made to view quality problems primarily as the result of systemic failures, as opposed to the failures of individual physicians. Physicians working within the workers' compensation system cannot be the only ones held accountable for quality deficiencies. Instead, all levels of the system need to bear responsibility and partnerships (especially between health plans/employers and physicians) need to be forged.^{69,76}

Fourth, funding is needed to carry out the task of measuring and improving quality.⁶⁷ The State of California would be one potential source of funding, and there is also the possibility of pursuing support from the federal government, private foundations, and the private sector.

Fifth, a priority for research should be improving our understanding of the relationship between healthcare quality, return to work, and permanent disability. It is our hypothesis that higher quality care might reduce the amount of time out of work, increase the likelihood that an employee will return to the at-injury employer, and lower the likelihood that the injury will result in permanent disability. Given that half of workers' compensation costs are indemnity for time out of work and permanent disability, this provides a promising vehicle to make the business case for improved quality of care.

Sixth, as mentioned in the introduction, a commitment to injury prevention is needed. The topic of injury prevention is separate from the issue of tracking and improving the quality of care provided by the health care system, and is out of the scope of this paper. However, any broad effort to improve the health of workers should not only focus on the provision of appropriate care after injury; the ultimate goal should be to prevent injuries from occurring in the first place.

It is recognized that much of what is outlined above is difficult to achieve. Acknowledging the challenges but electing to assume the positive scenario that they can be overcome, we offer some suggestions here regarding how to advance the effort of measuring and improving workers' compensation quality in California.

Once the quality problem has been defined and funding has been secured, it is recommended that a collaborative working group be formed and charged with addressing quality issues in workers' compensation programs in the state. Ideally this group would be comprised of clinicians familiar with work-related injuries and illnesses in the state, researchers well-versed in quality measurement, employers, insurers, legal experts, representatives from the state's DWC and CHSWC, and workers. Regarding the latter, it is vitally important that patients be included in and listened to by the working group. According to the IOM, one of the key components of an effective health care system is that it be patient-centered. As such patients should be involved at all stages of the quality improvement effort—and especially in the selection of measures and how to report them. Of note, at this juncture, lessons from DWC's experiences with its Ad Hoc Work Group on Quality Improvement may be useful. Ideally, this group would be the beginnings of a state-wide workers' compensation quality oversight board which would oversee quality measurement and reporting for California's workers' compensation programs on a consistent basis.⁶⁷ Given that there is no such organization at the federal level, it seems especially important that there be one at the state level.

Concerning the direction of the working group, as noted previously some research has been conducted in California regarding patient satisfaction. Approximately one quarter of a random sample of 800 injured California workers reported that they were dissatisfied with their overall care and choice of providers.³³ Additional focus groups conducted in the state have also documented extreme patient dissatisfaction with care.^{36,62} This body of research serves the important function of documenting one significant problem with the workers' compensation program in the state: patient dissatisfaction. What is now needed to advance the quality cause is documentation and baseline measurements of the clinical care provided through workers' compensation programs. In particular, external assessments of clinical quality indicators (i.e., those comparing information across several entities, rather than internally) are needed to understand variations in care and to assist in improving care where unfounded variations exist.² It is only by measuring the quality of care that the nature and extent of the problem can be known and effective improvement strategies can be developed and implemented. Demonstrating empirically that there are quality problems also is helpful in convincing skeptics.

Thus, it is suggested that the first job of the working group be the selection the health conditions or problems to be evaluated. There are several criteria useful to consider in this task.² First, both to have the greatest impact and to ensure adequate statistical power, the condition selected should be highly prevalent or have a significant effect on the mortality and morbidity of the population. The working

group should use the current epidemiology of injury in California to guide the selection of measures and to develop new measures that focus on injury prevention where possible; the recently published RAND report is also a useful resource.⁷² Some of the most significant improvements in the health of California's workers can be made by identifying the most common and serious injuries (i.e., the red flags) and then understanding what precedes and follows them. Mapping out the flow of workers through pathways would show opportunities for improvement and is a useful way of using evidence to assess where the greatest opportunities for improvement lie. It may be that separate analyses are needed for different industries and/or different work place environments. Second, there should be reasonable scientific evidence that efficacious or effective interventions exist to prevent a disease from developing, to identify and treat the disease at an early stage, or to reduce impairment, disability, and suffering associated with having an illness. Third, improving the quality of the service delivery should improve the population's health, not produce inconsequential health improvements. Fourth, with limited resources for health care, the recommended interventions should be cost-effective. Fifth, the recommended interventions should be able to be significantly influenced by health plans or providers; it is not appropriate to hold plans and providers accountable for interventions (such as seat belt use) that are beyond their control. In keeping with the successful tactics used by other quality measurement organizations such as NCQA, it is also recommended that the working group "start small" by focusing on only a few conditions at first.

At this juncture, it would also be beneficial to identify any existing sources of data that may be helpful in beginning to understand workers' compensation quality problems in the state, in defining the most important areas for evaluation, and perhaps in beginning to measure these areas if the data permit. In past quality improvement efforts, effective and accurate systems for tracking care have proven to be a crucial component of success.⁶⁹ Data are especially important at the beginning of quality improvement efforts when it is useful to establish baseline measurements. One useful source of information will be the data collected through the WINS Project with which the CHSWC is currently involved. As noted previously, California-specific data collected through WINS will include information on how injured workers fare after treatment for their injuries; given that the survey will be conducted in several states, state-to-state comparisons will also be possible.⁹²

Other potentially useful data are those collected by the state's DWC as part of a legislative mandate to evaluate medical and related health care services provided to injured workers in managed care organizations (called "health care organizations" or HCOs by the state).^{63,85} This already-existing database contains enrollment, cost, and care information; it includes worker demographics, outcomes, principal diagnosis, utilization, provider(s), and costs. As such, it may be a good starting place for documenting current care and identifying problem areas. Additionally, the state's managed care efforts in workers' compensation could serve as a laboratory to test quality measurement ideas on a smaller scale.⁶³ Currently 500,000 out of the 14 million workers in California are enrolled in a HCO.⁶³

Additional sources of potentially useful data include the Industry Claims Information System (ICS) constructed by the California Workers' Compensation Institute (CWCI), and a similar database from the Workers' Compensation Research Institute (WCRI).⁹³ These data may be useful as they contain information regarding workers' compensation-related care provided in the fee-for-service system.

Once a limited number of the most important workers' compensation conditions in California are identified, specific clinical performance measures should be drafted based upon the clinical evidence available and expert consensus as needed. One approach advocated by RAND involves reviewing the literature, developing a list of indications, convening a panel to select indications, rating the indications, and ultimately evaluating the appropriateness of interventions.^{2,72} An example of three clinical quality indicators arrived at through this method are the following related to low back pain: 1) For patients presenting with acute low back pain, the physical exam should include neurologic screening; 2) For patients presenting with acute low back pain, the physical exam should include straight leg raising; and 3) Prolonged bed rest (>4 days) should NOT be recommended for patients with acute low back pain.⁹⁴ The strengths of indicators like these for low back pain are that they are evidence-based, identify the criteria clearly, and specify timeframes when applicable. While some of the information needed to score these indicators would likely need to be obtained from medical records (a potential limitation due to cost and access), in general they are a good example of sound, useful, and usable measures. The development of such measures, followed by the use of them to evaluate care provided, is the end goal of the measurement process described above.

As it is not necessary to duplicate efforts, the team should draw upon past measurement efforts in the field of workers' compensation for possible direction. Existing clinical practice guidelines that focus on conditions specific to workers' compensation are a useful starting place.⁷² This said, it is important to note, as the recent RAND report concluded, that there are significant deficiencies with current guidelines.⁷² For example, many existing guidelines in the workers' compensation field are consensus-based, not evidence-based, largely due to the fact that limited evidence exists. This paucity of evidence begs for more research. The working group may want to devote energy to seeking funding for research that could inform clinical action in workers' compensation health care that is based on fact, not speculation.

At this stage, it is also important to obtain feedback from stakeholders and build consensus through a transparent process and open dialogue about the proposed measures. Communication is fundamental to keeping stakeholders at the table and supportive of chosen paths.

As measures are being drafted, the group should also focus on the feasibility of obtaining data that would permit the scoring of the indicators. While ultimately the data should not drive the analysis, starting with measures that have a strong likelihood of being able to be evaluated is preferred at the early stages of the quality measurement process. Some possible data sources were discussed previously. These sources may prove useful in scoring some clinical measures; however, given that the information in them was not collected specifically for this purpose, crucial information is likely to be lacking. Another possible avenue is to use claims data to assess quality; however, like the data sources mentioned, it may also not be suitable for quality of care assessment. Medical chart reviews are another, albeit significantly more expensive, option. Ultimately, assuming a strong commitment to improving the quality of care for California's workers, it will likely be necessary to collect data that is specifically intended to measure clinical care and patient satisfaction. Ideally, such information would be collected statewide at certain intervals so that the quality of care could be assessed over time. In the short-term, however, the working group must find creative ways to obtain and use data that is adequate to score enough indicators to give

an initial picture of the quality of workers' compensation care in California. This picture will then inform future steps that the working group could take to address quality deficiencies.

From a bigger picture perspective, to truly move the quality effort forward in the area of workers' compensation, legislation may also be needed in California. For example, statewide minimum quality standards could be set and required of all entities providing workers' compensation care. State regulations could require all entities providing workers' compensation care to submit information specific to workers' compensation care at certain intervals, much in the same way that California's Office of Statewide Health Planning and Development (OSHPD) (a department of California's Health and Human Services Agency) currently requires hospitals, nursing homes, clinics, and home health agencies to submit data. Alternatively or additionally, with NCQA as a model, an independent accrediting organization (such as URAC) could be useful in making quality an important issue to health care organizations and in encouraging purchasers to demand higher quality. Ultimately, some market force is needed to demand measurement and improvement.

Clearly, the steps outlined above represent a "tall order." It is not possible to make them quickly. Rather, the movement towards improving the quality of health care in California's workers' compensation program will be slow and must be deliberate, just as it has been in the nation as whole. Quality measurement has and will continue to be challenging—presenting both empirical and political challenges. Not trying to improve quality, however, is not acceptable, given the known quality deficiencies in this country and the evidence that important improvements can be made that ameliorate care, save lives, and ultimately reduce the burden of injury and disease in both human and financial terms. In 2003, the first National Quality Report was required by the U.S. Congress and released to the public.¹ The significant effort to produce this report—led by AHRQ with collaboration from the National Center for Health Statistics and the IOM, and drawing upon existing measurements developed by NCQA, JCAHO, and other organizations—signals a substantial commitment on the part of the federal government to identify quality deficiencies and highlight areas in need of improvement. Workers' compensation programs—which suffer from many of the same quality problems as the nation's health care system as a whole—should strive to emulate this national commitment by actively engaging in quality measurement and improvement; workers' compensation programs must not remain distant from such quality improvement efforts.

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Access to Medical Care for Work-Related Injuries and Illnesses: Why Comprehensive Insurance Coverage is Not Enough to Assure Timely and Appropriate Care

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Workers' compensation (WC) insurance is designed to ensure unhindered access to needed medical care for people suffering occupational injuries and illnesses. California's Labor Code Section 4600(a) states that medical care that is "reasonably required to cure or relieve the injured worker from the effects of his or her injury shall be provided by the employer." This article explores some of the issues that workers face in actually obtaining that care. Issues of access to medical care in workers' compensation are compared to access to general medical services for nonoccupational conditions, and some distinctive aspects of obtaining WC care will be highlighted.

Access to timely and appropriate medical care is widely perceived to be a major problem in the United States. The predominant cause of this problem, according to many authorities, is the lack of health insurance for large segments of the population (Bodenheimer and Grumbach, 1998; Millman, 1993; Berk et al., 1995). The ranks of the uninsured have continued to swell during the past decade. As of 2001, about 41 million Americans were without basic health insurance (U.S. Census Bureau, 2003). In addition, the rising cost of insurance has made it difficult for many low-income families to afford private health insurance and, partly as a result, enrollment in Medicaid and other government assistance programs has soared in recent years (Ellis et al., 2000). Over 40 million people in the United States were covered by Medicaid in 1998 and an additional 4.6 million children were covered by State Children's Health Insurance Programs as of 2001 (Toner, 2003; Child Welfare League, 2003). Even for those fortunate enough to have health insurance coverage, recent trends towards increasing premiums, co-payments, deductibles, and other forms of cost-sharing have increased the difficulty many individuals face in securing appropriate medical care for themselves and their families.

By contrast, the medical care benefits available to injured workers under state workers' compensation (WC) insurance systems have generally remained intact during the past thirty years. These benefits include full payment of the insurance premium by the employer, with no copayments or cost-sharing by individual workers. State WC laws typically require employers to maintain coverage for medical care of injured workers, and, as a result, virtually all American workers are covered by WC plans. The most recent estimates are that 98% of employees enjoy this benefit (Thompson et al., 2002). Workers' compensation plans usually provide coverage for all services deemed to be medically necessary for care of work-related conditions, including diagnostic and therapeutic care, as well as corresponding therapy and rehabilitation to facilitate the workers' return to job functions.

Thus, on the surface, it may appear that the nearly universal and comprehensive medical care coverage afforded to injured workers through workers' compensation insurance makes them immune from the

type of financial barriers experienced by people seeking general (non-WC) medical care who lack health insurance coverage or have health insurance plans requiring substantial personal cost-sharing. Indeed, evidence suggests that the structural characteristics of the American workers' compensation system generally have been effective in providing access to needed medical care for most injured workers. At the same time, it would be wrong to conclude that significant problems in accessing care do not exist for many workers suffering job-related injuries and illnesses. There is mounting evidence to suggest that many injured workers face substantial barriers in accessing appropriate and timely care despite the basic financial protection afforded under WC insurance (Dembe, 2001). For example, a recent study of injured workers in California found that 13.3% of injured workers reported "some or a lot of trouble getting medical care" when they were first injured (Rudolph et al., 2002). In this article, we will describe the kinds of access problems that commonly arise for injured workers seeking care for occupational injuries and illnesses, and offer recommendations for addressing those problems.

WHAT IS "ACCESS TO CARE"?

Before examining the special access-to-care difficulties in workers' compensation, it will be useful to consider the prevailing viewpoints about what constitutes appropriate access to medical care. Substantial progress has been made in recent years in clarifying this issue, in collecting empirical evidence about the factors determining successful access to care, and identifying the major access problems experienced by the general population.

Several early models for understanding "access to care" were developed in the 1970s and 1980s, prompted by growing concerns then about the availability of medical services. One classic definition for "access to care" was provided by Ron Anderson in 1983, who described access-to-care as "entry of a given population group to the health care delivery system" (Anderson et al., 1983). He believed that access to care is influenced strongly by the structure of the health care system, especially by provisions for financing, organizing, and staffing the delivery of care. One measure of success in accessing care, according to this view, is the actual utilization of medical services by patients—the delivery of such services indicating that entry to the system has been successfully attained. Anderson also recognized that structural characteristics and service utilization were not the only factors determining whether a patient's access to care is adequate. Together with his colleague, Lu Ann Aday, Anderson developed a conceptual framework for understanding "access-to-care" that reflected the need for a health delivery system to match utilization of services with actual patient needs (Aday and Anderson, 1974; Anderson and Aday, 1978; Aday and Anderson, 1981). According to this model, the key measure of access is not merely the utilization of medical services, but whether the services obtained are medically appropriate and perceived as useful by patients (see Figure 1).

Aday and Anderson's expanded conception of medical care access reflected a growing appreciation by medical authorities of the need to ensure that the medical care afforded to patients is of acceptable quality and produces good medical outcomes. During the 1990s, additional advances were made in specifying standards for defining high-quality care and establishing techniques for quality measurement (Donaldson, 1999; President's Advisory Commission, 1998). Conceptions of access-to-care continued to evolve correspondingly. For example, in 1994, Joel Weissman and Arnold Epstein of Harvard University defined access-to-care as: "the attainment of timely, sufficient, and appropriate health care of adequate

quality such that health outcomes are maximized” (Weissman and Epstein, 1994). In their view, the adequacy of patients’ attempts to access care cannot be evaluated without considering whether the care received is appropriate and efficacious, responsive to individual circumstances, perceived to be beneficial, and associated with desirable outcomes (see Figure 2).

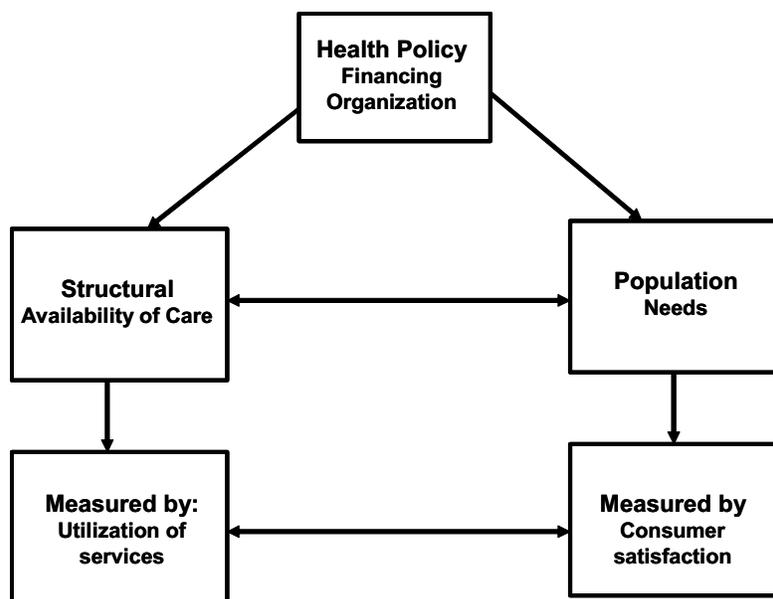


Figure 1— Aday and Anderson (1981) Model of Health Care Access

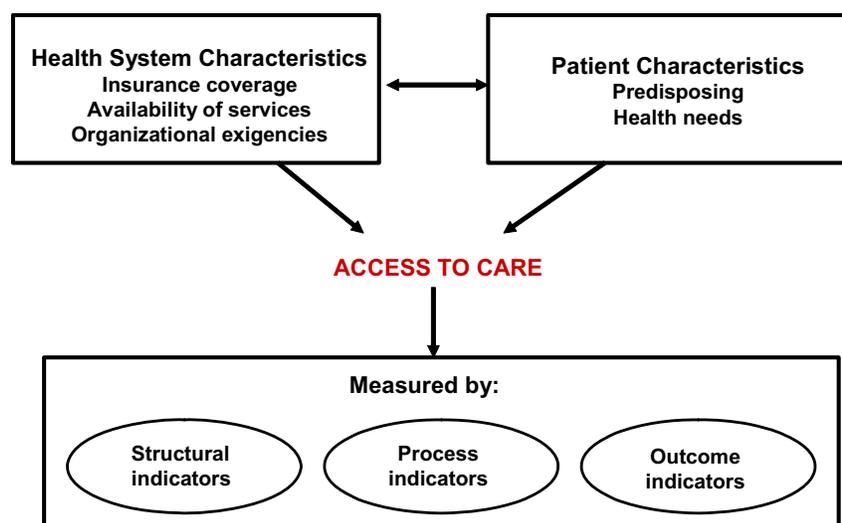


Figure 2— Weissman and Epstein (1994) Model of Health Care Access

More recently, health policy experts have begun to conceptualize access-to-care as a multistage process in which patients potentially face a sequence of increasingly complex interactions with the delivery system

in their efforts to secure effective and appropriate care. Arlene Bierman et al., in 1998, developed a model of access-to-care that categorizes this process into three components termed “primary,” “secondary,” and “tertiary” access (Bierman et al., 1998). Figure 3 illustrates this model.

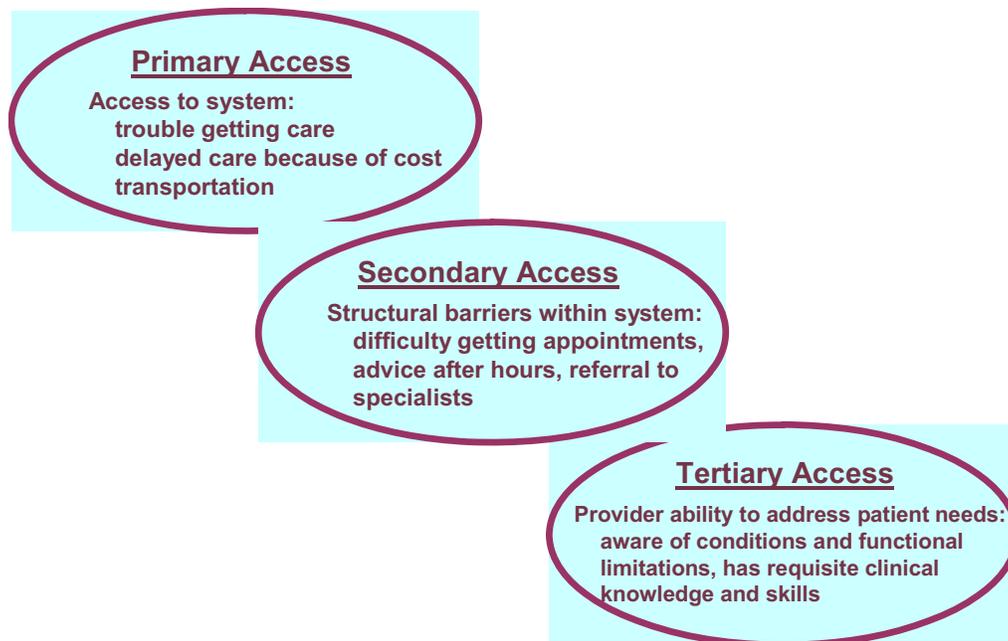


Figure 3—Bierman et al. (1998) Model of Health Care Access

Primary access issues are categorized as those that involve patients’ attempts to secure initial entry into the system, which primarily is a function of insurance, financing, availability of primary care providers, and other basic requirements. Secondary access involves barriers to care that arise once basic entry to the health system has been achieved. Typical secondary access concerns include difficulties in getting appointments, referral to specialists, delays in obtaining authorization for care, obtaining after-hours care, and similar structural obstacles existing within a particular care system. Tertiary access pertains to issues related to securing appropriate and efficacious care once the secondary access issues have been resolved. Examples of tertiary access problems include lack of appropriate skills among treating providers, inadequate communications between patient and provider, inability of providers to assess patient needs properly, and receiving care that is not evidence-based or appropriate for the patient’s condition. Bierman’s access model highlights the non-financial barriers to accessing high-quality care and the sequencing of obstacles in accessing care that are faced by many patients.

Access Issues in General Medical Care

Numerous recent studies of the general population seeking care for nonwork-related conditions have documented the scope and extent of the access problems depicted in these conceptual models (Berk et al., 1995; Committee on the Consequences of Uninsurance, 1998, 2001, 2002; Haley and Zuckerman, 2000; Bodenheimer and Grumbach, 1998; Henry J. Kaiser Family Foundation, 2000; Millman, 1993). Most

authorities still believe that lack of insurance and under-insurance constitute the major barriers to accessing appropriate medical care for Americans. For example, in establishing “improving access to quality health services” as a key national goal in *Healthy People 2010*, the U.S. Department of Health and Human Services indicated that “increasing the proportion of persons with health insurance” is a critical strategy for achieving better access to care, noting: “Access to health services—including preventive care, primary care, and tertiary care—often depends on whether a person has health insurance” (U.S. Department of Health and Human Services 2002). There is extensive evidence documenting that individuals without basic health insurance experience inferior access to basic health services, have worse health status, and suffer unfavorable health outcomes. As summarized in *Healthy People 2010*:

Uninsured people are less than half as likely as people with health insurance to have a primary care provider; to have received appropriate preventive care, such as recent mammograms or Pap tests; or to have had any recent medical visits. Lack of insurance also affects access to care for relatively serious medical conditions. Evidence suggests that lack of insurance over an extended period significantly increases the risk of premature death and that death rates among hospitalized patients without health insurance are significantly higher than among patients with insurance (U.S. Department of Health and Human Services, 2002).

Similar findings were contained in a 2002 report by the Institute of Medicine (IOM), which examined more than 130 research studies investigating whether health insurance status affects health outcomes (Committee on the Consequences of Uninsurance, 2002). The IOM report concluded that “Americans who do not have health insurance are at risk for poorer health because of their lack of insurance coverage.” Specific findings in the IOM report included: 1) uninsured adults who lose insurance temporarily (for one to four years) are more likely to have diminished health status than those who remain continuously insured; 2) those without health insurance face about a 25 percent higher risk of premature death than those with insurance, resulting in an estimated 18,000 premature deaths annually; and 3) uninsured adults are much less likely than adults with any kind of health insurance to receive recommended screening and preventive services.

While the absence of adequate health insurance is recognized to be a key barrier to accessing high-quality medical care, there is also a growing awareness among health researchers and policy makers that obtaining insurance coverage is not by itself sufficient to guarantee access to appropriate care (Ayanian et al., 2000; Zuvekas and Weinrek, 1999). Several recent studies have documented other serious barriers to accessing care that frequently arise even for those who have been able to secure basic coverage. According to a report from the Center for Studying Health System Change, these barriers include: getting timely physician and clinic appointments; having medical providers accept their health insurance; and getting their health insurer to pay for services (Strunk and Cunningham, 2002). In another study, fewer than half of all patients reported receiving an appointment at a clinic or doctor’s office as soon as they wanted (AHRQ, 2001). Additional cost barriers for insured patients, including out-of-pocket expenditures and copayments, also have been cited frequently as a significant impediment to accessing needed medical services (Halfon et al., 1995; Weinick et al., 1996). Several studies have documented that access problems affect ethnic and racial minorities and low-income individuals more acutely, even after accounting for differences in insurance coverage among these groups (Hargraves et al., 2001; Committee on the Consequences of Uninsurance, 1998). Non-insurance considerations that have been shown to

create inferior access to care for minority groups include language and cultural accommodation deficiencies within care systems, problems in obtaining transportation to care sites, not having a usual source of care, and disparities in physician practices for providing care to these patients.

Accessing Medical Care for Work Injuries under Workers' Compensation

Workers' compensation insurance is generally paid for entirely by employers, and covers most of the direct medical care costs for injured workers. This form of insurance helps to minimize many of the financial barriers to primary access discussed above. However, other features of state workers' compensation systems create special access-to-care problems that do not normally exist in the general health care setting. Table 1 summarizes some of the potential barriers to primary, secondary, and tertiary access in workers' compensation and general health care, noting barriers that are especially characteristic in each system. Here is a summary of some of the chief barriers to access experienced by injured workers:

Table 1: Potential Barriers to Accessing Medical Care

	General Medical Care	Workers' Compensation Medical Care
Primary Access (blocked entry to the system)	Lack of insurance, under-insurance* Coverage and eligibility restrictions Insufficient number, type of providers Inadequate location of providers	Employer doesn't carry WC insurance** Coverage and eligibility restrictions Insufficient number, type of providers Inadequate location of providers Need to prove occupational causation** Insurer denials & group health exclusions** Employer suppression of reporting** Inadequate knowledge about WC filing**
Secondary Access (structural barriers within the system)	Limitations on services covered* Excessive premiums, co-pays, cost-sharing* Limitations on choice of provider Aggressive utilization review Inability to see specialists Delays in getting appointments	Limitations on choice of provider Low WC fee schedules in some states** Aggressive utilization review Inability to see specialists Out-of-pocket expenses (prescription drugs) Delays in getting appointments Lack of rehabilitation and therapy services** Medical-legal exigencies (e.g., IMEs)**
Tertiary Access (failure to address patient needs)	Inadequate knowledge and skills Poor provider-patient communication Cultural/language barriers Poor care continuity	Inadequate knowledge of occupational care** Poor provider-patient communication Cultural/language barriers Lack of coordination with general health care** Inability to assess job demands/function** Pressure to return to work prematurely** Few preventive services** Mistrust in WC impairs doc-patient relationship

* problems particularly distinctive to general medical care

** problems particularly distinctive to workers' compensation medical care

Primary Access

With regard to primary access (initial entry into the system), injured workers do not normally have to worry about securing insurance coverage, since they will generally be covered by an employer's workers' compensation policy. However, some employers, especially smaller businesses, may fail to comply with state laws requiring them to secure workers' compensation insurance. A recent report by the California Department of Industrial Relations and the Employment Development Department, for instance, estimated that 19% of California employers either underreport payroll to the state or have no workers' compensation coverage (LRA, 1998). Research studies have identified numerous other barriers to initial reporting of WC claims including fear of employer reprisals, employer safety incentive systems which discourage the initial reporting of work-related injuries, and other disincentives to the filing of WC claims (Azaroff, 2002; Pransky et al., 1999; Morse et al., 2000). Recent surveys of injured workers have revealed that many workers, especially low-wage and contingent employees, are threatened by possible job loss if they report occupational health problems (Azaroff, 2002; ILO, 1998). In Florida, for instance, 33.4% of injured workers surveyed in 1999 expressed concerns about being laid off or fired as the result of suffering a work-related injury (FDLES, 1999). A similar survey of injured workers in Minnesota found that 21.3% of respondents were worried that they would be fired or laid off as a result of filing a WC claim (MacDonald, 2000).

Primary access to WC medical care is also impeded by a lack of knowledge among workers, employers, and physicians about how the WC system works. Studies have shown that many employers and workers lack basic knowledge about the workers' compensation system including eligibility for medical care benefits and the procedures necessary to obtain care. Most of the participants in a California focus group study reported receiving inadequate information from their employers about how to obtain medical care for a work injury (Sum, 1996). Respondents to a survey of more than 8,500 injured workers in 10 states in 1997 indicated that only 61% of workers felt that they had received sufficient information about accessing workers' compensation care following their injuries (Intracorp, 1997). Over 21% of injured workers in Florida reported that they did not receive information from their employers after being injured about what workers' compensation benefits and services were available (FDLES, 1999).

Eligibility for medical care under workers' compensation is also dependent on establishing that the patient's medical condition is caused by occupational factors. Work-related etiology must be established before workers can receive workers' compensation payments for medical care. For many conditions, such as a lacerated finger, determining whether work activities caused the injury is generally a straightforward matter. But there are other common conditions, such as nonspecific back pain and tendonitis of the hands, for which establishing the extent of occupational causation may be complicated and medically ambiguous. This inherent medical uncertainty can delay and potentially jeopardize access to care for affected workers (Dembe, 1996). In addition, medical providers might be unfamiliar with the relationship between work activities and specific ailments or might not fully investigate a patient's occupational history. For example, a recent study by researchers from Harvard University found that physicians at a large HMO failed to properly diagnose and report cases of occupational asthma 21% of the time, in part because they did not obtain detailed work histories (Milton et al., 1998). Workers suffering from unusual or emerging occupationally induced diseases—such as acquired HIV infection

among health care workers—face special problems (Tereskerz and Jagger, 1997; Dembe, 1992; Boden, 1987).

A direct and potentially serious impediment to entering the WC medical care system is created when insurers deny coverage for a work-related injury. One recent study from Hawaii found that 12.8% of WC claims for medical treatment are denied at some point during the history of the case (Kelley and Amparo, 2000). There can be many reasons for denial, including missing information and breeches in administrative procedure, but the most common sources of dispute involve questions of occupational causality and coverage under state WC compensation criteria. A dramatic example of how insurance denials impede access to appropriate medical care was observed among patients receiving care for hand and wrist disorders at an academic health clinic in New York City (Herbert et al., 1999). At that clinic, seventy-nine percent of 135 workers diagnosed with occupational carpal tunnel syndrome by clinic physicians had their WC claim initially disputed by the employer's insurance carrier. Under New York State law, such disputed cases are adjudicated through the state's WC administrative appeals board. Ultimately, 96% of the disputed claims were decided in favor of the worker, but it took an average of 429 days for the decision to be made. During that period, payment for medical care was unavailable either from the WC insurance carrier or through the workers' general health care plan (which excludes care for work-related cases filed under WC) and, consequently, many workers failed to receive needed medical treatment or diagnostic testing.

Secondary Access

Even if an injured worker is able to report a workplace injury, file a WC claim for benefits, prove that the condition is work-related, get the claim accepted by the employer's insurance carrier, and identify clinicians from which to seek care, there may still be significant barriers impeding the worker's ability to obtain needed medical services. For example, physicians may refuse to provide the care when approached, possibly because the available WC reimbursement fees are too low or perhaps because they feel that the administrative complexities and medical-legal exigencies of providing WC medical care are burdensome. In this regard, a recent study in upstate New York found that approximately 42% of physician practices refuse to accept WC cases (Lax and Manetti, 2001). Frequently cited reasons for refusing to accept WC cases included delays in payment for services or outright nonpayment, the time-consuming nature of WC cases; excessive paperwork, and distrust of the WC legal system.

Approximately 42 states currently regulate the medical provider fees available for care of work-related injuries and illnesses under workers' compensation. In some cases, the enactment of extremely low fee schedules—which might be politically attractive as a way of reducing system costs—can discourage and deter providers from accepting WC cases, thus creating another type of secondary access barrier for injured workers. Massachusetts, for instance, has among the lowest permissible WC medical care fees rates in the nation. In Massachusetts, allowable Medicare reimbursement rates for general medical care are 15 percent higher than the Medicare median rate for all states, indicating that health care costs in Massachusetts are generally higher than elsewhere in the country. However, at the same time, the Massachusetts workers' compensation fee schedule has been set at a level 26 percent lower than the median Medicare rate (Tanabe and Murray 2001). This striking imbalance apparently creates a powerful financial disincentive for medical professionals to accept WC cases. According to one physician who testified before a state panel exploring this issue; "I won't treat workers' compensation patients. I might

as well see them for free. The fees are too low” (Kulich et al., 2001). A study sponsored by the California Society of Industrial Medicine and Surgery recently examined this issue comparing California’s fee schedule, and its affect on access to medical services, to those existing in Massachusetts and Florida (another low-fee state) (Johnson et al., 2002). A physician survey conducted as part of this study found that only about 47-53% of neurologists and 79-88% of orthopedists in the low-fee states accepted WC cases and that the low reimbursement rates were indicated as a major reason why providers chose not to participate in the WC system. A similar conclusion was recently reached in Hawaii, where the Hawaii Legislative Bureau examined the problem and found that “the [low] medical fee schedule definitely appears to have had a negative impact on an injured employee’s access to specialty care and diminished access to more experienced health care providers” (Martin, 1998).

As in general medical care, authorization for care requirements and utilization review procedures are used for controlling over-utilization of services and containing system costs. But there is some evidence suggesting that utilization review processes are applied particularly aggressively in the workers’ compensation setting, possibly related to employer control over the purchasing of WC insurance and selection of the WC medical care plan. A recent national study of ambulatory medical care visits found that authorization for care was required approximately four times more often for WC cases compared to cases paid for by general (non-WC) health insurance, after controlling for diagnosis, age, gender, region, location of care, and other factors (Dembe et al., 2002). Other studies have shown that the need for insurer authorization can delay and degrade the care provided to patients. Among a sample of WC claimants with low-back pain in Long Island, New York, the need to obtain insurer authorization was found to impede access to specialists and physical therapists, thereby delaying recovery and increasing net WC costs by 25% (Gallagher and Myers, 1996).

Despite the comprehensive financial coverage afforded by workers’ compensation insurance, it is not uncommon for medical care for work-related conditions to require outlays by injured workers, thus creating another potential barrier to obtaining medical care. For example, although WC ostensibly covers the cost of needed prescription medications, many WC plans require the injured worker to purchase the drugs out-of-pocket and then seek reimbursement for those payments through the filing of appropriate claims forms with the WC insurer. With the increasing cost of prescription drugs, which can easily top \$100 per pharmaceutical purchased, the need to make such an expenditure can deter some injured workers from obtaining the needed medication. It can also create an incentive for cost-shifting to other insurance systems. A recent study of prescription drug use among New York state civil servants revealed that 69% of injured workers eligible for WC medical care instead used their regular health insurance plan (with co-payments) for obtaining medications for their work-related injuries (Stapleton, 2003). Other studies have also documented that some injured workers face a possible financial burden related to the need to make out-of-pocket expenditures for the care of work-related conditions. In a survey of New Hampshire workers with work-related back injury cases that had been accepted for coverage under workers’ compensation, 21% of respondents reported making out-of-pocket payments for medical treatment of their injury (Pransky et al., 2000). Nearly a quarter (23.1%) of patients being treated for occupational injuries under workers’ compensation insurance in California reported incurring nonreimbursed expenses for medical treatment of their injuries, with 2% making out-of-pocket payments exceeding \$500 (Rudolph et al., 2002).

Injured workers frequently experience substantial delays in obtaining WC medical care for a variety of reasons. A survey of 514 workers in ten states found that only 54% of injured workers were able to see a doctor on the first day of their work-related injury or illness (Intracorp, 1997). Inadequate means of transportation to the care facility is one factor that commonly causes delays in care. The Intracorp survey found that even though 36% of all injuries were reported as emergencies, injured workers frequently had to arrange their own transportation or drive themselves to the doctor or hospital. The employer helped the injured worker get to a clinician's location in only 20% of cases (Intracorp, 1997). Many injured workers report substantial obstacles and delays in obtaining care from specialists and therapists, and from doctors providing "independent medical examinations" that may be required in the adjudication of disputed WC cases (Lax and Manetti, 2001, NYCOSH, 2003). Injured workers surveyed in Michigan reported extreme frustration and delays of several months before being able to see a particular medical specialist (Roberts and Gleason, 1994). Similarly, surveyed workers cited inadequate access to specialists as a source of dissatisfaction with care provided in the Washington state managed care pilot program (Kyes et al., 1999).

Tertiary Access

Tertiary access problems involve difficulties in obtaining care that is directed appropriately at patients' needs and is effective in achieving desired outcomes. Care for injured workers under workers' compensation has distinctive medical and rehabilitative needs that go beyond the conventional medical services typically delivered in the primary care setting. Because of the focus on restoration of vocational function and return-to-work, medical care for patients with work-related injuries and illnesses traditionally has been characterized by the intensive use of specialists, including physical and occupational therapists. Special diagnostic tests and procedures, such as functional capacity evaluation and nerve conduction velocity measurement, are often applied in workers' compensation cases, not necessarily as medical imperatives, but rather to fulfill administrative and legalistic needs in the workers' compensation system. The patient's level of functional impairment frequently has to be ascertained by a doctor for the patient to qualify for disability payments. Special medical testing may also be necessary to substantiate occupational causation and eligibility for WC coverage.

These special aspects of WC medical care impose requirements that may not be adequately addressed by clinicians without special training in occupational medicine and workers' compensation. Studies have indicated that there is not a sufficient number of clinicians in the United States with special training in occupational medicine to meet these kinds of patient needs (Baker and Landrigan, 1990). An Institute of Medicine report concluded that primary care physicians are poorly trained to deliver the targeted diagnostic, therapeutic, and rehabilitative services required for appropriate care of patients with work-related injuries and illnesses (IOM, 1988). Specific problems identified by the IOM included the following: the limited number of occupational medicine specialists; inadequate medical school training for primary care physicians in the principles of occupational medicine; insufficient funding for occupational medicine faculty in medical schools; lack of payment and reimbursement systems to compensate physicians for worksite assessment and prevention activities; fragmentation and poor coordination of medical services for injured workers; lack of technical support services for primary care physicians providing occupational care; and lack of knowledge about techniques for facilitating successful return to work.

Clinicians treating work-related injuries and illnesses should be familiar with the patient's place of employment and specific job requirements to assess work restrictions and readiness to resume work. Increasingly, however, doctors have little time and financial incentive to visit work sites or engage in prevention-oriented programs. In theory, medical providers can play an important role in facilitating accident prevention at the workplace by recognizing sentinel health events, making on-site assessments to help advise safety specialists about potential hazards and medical management of exposed workers, and by keeping records of diagnostic trends to be used in occupational health surveillance (Deitchman, 2000). However, in practice, primary prevention is rarely effectively integrated or coordinated with medical services delivery for work-related injuries and illnesses (Dembe et al., 1998).

Primary care physicians' failure to fully investigate the potential occupational origin of patients' maladies has been well documented (Milton et al., 1998; McCurdy et al., 1998). Doctors often neglect to take a basic occupational history from their patients, thus making it more difficult to identify potential work-related conditions (Deitchman and Sokas, 2001; Lax et al., 1998; Newman, 1995; IOM, 1988). In a study of medical examinations performed by third-year residents, patients under 40 years of age and adult women were found to be significantly less likely than older patients and adult men to have been asked about work experiences and job activities (McCurdy et al., 1998). Most physicians have not been trained in principles of functional capacity assessment, disability prevention, and readiness for return-to work (McGrail et al., 2001; Wyman, 1999; Dembe, 1999).

Many workers report pervasive feelings of mistrust and suspicion surrounding workers' compensation medical care that can jeopardize the provider-patient bond that is essential for attaining optimal care and outcomes (Sum, 1996; Rudolph, 2002). More than a dozen workers interviewed in 2000 for a *Consumer Report* story on workers' compensation uniformly complained of doctors who hadn't read their medical records and of superficial examinations lasting less than 15 minutes (Consumer Reports, 2000). A substantial proportion of focus group participants in a California study felt that doctors were "against the injured worker" and several commented that the treating physician caused further injury to the worker, that the physician did not understand the particular injury, or that the physician did not understand the nature of the worker's job (Sum, 1996). Several participants in that study perceived that evaluating physicians operated "mills", were "unprofessional," and were "pro-insurance." The air of suspicion surrounding the medical evaluation of workers' compensation cases and clinicians' skepticism about the legitimacy of patients' disorders leads some workers to experience their interaction with medical practitioners as adversarial and humiliating (Reid et al., 1991; Imershein et al., 1994).

Surveys of injured workers have consistently shown a substantial level of dissatisfaction with workers' compensation medical care. A recent survey of injured workers in California found that 23.5% of respondents were "somewhat" or "very" dissatisfied with the medical care provided for their work injuries (Rudolph, 2002). Many of the California injured workers reported shortcomings in the providers' communications and clinical behaviors, including not listening well to the patient (reported by 22% of respondents), not showing courtesy or respect (27%), not explaining things understandably (30%), and not examining the patient thoroughly and carefully (36%). In a similar survey in Minnesota, 16% of respondents reported being somewhat or very dissatisfied with the care provided (MacDonald, 2000). Eleven percent of the Minnesota respondents thought that the treating physician did not take their condition seriously, and 10% indicated that the doctor did not explain their condition in an

understandable manner. Comparable results were obtained in a survey of injured workers in Florida in which 29% of respondents indicated that they were somewhat or very dissatisfied with the medical care received for work-related conditions and 17% reporting that their physicians could not answer questions about how their injuries or illnesses would affect their job functioning (Intracorp, 1997).

Evidence suggests that tertiary access problems with the appropriateness and adequacy of WC medical care may affect minority populations disproportionately. A recent survey in California found that injured workers who were younger, Spanish-speaking, non-white, lower income, less educated, or laborers reported significantly lower satisfaction with the doctor-patient interaction (Rudolph et al., 2002). Moreover, Spanish-speaking patients were less likely to be treated by physicians familiar with principles of occupational medicine. Studies of ambulatory care for work-related conditions have found that Hispanic patients were more likely to receive X-rays and need insurer authorization for care, and less likely to receive a prescription drug or to see a physician, compared to non-Hispanics (Dembe, 2003). Compared to white patients, black patients with work-related conditions were found to be more likely to receive mental health counseling and physical therapy, and less likely to see a nurse, after controlling for diagnosis, age, gender, geographical region, and other factors.

Case Study: WC Access-to-Care Issues Among Low-Wage Workers in California

Many of the problems faced by workers in securing conventional WC medical care were highlighted in a recent study of low-wage Chinese garment workers who were treated at the Asian Immigrant Women Workers Clinic (AIWWC) in Oakland (Burgel et al., 2004). The AIWWC is a free-care clinic that was established in April 2000 to meet the health needs of this population. In this cross-sectional descriptive study, 100 workers receiving care at the AIWWC were surveyed about their working conditions, job requirements, health history, and experiences in trying to secure medical care under workers' compensation. Most of these patients were poor, did not speak English, and worked long hours performing tasks that were extremely repetitive and required high-speed movements. Almost all of them (99%) were suffering from various forms of musculoskeletal pain including neck, back, and shoulder sprains, carpal tunnel syndrome, and tenosynovitis. Clinicians treating these patients diagnosed 99 cases (out of 100) that met the clinical criteria for identifying the patients' injuries as work-related. Workplace risk factors associated with these musculoskeletal injuries were identified through clinician interviews and visits to sewing factories to observe and photograph the work processes performed by the patients.

Only 39% of these patients had health insurance, 22% provided through their employer, 6% through their spouse's job, and 11% were covered by Medicaid. A little over half of them (57%) had seen a health care practitioner about their musculoskeletal problem before presenting at the AIWWC free clinic. Most patients reported significant barriers to obtaining care for their condition including cost of care (cited by 40%), language (46%), workplace-related barriers (11%) such as trouble getting time off of work and fear of job loss, lack of transportation (8%), not knowing how to get care (7%), and fearing doctors (4%).

Most significantly, only 7% of the AIWWC patients had filed a claim to get medical care through WC. Barriers to obtaining WC care cited by AIWWC patients included lack of information, lack of assistance in using the system, language barriers, and a limited selection of medical services. Some workers reported being forced to "sign away" eligibility for future medical care and benefits, and others reported having

been fired or forced out of their jobs after reporting the job injury. Workers who filed for WC care reported being confused about the status of their case and what benefits they were entitled to receive.

The results of this study highlight many of the problems that many minorities and low-wage workers face in obtaining access to workers' compensation medical services. In a recent ethnographic study of low-wage, low-skill workers in Los Angeles County employed in day labor, restaurants, homes, garment factories and hotels, 37% indicated that they had not reported their work-related injuries to their employers (Brown, 2002). Most felt that they might suffer retaliation if they reported their injuries. In one typical interview, a garment worker reported about his experience with his work-related injury: "They don't have insurance...so you need to look out for yourself. They don't pay attention to you. Because they don't have insurance to cover us. Because really, if you don't claim it, you won't get paid anything. You always run into problems, always, always." Another study has documented that only one-third of California agricultural workers knew they were eligible for compensation (Villarejo, 2000).

In California, over 5 million workers are employed in occupations with a median wage less than \$10 per hour (EDD, 2000). Of these, nearly two-thirds are in occupations in which the annual income is less than \$20,000 per year. The largest occupations in this group are waiters and waitresses, cashiers, janitors and cleaners, food service workers, clerks, farm workers, cooks, hotel and garment workers. Latinos, Asians, and African Americans are disproportionately represented among low-wage workers. More than 26% of California workers are immigrants, three times higher than in the rest of the United States (Schoeni, 1996). Over half of California's working poor are Latino, with large numbers of Asian immigrants from China, Korea, Vietnam, Thailand, and the Philippines (Ross 2000). As California policymakers consider ways of ensuring that injured workers can access timely and appropriate medical care, it will be important to recognize that special protection and assistance programs may be needed for these groups.

Strategies for Improving Access to Workers' Compensation Medical Care

The preceding examples illustrate that the relatively comprehensive insurance coverage provided under workers' compensation is not necessarily sufficient to assure the delivery of timely and appropriate medical care for injured workers. Employers, insurers, providers and health care systems, workers and workers' representatives, and government regulators will need to work together to ensure that WC medical care delivery is organized and financed in a way that minimizes obstacles to accessing care. While much can be accomplished voluntarily, government regulation and formal accountability measures may also be necessary, in part to protect the interests of minorities and marginalized workers who might not otherwise have the resources or support to secure needed system changes. Potential strategies for ensuring access to appropriate WC medical care may include the following:

- ***Design of contracts and insurance plans.*** Provisions for assuring good access to WC medical care potentially can be included in the WC insurance policy or in the contractual agreements established between the WC insurer and its participating medical providers and health systems. Involving workers in the initial design and development of a WC medical care plan could help to identify potential access problems and devise appropriate responses. Specific access requirements that might be incorporated into WC insurance agreements and medical care plans include precise time limits for responding to requests for medical care, distance requirements for geographical location of plan providers, minimal staffing levels to ensure availability of

specialists and ancillary services, and periodic patient surveys to monitor satisfaction with access to care. Provisions for providing transportation to the clinical site ought to be included in the WC medical care delivery plan.

- ***Informational materials.*** Educational programs and materials for both workers and providers are essential to inform each about how to access and deliver medical care for work injuries. Employers, insurers and their affiliated health plans should provide workers with essential information on how to locate and utilize available medical services including the names, addresses, and telephone numbers of participating providers, enrollment and reporting forms, and (when applicable) medical identification cards.
- ***Measures for minority and low-wage workers.*** Special measures could help ensure that minority and disadvantaged workers are able to access appropriate care: a) having multi-lingual and culturally diverse providers and staff available for WC patients, b) having trained interpreters available, and c) providing applicable patients with translated versions of literature, forms and facility notices.
- ***Monitoring and oversight systems.*** State WC policymakers have a potential role in monitoring these efforts and making sure that insurers, doctors, hospitals, and participating health care systems deliver appropriate and timely care to injured workers. States can enact specific access-to-care requirements through WC agency regulations, state criteria for certification of WC health plans, and compulsory or voluntary accreditation standards for providers and health systems.
- ***Regulatory options.*** Several regulatory options are available to state agencies: structural requirements to ensure appropriately trained providers for WC care, internal and external audit processes for identifying and resolving access problems, measures for maintaining access to care during claims adjudication and disputes, and appeals and complaint procedures for injured workers who are having trouble obtaining the care they want. Expanded state efforts may be needed to identify employers that fail to provide WC coverage, that improperly discourage the reporting of work-related injuries, or that attempt to suppress the filing of WC claims. State sanctions might also be needed to curb unjustified insurer denials of coverage or insurer failure to authorize needed care in a timely way. Billing and reimbursement procedures and administrative processes required by treating physicians must be simplified and streamlined as much as possible to minimize clinicians' resistance to providing WC care.
- ***Additional research.*** Further research is needed to understand the consequences of delayed or obstructed access to care on WC system costs, employer productivity, and worker outcomes. Financial barriers (such as out-of-pocket payments), problems in obtaining referrals for specialist care, and problems in patient-provider communication need to be studied more extensively. Additional investigation is needed to determine the impact of reimbursement levels on physicians' willingness to treat WC cases, and on other determinants of the adequacy of care. We are optimistic that continued research will demonstrate that improved access to care is in everyone's interest, ultimately reducing WC costs for employers and insurers, boosting workplace productivity, achieving better health outcomes and reduced disability for injured workers, and enhancing providers' ability to deliver high-quality care efficiently.

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Factors Improving Outcomes in Workers' Compensation

Jeffrey S. Harris

INTRODUCTION

Crises have been declared in workers' compensation at least since the 1980s. There is a widely held perception that the "system" is "broken". But "broken" has been defined as providing inadequate medical care, costing too much, failing to return injured workers to work in a timely manner, being too administratively complex, or being too arbitrary. What "broken" means seems to depend on one's role in the system.

Concerns about costs, return to work and satisfaction with care raise the question of the benefits medical care is providing for its costs. This is by definition a matter of value. To determine value, one must define the outcomes desired from medical care. Stakeholders appear to agree that restoring functional abilities, particularly the ability to work, is close to the top of the list. Replacing economic loss is a related objective that was one of the original goals of workers' compensation. It is less clear whether pain relief per se or other palliative care is a reasonable or achievable objective.ⁱ

Related questions include what works in the treatment of pain complaints, and whether medical care is correlated with faster return to work in those cases.

In an effort to understand what is received for medical care expenditures in workers' compensation, and what works, this report summarizes studies of claims data, surveys of injured workers, correlations between the two, and direct examinations of medical records for costly workers' compensation cases.

Most health complaints ascribed to work today present as soft tissue pain. Soft tissue complaints with specific diagnoses accounted for 42% of claims and 40% of costs in California in a recent study using the largest available claims database for the state. Another 30% of claims were accepted with diagnoses (primarily soft tissue complaints) too vague to apply practice guidelines or even understand what treatment might be medically effective.ⁱⁱ Most variance within diagnostic groups and from recommended best practices occurs in soft tissue complaints, particularly chronic pain complaints.ⁱⁱⁱ The file review studies cited here revealed that many soft tissue complaints did not have a clear injury associated with them, raising the questions of whether these complaints were symptoms, occupational diseases, or frank injuries, and whether they were in fact related to work.

Only 20% of claims had trauma diagnoses, which tend to be treated with less variance. This spectrum of disease is very different from the predominance of major trauma seen when the workers' compensation system was introduced in the beginning of the last century.^{iv}

To restore function and earning ability, workers' compensation should pay for consistent, effective, efficient care and management for health problems that have been shown in scientific studies to be

related to work. However, a substantial body of data, including the studies discussed in this paper, reveals that there is significant room for improvement in comparative efficiency and effectiveness of care. A recent comparison of levels of care to occupational medicine clinical practice guidelines indicated that medical care and time off work markedly exceeded evidence-based guideline targets.^v This paper presents data that the levels of care in California significantly exceed those seen in other states and other systems of care.^{vi} Studies reviewed here revealed that for many diagnostic groups, perhaps because of the wide variance in use, or indiscriminate application of the treatments, surgery and physical medicine do not appear to improve outcomes. For example, time off work was independent of the use of medical resource and cost variables.^{vii}

Costs for workers' compensation benefits in California have increased sharply in recent years, following periods of decline and stability. California was already one of the most expensive states for total costs per injured worker and for a number of types of testing and treatment in the mid- to late 1990s. For example, a series of multi-state studies revealed that California has the second highest workers' compensation costs among the comparison states (twice the cost of the lower cost states).^{viii, ix, x} Since then, California's costs have increased sharply.^{xi} The virtual tripling of workers' compensation premiums in California from 1998 to 2004^{xii} may be a symptom of system inefficiency.

How can these and other outcomes be improved? What are the desired best practices in medical care and disability management? This paper synthesizes a number of data sources to gain insight into the provider, employer, injured worker and legal practices that should lead to the best outcomes for workers.

METHODS

This paper draws on research from several groups of studies performed in the last several years.^{xiii, xiv, xv, xvi, xvii, xviii} Methods are more fully described in the source studies.

In the studies done for the Texas Research and Oversight Council, the authors classified several databases containing over 6 million claims from a major insurer, a data consolidator, a number of major employers, and the entire state of Texas, into homogenous diagnostic groups, which corresponded to discrete and (in theory) homogeneous recommended medical care and disability management processes. The groups were designed to be homogeneous for severity as well. For example, while low back pain or wrist pain (not involving nerve compression) can vary in the level of subjective complaints, they are physiologically homogeneous.^{xix} The authors then compared actual resource use by diagnostic group to resource use levels recommended by evidence-based guidelines. A similar approach was used in the CWCI study and the WCRI study, which confirmed earlier data.

The authors of the Texas studies also compared the characteristics of low- and high-cost cases, to better understand their underlying differences. Having determined that costs and resource use were heavily concentrated in the top quintile of injured workers at that time, the authors separately conducted file reviews and comparison to guidelines of several cohorts of high cost, long duration cases. In a separate project that also provided detail about the clinical appropriateness of care for the high cost group, several of the authors conducted criteria-based reviews of several groups of independent medical examinations of injured workers.

The authors performed Cox proportional hazard regressions to determine whether there was a correlation between outcomes such as time off work, costs, and duration of medical care, and resource use. The authors also surveyed several thousand injured workers in four states about functional and economic outcomes, satisfaction, provider and employer practices, and determined correlations among these factors.

EVIDENCE OF EFFICIENCY AND EFFECTIVENESS OF CARE AND DISABILITY MANAGEMENT IN WORKERS' COMPENSATION

Both direct and indirect methods of analysis have been used to examine the efficiency of workers' compensation medical care. Indirect methods suggest that there may be a problem, and direct methods are used to confirm implications of indirect analyses. Taken as a body of evidence, these studies reinforce each other to create a picture of the efficiency and effectiveness of current workers' compensation medical care and disability management.

Indirect Comparisons

The indirect methods discussed here compare population groups. One underlying theory several decades ago was that absent economic barriers to obtaining care, lower-use groups received more efficient and effective care. The assumption was confirmed by studies demonstrating no difference in health status despite wide variations in health service use, with the exception of preventive services in high-risk groups.^{xx,xxi} Another benchmark is comparison to expected levels of care derived from practice guideline recommendations. Indirect methods include comparisons of treatment of clinically similar entities among geographically based cohorts, different health care systems, and cohorts with different costs or exposures within populations. All three methods suggest that there might be opportunities for improvement in the care of workers' compensation claimants in California.

Interstate Variations

Comparison of resource use among the conditions paid for by workers' compensation in 12 states revealed that workers' compensation cases in California were more costly, using more resources and having more lost time than most comparison states. California workers' compensation medical care costs per case were the third most expensive of the 12 states studied for 1996-1998. For that time period, examination of two different cohorts of claims from different insurers revealed that the average cost per case (including medical only cases) was \$1756 and \$1821 respectively. As a point of comparison, costs were highest in Texas.

Reimbursement levels affect costs. California sustained these high costs despite an Official Medical Fee Schedule that had been frozen since 1976. These costs were almost twice the cost per case of the lowest cost states. High costs might be incurred in providing more effective medical care—or they might not.

The duration of medical care in California was the longest among the states, being almost double the duration in some other states. Long duration of medical care was associated with more treatment. The cost to duration relationship was not linear, given the lower reimbursement for many services in California.

Average time off work was also the longest among the comparison states. It was disproportionately longer than the duration of medical care. Interestingly, regression analysis (see below) revealed that there was no association between the duration of medical care and the duration of time off work. These results are summarized in Table 1.

Table 1. Variance in Costs, Durations (12 states)

Interstate variance	Position	Amount	Variance
Cost	3	\$1800	2x
Duration of medical care	1	21 weeks	> 2x
Time off work	1	29 weeks	> 3x
Managed care DOMC		4 weeks	5 x

Source: Harris, Bengle, Makens, Lee et al. *Striking the Balance*. Austin: ROC, 2001

Resource use patterns differ substantially among states. In Texas, for example, there are high rates of surgery compared to other states. In California, there was more than three times the use of modalities, therapeutic exercise, and “other physical medicine” than in the lowest-use states. Many more tests were also performed, with California physicians ordering more plain radiographs, MRIs, and electrophysiologic studies than comparison states.^{xxii} California led the group in the number of epidural steroid injections, CT scan contrast injections, and arthrograms. Chiropractors ordered more than twice the number of tests and physical medicine treatments than allopathic physicians working with physical therapists. California physicians also prescribed many more medications than those in other states. They wrote eight prescriptions per patient, as opposed to 4.5 in Minnesota. Many of these differences are shown in Table 2.

Table 2. Variance in Resource Use Among 12 States

Interstate variance	Position	Type	Variance
Physical medicine	1	Modalities, ther. ex, other	> 3 x
Tests	1/2	Xrays/ MRI, NCV/EMG	1.2—3 x
Injections	1	ESI, CT, arthrograms	2 x
Inter-professional resource use	chiropractic v. physical medicine		> 2x

Source: Harris, Bengle, Makens, Lee et al. *Striking the Balance*. Austin: ROC, 2001

Intersystem Variations

Comparisons between differently financed treatments of the same cohort of patients in Texas, echoing a similar study in Minnesota, showed much greater cost and use of resources in workers’ compensation cases than in similar cases paid for by a group health PPO. Costs were 4.5 times greater. There was much

greater use of injections, manipulation, therapeutic exercise, electrodiagnostic testing, and surgery among cases paid for by workers' compensation. Many of these differences are shown in Table 3.

Table 3. Variance in Resource Use Between Group Health and Workers' Compensation

Intersystem variance	<i>Variance</i>
Cost	4.5 x
Injections	2 x
Manipulation	3.5 x
Therapeutic exercise	> 2 x
Electro testing	3 x

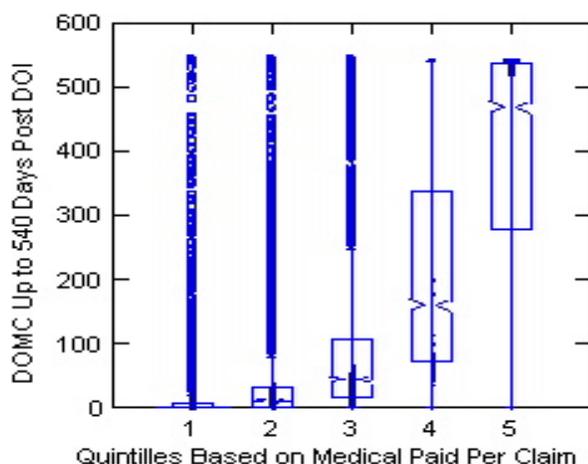
Source: Harris, Bengle, Makens, Lee et al. *Striking the Balance*. Austin: ROC, 2001

Within-Cohort Comparisons

At the time of the ROC studies, about 20% of injured workers account for over 80% of the costs, resource use, and durations of care and time loss in workers' compensation. While this pattern was present in all the states studied, the high-cost group was more concentrated and used a smaller proportion of resources in states other than Texas and California. Multiple diagnoses, diagnoses outside the first named diagnostic group, and diagnoses involving multiple body parts were much more common in the top quintile. There were a much higher mean and median number of providers in the top quintile. Almost all surgeries were in the top quintile, and there was a high use of physical medicine. Both duration of care and time off work are much greater in the top quintile. While this appears to be another example of the "80-20" phenomenon, the difference between the lower 4 quintiles and the top quintile is much more striking than is generally seen. The skew has become much larger in the years since this study was published, and guideline recommendations are now exceeded at the fiftieth percentile or lower in many resource groups.^{xxiii} It should also be noted that the phenomenon occurs primarily in unmanaged systems. A goal of medical quality improvement is to reduce such variance among like cases.

Figure 1 demonstrates this phenomenon for the duration of medical care. These findings raise questions about whether the highest quintile patients were more seriously ill than those in lower quintiles, or whether resources were used without producing measurable clinical improvement. Determining the answer requires structured reviews of medical records and comparison to search and guideline recommendations.

Figure 1—Differences in Duration of Medical Care by Quintile



Source: Harris, Bengle,

Makens, Lee et al. *Striking the Balance*. Austin: ROC, 2001

COST DISTRIBUTION AND COMPARISON TO CLINICAL PRACTICE GUIDELINES

Tables 4 and 5 illustrate extrapolated differences in resource use between lower quintiles and the top quintile and a comparison to the resource use recommended by clinical practice guidelines. The quintile ratios computed for Texas claims were applied to California data. There were many more office visits, tests and treatments among high cost patients. Low-cost patients' treatment generally comported with guideline recommendations, but high-cost patients' care was far in excess of those guidelines.

**Table 4. Comparison of Office Visits and Testing
Between Low- and High-Cost Patients Treated by Allopathic Physicians**

Service	Lower 80%	Top 20%	Guidelines
Office visits	4	20	4
X-rays	1	8	0
MRI	0	3	0
NCV	0	46	0

Source: Harris, Bengle, Makens, Lee, et al. *Striking the Balance*. Austin: ROC, 2001.

Table 5. Comparison of Treatment Intensity Between Low- and High-Cost Patients Treated by Allopathic Physicians

Service	Lower 80%	Top 20%	Guidelines
Therapeutic Exercise	18	40	Up to 10
Modalities	15	75	Up to 20
Work Hardening	0	80	Unproven
Epidurals	0	18	0
Laminectomies	0	>1	inappropriate
Fusions	0	0.5	inappropriate

Source: Harris, Bengle, Makens, Lee et al. *Striking the Balance*. Austin: ROC, 2001.

Chiropractors in particular showed these large differences between cohorts (Table 6). In the case of modalities and manipulation, even the lower quintiles received treatment in excess of guideline recommendations. Similar results have been noted in other studies.^{xxiv, xxv}

A more recent study shows that guideline recommendations are now exceeded in 40-80% of cases in California depending on the resource group.^{xxvi}

Table 6. Comparison of Treatment Intensity Between Low and High Cost Patients Treated by Chiropractic Physicians

Service	Lower 80%	Top 20%	Guidelines
Therapeutic exercise	6	81	Up to 10
Modalities	45	137	Up to 20
Manipulation	17	170	Up to 10
Work hardening	0	156	Unproven effectiveness

Source: Harris, Bengle, Makens, Lee et al. *Striking the Balance*. Austin: ROC, 2001.

The drafters of the ACOEM practice guidelines conducted an extensive search of the literature about physical therapy. Neither they nor the Cochrane Collaboration review groups were able to find much high-grade evidence of functional effectiveness for physical therapy modalities or therapeutic exercise.^{xxvii, xxviii, xxix, xxx, xxxi, xxxii, xxxiii, xxxiv} The literature that does exist compares modalities to each other, or compares exercise programs. Control groups were rarely used. The studies reviewed did not demonstrate convincing differences in return to work time or other measures of functional improvement. Lack of clear definition of what “physical therapy” is in studies or in individual cases presents a further difficulty in assessing or managing physical medicine treatment. One group of Cochrane reviewers, which includes doctorate-level physical therapists, regards PT treatment in many of the existing studies

as a “black box.” Guidelines development efforts do not generally involve original research; the drafters are dependent on the existing literature. The ACOEM guidelines made parsimonious recommendations about the use of physical medicine treatments precisely because they have not been proven effective in this context. One role of evidence-based guidelines is to recommend tests and treatments that have been proven effective, and not to recommend those that have not.

Direct Comparisons of Data to Benchmarks

Studies of cohort or case data provide the opportunity to directly test the relationships among variables or to determine the medical necessity of various levels of resource use. These are valuable in workers’ compensation to examine the assertion that more treatment produces a better result. Direct studies include correlations between resources and outcomes, correlation of survey data with outcomes, and records reviews compared to guidelines and evidence searches to assess diagnostic and causation accuracy, testing and treatment appropriateness, and disability management. The reviewer can determine whether clinical improvement followed use of resources over time.

Correlations Between Treatment and Outcomes

Cox Proportional Hazard regressions revealed a number of important findings. First, neither the cost of lost time nor its duration was significantly related to the cost or duration of medical care within each homogeneous diagnostic group. In other words, at least for the large claims database analyzed in these studies, time loss was not statistically related to medical care. Because the groups are homogeneous, one would expect that more care would lead to better functional outcomes, e.g. faster recovery. In fact, the association was random. In another more recent cohort, each additional unit of care resulted in more cost, more other services, and a longer time off work.^{xxxv}

For the ten leading diagnostic groups, surgery was associated with disproportionate cost increases, and increased duration of medical care and time off work. Physical medicine treatment produced a linear increase in cost, as well as increases, rather than decreases, in the duration of medical care and time off work (TOW).

Another line of evidence in the same studies supports these data. The researchers regressed claims variables against self-reported health status using ANOVA. Neither surgery nor physical medicine had an effect on physical or mental functioning scores. Physical therapy did not affect time off work, and surgery increased TOW slightly. There was no improvement in any of the top 10 diagnostic groups. With more physicians involved in the case and more diagnoses per case (characteristic of the top quintile claims), both physical and mental functioning scores were worse than those cases with only one or two physicians and a more limited set of diagnoses.

FILE AND IME REVIEWS: CLARIFYING THE CLINICAL REASONS FOR RESOURCE USE AND LOST TIME

Reviews of files of high-cost cases reinforced the conclusions of the statistical studies. Such cases tended to be active for quite a long time, ranging from two to twenty years in duration. The claimants’ function did not improve, despite protracted medical care, typically including use of multiple anti-inflammatory

and opioid pain medications, extended physical therapy (often unclear whether active or passive) and/or chiropractic care, or multiple surgical procedures. The majority of surgical procedures did not meet utilization review criteria in retrospect, or were performed for problems that were unlikely to be work-related.

High-cost cases involved many providers, many referrals among those providers, and many diagnoses and body parts named as involved in what typically started as a single complaint. Despite the use of these resources, reported functional ability and pain complaints typically remained the same. Many of these cases were litigated.

Many claimants were workers with sedentary or light jobs. There did not seem to be exposure to significant trauma in many cases. There was a high frequency of co-morbidity such as obesity, diabetes, and chronic musculoskeletal pain; workers' compensation payers often assumed care for these co-morbidities. Many patients had risk factors for chronic pain such as emotional, physical, or sexual abuse. Some had co-existing psychiatric conditions. A number of them became dependent on pain medication.

These results were to be expected. A detailed review of the literature on delayed recovery and chronic pain revealed a set of non-occupational predictors of prolonged absence from work.^{xxxvi}

The reviewers noted a number of common problems with the analysis and medical care in these cases. Frequently, health complaints without clear epidemiologic associations with occupational factors were attributed to work. A commonly seen statement in both medical records and independent medical examinations was that degenerative or multifactorially caused problems were work-related "in the absence of other obvious causative factors." Subsequent examiners tended to accept these assertions. Some providers asserted that complaints that occurred over time were related to the original complaint. Examples include multiple diagnoses in the upper extremities, development of back pain after an extremity complaint, and development of complaints in the opposite extremity. Claims examiners tended to accept these multiple or serial diagnoses as related to the original claim.

A significant number of diagnoses did not meet criteria, often because of incomplete or absent examinations. The most frequent problem was failure to perform an appropriate neurological examination. As a result, there were a number of diagnoses of nerve root impingement or nerve compression made solely on maneuvers without neurological findings and surgery was proposed. When surgery that did not meet criteria was performed as the result of a judicial action, the results were not encouraging.

In the file reviews, there appeared to be a significant amount of time off work that could not be justified on the basis of the information about functional abilities presented. It was not at all clear from the physical description of the injured workers in doctors' progress reports that many of these workers could not work. Reviewers regularly commented that they could not determine why injured workers were not at work. In these cases, physical impairments that would have prevented work or harmed the worker were not noted. Even if impairments were noted, modified duty is a well-accepted best practice in occupational medicine.

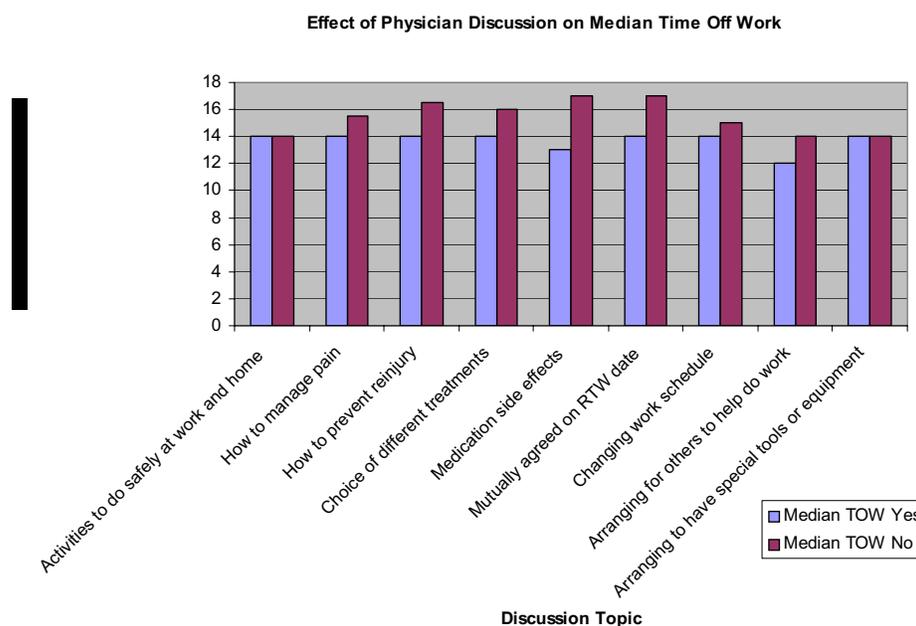
There were also significant gaps in treatment (implying but not proving that treatment was not needed) without return to work. To compound the problem, independent medical examinations suffered from a

lack of critical analysis of treatment and disability, so that proper direction for the cases was not provided.

EFFECTIVE PHYSICIAN PRACTICES

A number of general medicine studies have demonstrated a correlation between doctor-patient communication and improved outcomes. A parallel, stratified survey of workers in four states revealed specific employer and physician practices associated with better mental, physical, financial, and time loss outcomes. The survey of several thousand injured workers in four states included questions about physician practices. Correlation of the questionnaire responses with various outcomes revealed that certain physician behaviors were associated with improved physical capacity scores (Figure 2) and less time off work (Figure 3).

Figure 2



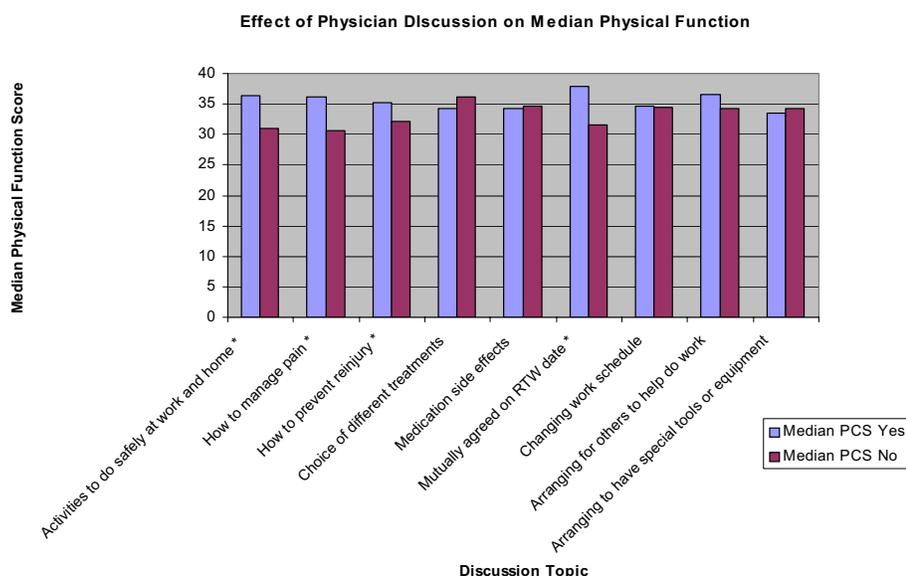
* = significantly associated with higher PCS scores

Physician communications associated with higher physical capacity scores included discussions of activities that could be done safely at work, pain management, prevention of reinjury, and agreement on a mutually acceptable return to work date.

Discussions of pain management, injury prevention, treatment choice, medication side effects, arrangements for help at work, and a mutually agreed on return to work date were associated with less time off work.

Fostering self-management also appeared to be important. An internal locus of control was associated with significantly higher satisfaction scores, mental functioning scores, physical functioning scores, and shorter time off work, although the relationship did not reach statistical significance.

Figure 3



Discussions about a time for return to work appeared to be particularly important. The mean mental capacity score was 51.5 when the return to work date was mutually agreed on and 41.5 when it was not. Injured workers lost 13 weeks of time when the return to work date was mutually agreed on and 18 weeks when they were not.^{xxxvii} Early discussion of the natural history of health problems, including activity modification and time off work, is a recommended best practice in occupational medicine.^{xxxviii}

The file reviews reinforced the need for the effective physician practices advocated in evidence-based occupational medicine practice guidelines.^{xxxix, xl} These are generally the inverse of the practices seen in high-cost cases. Effective practices start with an accurate diagnosis, and then an accurate causality attribution based on a clear exposure and plausible associations between the exposure and the health problem. A proper causal attribution forms the basis for prevention of more occurrences in others and exacerbation in the index patient.

The cornerstone of effective workers' compensation medical care is an outcome- and time-based treatment plan that is based on evidence of effectiveness and a positive benefit-to-risk ratio. Treatment in such a plan is appropriate in frequency and duration and contains no duplication of services. Treatment stops when functional improvement stops. Modified duty is instituted as soon as possible.

In addition, there is regular, complete documentation of care and reporting. It serves as a means of communication among the physician, ancillary health providers, case managers, employers and injured workers. There is teamwork and communication with nurse case managers and the employer.

EFFECTIVE EMPLOYER PRACTICES

The survey also provided empirical support for a number of recommended employer practices. Cooperation between the employer and the treating doctor resulted in a median PCS score of 39.2,

compared to 32.2 with reported lack of cooperation. The median MCS score with cooperation was 49.9, compared to 38.2 without it. Median time off work was 11 weeks when the employer and the treating physician worked together, vs. 17 weeks.

When the employee reported that his or her employer tried to understand his or her capabilities following injury, the median PCS score was 40.3, compared to 33.2 without such an attempt. The difference in MCS scores was even greater, at 51.1 v. 38.6. Employees whose employers tried to understand their capabilities returned to work in 12 weeks, compared to 16 weeks when this did not occur.

Provision of modified duty improved PCS scores by a small amount, with median scores of 36.6 compared to 33.3. Effects on MCS scores and time off work were not significant.

Mutual choice of physician resulted in median MCS scores of 51.7 v. 44.7 weeks when the employer alone chose the physician. Time off work was 5 weeks with a mutual choice of doctor, as compared with 15 weeks otherwise.

Comparison of high-cost states to other states also revealed that fewer employers in high-cost states were reported to treat employees with respect prior to their injury. More employees reported trouble with their supervisors prior to injury, and more reported that they were fired post-injury. More employees in high-cost states reported that their employer did not seem concerned about their safety.

ECONOMIC AND EMPLOYMENT IMPACT

The impact of work-related injuries on employment and the worker's financial well-being was at times significant. Of those surveyed, about a third of workers were not working at 540 days post-injury. Half of those not working stated that they were unable to work because of their injury.

About a quarter of workers had to use savings after their injury, about the same number had problems with bills, and slightly less borrowed money. About 10% went into credit card debt. Smaller numbers of workers had their spouse return to work, lost health insurance coverage, used food stamps, or had their cars repossessed or sold at six months after injury. These figures declined after six months, suggesting some adaptation had been made.

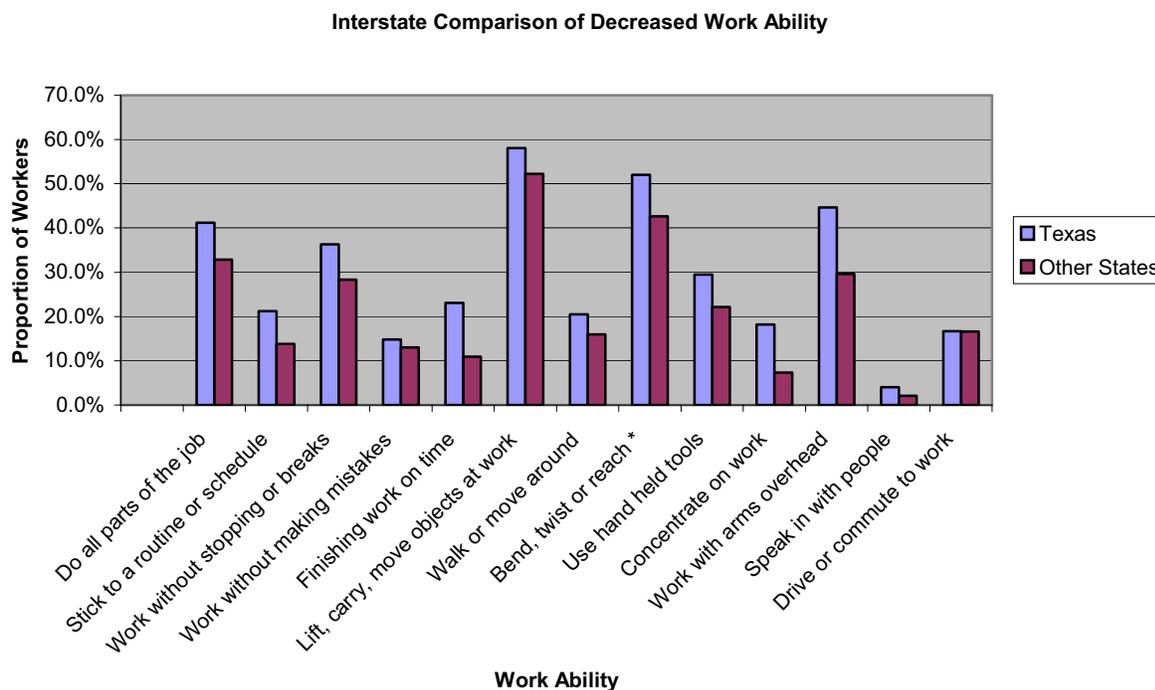
INCOMPLETE FUNCTIONAL RECOVERY

Substantial numbers of injured workers reported less ability to perform a number of tasks after their injury. These results are shown in Figure 4.

DISCUSSION

Effective care and care management for work-related health complaints are built on documented best practices. Best practices as embodied in occupational medicine practice guidelines are based on both high-grade evidence and expert consensus. Underlying the concept of guidelines is the well-accepted basis of quality improvement—that unwanted variation is poor quality by definition. Viewed another way, random inputs lead to random outcomes.

Figure 4— Interstate Comparison of Decreased Work Ability



True occupational medicine practice guidelines describe a rigorous process of care that efficiently arrives at a valid diagnosis, uses epidemiologic data to determine work-relatedness, provides proven effective tests and treatment appropriately, identifies risks for delayed functional recovery, and manages return to activity effectively. This is a broader and more logical approach than simply looking at each proposed test or treatment in isolation. Presently, there is substantial inconsistency among cases and providers in care provided for similar health problems. This inconsistency creates even more than the usual confusion when there are multiple providers involved, typical of high-cost cases.

Inconsistency starts with the initial analysis of work-relatedness, termed “causality” in the medical literature. Both providers’ and adjusters’ causality analysis is often inaccurate compared to the scientific knowledge base. Physicians should be certain that a mechanism known to cause the problem in the occupational epidemiologic literature was involved. Simply being at work when a problem was noticed is not a scientifically acceptable relationship between work and the health problem at issue. A common form of logic seen in treating providers’ reports states that “absent other factors...” the problem must be work-related. This form of scientifically invalid reasoning was been observed in 50% or more of cases in the file reviews cited. Simply opining that a problem was work-related does not meet the same standard as describing a mechanism of injury that has been associated with the health problem and job duties in question. In addition, the more difficult it is to describe a chain of causation, the less likely it is to meet generally accepted medical (not legal) standards of causation.

Another area of notable inconsistency in workers’ compensation cases is diagnosis. Diagnoses should meet all specific criteria for that diagnosis, particularly when surgery is entertained as an option. Non-

anatomic pain, or pain and a positive maneuver of low sensitivity or specificity, are not sufficient for diagnoses involving nerve compression. It is especially important to avoid diagnostic expansion or “creep,” in which the worker’s complaints of regional pain are deconstructed into multiple diagnoses of disorders of every joint or muscle group in the affected area. This is not only biologically unlikely, especially with sedentary work, but also labels the worker as seriously ill or injured, and invites multiple surgical interventions that are often unsuccessful in resolving pain complaints.

Unrelated body parts are often added to claims over time, with no scientific or medically valid connection to the original health problem. This reasoning results in payment for virtually any health problem as work-related, for the life of the claimant, and renders preventive efforts ineffective, since no valid association was present. There is often compensation for degenerative/aging health problems and for medical misadventures that occurred as the result of inappropriate treatment. Clinicians should separate the effects of aging, obesity, other co-morbidities, and coping skills and psychosocial issues from the work-related health problem to allow focus on each issue for more effective treatment and management.

Treating physicians are most effective when they understand the worker’s health complaint in context. The physician should elicit information about all co-morbidities, the worker’s job demands and work situation, and risks for delayed functional recovery (a detailed summary of documented risks is available in the ACOEM *Occupational Medicine Practice Guidelines*).

The physical examination should be focused but complete for the presenting complaint. Many examinations included detailed range of motion findings, which were seldom useful for common problems, and omitted the relevant neurological examination. Neurological examinations that were present were often incompletely documented or misinterpreted. Electrophysiologic tests were also frequently misinterpreted. (These areas were the most frequently deficient in training done in the dissemination of the ACOEM *Guidelines* as well.)

Physician/patient discussion and education are cornerstones of effective treatment. Outcomes were improved when treating physicians discussed pain management, safe work, return to work, and other factors with injured workers. A discussion of the evidence for causation is a necessary part of a discussion of safe work and prevention of future problems. It appears that these discussions work best when framed as a partnership, with agreement on key issues such as a date for return to work and what activities the worker can safely do.

Treatment should be consistent with evidence of effectiveness, and time- and recovery-based. Improvement should be quantitatively documented, and treatment should be stopped when improvement stops. This should be intuitively obvious, but it is uncommon in high-cost cases. Legal determinations of appropriateness that are inconsistent with high-grade scientific evidence, observed in a significant number of files, should be avoided for the ultimate benefit of the injured worker. The treatment may be authorized, but absent scientific proof of effectiveness, it is unlikely to improve function.

It is important to note in treatment planning that many common musculoskeletal complaints do best with maintenance of activity. Release to appropriate modified duty is important in this context, and to

maintain social support and involvement in the workplace. Coordination with the employer is critical for planning and for framing of safe modified work.

Employer practices that were associated with better outcomes included offers of appropriate modified duty, cooperation with the treating physician, and an attempt to understand the returning worker's capabilities. Understanding the reasons for the health complaint is important for prevention of exacerbation and new cases. Associated work conditions should be mitigated to optimize health and productivity.

Workers must have an active role in prevention and recovery as well. Regular aerobic exercise and stretching are important to prevent regional muscle pain, as are proper workstation adjustment and posture of the worker. This is particularly important in workers with comorbidities such as obesity and fibromyalgia. After a health complaint is noted, graded return to activity or maintaining activity is important to facilitate functional recovery in many instances of neck, shoulder, knee, ankle and back problems.

Understanding and actively managing pain and function is key as well. Workers with an internal locus of control did better on most outcome measures than those with an external (physician) locus.

Wide variation in care and absence from work, inappropriate performance of tests and procedures, reliance on opinions that are not based on data, and legal decisions inconsistent with scientific evidence have created patterns of care that are not observed in other areas of the health care system. Treatment is often continued with no change in functional status. As one result, the workers' compensation "system" includes a substantial group of people who are not working, often at a significant economic loss, but have questionable functional impairment.

The question then arises, how could we assure the consistent delivery or management of high-quality care? The presence, nature and rapid recent expansion of the high-cost cohort suggest that there is significant opportunity for improvement. Medical care should clearly be managed as soon as possible according to best practices, with as little undesirable variance as possible. Achieving this level of quality requires an organized medical delivery system with timely, accurate and longitudinal case information and applicable evidence summaries and guidelines to support appropriate decision-making and consistent diagnosis, treatment, and disability management. Uncoordinated care without a quality management system including outcomes measures and feedback to providers has produced the less than optimal results presented here.

Changing Roles and Processes in Workers' Compensation

Care managers, whether adjusters or nurses, should have an adequate fund of knowledge and access to evidence-based guidelines and criteria to make payment and case management decisions that are consistent with evidence of effectiveness. Care managers are part of a system of checks and balances that seem not to be effective, given that the level of services provided in California are far in excess of those expected from clinical practice guidelines.^{xli}

It is worth repeating that the area of most variance within diagnostic groups and from recommended best practices occurs in soft tissue complaints, particularly chronic pain complaints. As noted, California was

the only state or province that accepted pain as a work-related medical condition and, until the most recent reforms, a factor in permanent disability calculations. The availability of payment for treatment of chronic pain in California could certainly account at least in part for the provision of the growing number of services for such complaints. This situation raises questions about the contribution of such treatments to the improvement of workers' ability to function or to earn a living.

Attorneys were involved in more than three quarters of cases in which permanent disability was paid.^{xiii} Attorneys in California workers' compensation are paid with a percentage of permanent disability awards. This may constitute an incentive to prove disability.

To ensure medical care that improves the ability to function, administrative law decisions should be based on high-grade medical evidence (when available), objective evidence of functional improvement, and rigorous clinical logic rather than opinion. Decisions in dispute resolution should be consistent with the available scientific evidence and objective improvement in function and level of employment. Presently, the standards for medical and legal proof are quite different.^{xiiii} In order to optimize objective medically related outcomes for injured workers, legal arguments and decisions should mirror best medical practices. Much current precedent is not consistent with evidence-based guidelines. Some observers have cited this lack of alignment as a reason for less than optimal care management and quality of care, when added to underlying practice pattern variance. This area is technical enough that independent medical review by trained reviewers using standardized processes is more likely to produce a decision most consistent with evidence of effectiveness.

Challenges to Improvement of Outcomes in California Workers' Compensation

Best practices in occupational medicine would recommend efficient and effective use of care that consistently improves function in a medically logical process. The data presented above would suggest that these targets are rather different from the current situation. The workers' compensation "system" in California uses very different processes that produce very different results for similar health complaints than the general health system or the systems in many other states.

The paradigms used in the casualty insurance and workers' compensation legal system are significantly different from those of scientifically based occupational medicine. Casualty insurance adjusters are trained to replace casualty losses, which are generally acute and discrete. Traumatic amputations and the like seen in the past may have been discrete and final. However, the majority of health problems claimed to be work-related today are not that clear cut; treatment options are often applied for unclear reasons for extended periods.

Because current workers' compensation care and disability management are not discrete losses like car wrecks or property damage, medical care and disability should be managed according to a specific process compared to best practices and benchmarks. The process starts with verification or clarification of the diagnosis, which, as noted above, is often incorrect or too vague to manage. It then progresses to an evidence-based evaluation of work-relatedness, and then agreement to use proven tests and treatment in appropriate situations, and to continue only if functional improvement results. Causation is not based on an opinion, as it is in the current legal system, but on statistically valid studies associating specific

insults with specific health problems. Treatment appropriateness is based on proven effectiveness in specific circumstances, not on subjective assertions that treatment is needed.

Many adjusters, attorneys, judges, and some utilization review personnel, however well intentioned, are not fully trained to accurately verify causality or diagnoses, or to determine whether testing and care are appropriate. Onsite observations in several states including California reveal that non-medical personnel, sometimes functioning without medical guidance, and sometimes contravening medical advice or guidelines, manage workers' compensation care as if it were an open-ended casualty loss. The levels of resource use and absence from work documented above are the product of this approach. The current system of care, insurance adjusting and legal adjudication will require changes in medical analysis, payment authorization practices, and legal analysis and standards if workers' compensation medical care is to approach recommended best practices.

Better outcomes for injured workers will mean changes in processes, culture and the knowledge base in all areas of the system. Absent such changes, the costs and amount of time lost in the workers' compensation system will most likely continue to escalate without producing improvements in recovery of the ability to work.

ⁱ Until the most recent reforms, California law stated that medical care was intended to "cure or relieve" work-related health problems. Functional recovery was not a criterion for effectiveness or medical necessity. The recent reforms requiring use of evidence-based treatment could change this, depending on the intended outcome of the treatment.

ⁱⁱ Harris JS, Swedlow A. *Evidence-based Medicine in California Workers' Compensation*. Oakland, CA: California Workers' Compensation Institute, 2004.

ⁱⁱⁱ California is the only state or province that accepts now accepts pain alone as a work-related medical condition.

^{iv} Harris JS. Workers Compensation. In McCunney, R.S., et al. (eds.), *A Practical Approach to Environmental and Occupational Medicine*, Third Edition. Boston: Little, Brown, 2003

^v Harris JS, Swedlow A. *Evidence-based Medicine in California Workers' Compensation*. Oakland, CA: California Workers' Compensation Institute, 2004.

^{vi} Harris JS, Swedlow A. *Evidence-based Medicine in California Workers' Compensation*. Oakland, CA: California Workers' Compensation Institute, 2004.

^{vii} Harris JS, Bengle AL III, Makens PK, Lee A et al. *Striking the Balance: An Analysis of the Cost and Quality of Medical Care in the Texas Workers' Compensation System*. Austin: Texas Research and Oversight Council on Workers Compensation, 2001.

^{viii} Harris JS, Bengle AL III, Makens PK, Lee A et al. *Striking the Balance: An Analysis of the Cost and Quality of Medical Care in the Texas Workers' Compensation System*. Austin: Texas Research and Oversight Council on Workers Compensation, 2001.

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^x National Academy of Social Insurance. *Workers' Compensation: Benefits, Coverage, and Costs: 2000 New Estimates*. Washington, DC: National Academy of Social Insurance, 2002.

^{xi} Harris JS, Swedlow A. *Evidence-based Medicine in California Workers' Compensation*. Oakland, CA: California Workers' Compensation Institute, 2004.

^{xii} California Workers' Compensation Institute. *California Workers' Compensation Institute Bulletin* 04-22, November 8, 2004 .

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- ^{xiii} Harris JS, Bengle AL III, Makens PK, Lee A et al. *Striking the Balance: An Analysis of the Cost and Quality of Medical Care in the Texas Workers' Compensation System*. Austin: Texas Research and Oversight Council on Workers Compensation, 2001.
- ^{xiv} Harris JS, Bengle AL III, Makens PK, Brigham CR, Christian JH, Siktberg D et al. *Improving The Quality of Independent Medical Examinations*. Olympia, WA: State of Washington Department of Labor and Industries, 2002.
- ^{xv} File reviews for diagnostic accuracy, procedure appropriateness and disability management at several major workers' compensation insurers
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- ^{xvii} Harris JS, Swedlow A. *Evidence-based Medicine and Workers' Compensation in California*. Oakland, CA: CWCI, 2004.
- ^{xviii} Eccleston S, Zhao X. *The Anatomy of Workers' Compensation Medical Costs and Utilization: Trends and Interstate Comparisons, 1996-2000*. Cambridge, MA: WCRI, 2002.
- ^{xix} It should be noted that there are no accepted scales of *objective* severity for soft tissue complaints. Currently available scales use self-rated symptoms. The presence of a permanent disability award has not been shown to correlate with objective clinical severity. It does correlate with attorney involvement.
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- ^{xxi} Luft HS, Dudley RA. Measuring quality in modern managed care. *Health Serv Res*. 2003 Dec;38(6 Pt 1):1373-9.
- ^{xxii} In a more recent study, California physicians ordered more than 2 radiographs and 1.6 MRI or CT scans for every low back soft tissue case, when guidelines would have recommended very few. They ordered more than 16 physical medicine treatments and 24 chiropractic treatments per case as well, with the upper end cases having well over 100 per case. (Harris and Swedlow, 2004).
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- ^{xxxvii} It is possible that physicians were selective in whom they discussed various issues with. It was not possible to control for this in surveys of injured workers. It was the case that the diagnostic groups were homogeneous with regard to general levels of physical dysfunction.
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Design and Implementation of Workers' Compensation Quality Improvement in Washington State

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PREFACE

For the past several years, the Washington State Department of Labor and Industries, in collaboration with researchers at the University of Washington, has been engaged in an ongoing quality improvement project known as the Occupational Health Services (OHS) project. The OHS project represents a community-wide delivery system intervention aimed at improving health outcomes and reducing disability among injured workers. A key aspect of the project has been the development of quality (performance) indicators to establish expectations, and explicit benchmarks, for the delivery of generic occupational health services and for care related to three specific conditions—carpal tunnel syndrome, low back sprain, and extremity fractures. The OHS project is currently being tested in two pilot sites in western and eastern Washington. In each site, a center for occupational health education has been developed to recruit health care providers for the pilot and to provide activities aimed at improving quality, including patient care tracking, case coordination, continuing medical education, case consultation, and provider mentoring. The evaluation now underway will determine if the approach to quality improvement adopted by the OHS project is useful as a strategy to improve outcomes by reducing disability among injured workers.

The research and policy activities described in this paper were supported by funding from the Washington State Department of Labor and Industries. Partial support was also provided by a grant from the Robert Wood Johnson Foundation under its Workers' Compensation Initiative. The opinions and conclusions expressed are those of the authors and do not necessarily represent the views of the Washington State Department of Labor and Industries or the Robert Wood Johnson Foundation.

INTRODUCTION

The search for new approaches to improve the quality of health care has taken on added importance in recent years with mounting evidence of serious errors and deficiencies in the delivery of health services (Schuster, McGlynn and Brook, 1998; Chassin and Galvin, 1998; Committee on the Quality of Health Care in America, 2001; Kohn, Corrigan and Donaldson, 1999; McGlynn et al., 2003). Within the field of workers' compensation, the quality of occupational health care has been a longstanding concern. Studies indicate that the outcomes of care for workers' compensation are worse than the outcomes for similar procedures provided for non-work-related conditions (Greenough and Fraser, 1989; Javid, 1992; Katz, Lew, Bessette et al., 1998). Not only are treatment outcomes worse for workers' compensation than for general medical care, medical costs for the treatment of similar conditions are higher (Baker and Krueger

1995; Johnson, Baldwin, and Furton, 1996). Further, workers' compensation faces the difficult task of preventing and managing serious and costly disability (Cheadle et al., 1994). Yet the workers' compensation system has paid relatively little attention to the important issue of disability prevention.

This article discusses an ongoing initiative in Washington State, sponsored by the Washington State Department of Labor and Industries (DLI), intended to improve quality and health outcomes for injured workers.

BACKGROUND AND KEY CHALLENGES

Workers' compensation provides payment for medical care needed to treat occupational injuries or illnesses, replaces a portion of lost earnings arising from temporary disability, and provides indemnity benefits for workers with permanent impairment. Most workers' compensation programs are administered and regulated at a state level. U.S. Government employees are covered under separate federally administered programs. The extent of benefits, specifics regarding access to care, and who directs that care (employer, worker, or physician) are not consistent across states (Burton, 1995). States may allow coverage through employers' self-insurance programs, through private insurance carriers, or through state fund programs (Eccleston, 1995). In six states, including Washington, employers that are not self-insured are required to purchase workers' compensation insurance through a state fund. The state fund in Washington, administered by the DLI, covers two-thirds of the nonfederal workforce. In 2000, the DLI expended \$472 million for medical care to treat injured workers and an additional \$683 million for temporary and permanent disability benefits.

Serious and costly disability poses a significant problem for workers' compensation. Research indicates that 5% to 10% of the injured workers with back problems or musculoskeletal injuries who suffer long-term disability incur 75% to 85% of total workers' compensation costs (Hashemi, Webster, Clancy, et al., 1997; 1998). Yet the workers' compensation system has paid relatively little attention to the important issue of disability prevention. Workers who are unable to return to productive employment within 3-6 six months of an injury may have a dramatically reduced chance of ever returning to the workforce (Cheadle, et al., 1994). The majority of these cases involve non-catastrophic injuries that should not become disabling. The personal and financial consequences of this disability burden can be enormous (Fulton-Kehoe, et al., 2000).

Employers and workers' compensation insurers have responded to cost-quality problems by initiating case management, by adopting cost containment approaches such as fee schedules and inpatient case-based reimbursement procedures, and, more recently, by developing managed care programs. These strategies have tended to focus on short-term utilization and cost control objectives. Less attention has been paid to addressing the more fundamental, underlying problems in the workers' compensation health care delivery system that have resulted in excessive worker disability, poor quality and high costs. For example, case management is rarely integrated within the occupational health care delivery system and usually focuses on managing costly cases once a worker has suffered significant disability rather than on disability prevention.

Our analysis of workers compensation system within Washington State led to the identification of four key challenges that must be addressed in order to improve quality. The challenges are:

- Appropriate administrative and financial incentives have to be developed to encourage the delivery of care that will lead to improved health outcomes, while maintaining the worker's freedom to choose a provider. In Washington State, injured or ill workers by law have the right to choose any licensed medical, chiropractic, osteopathic, or naturopathic physician for their treatment of work-related injuries or illnesses. Thus the challenge becomes how to craft incentives that will promote improved quality while maintaining patient choice.
- A second challenge concerns the appropriate level of system intervention. The impact of occupational injuries often transcends the worker, or even the employer. High rates of occupational injuries resulting in significant disability burden can have a broader impact on the productivity of a community. This suggests the need for a public health, community-based approach to quality improvement and injury prevention.
- The incidence of occupational injuries in most communities is relatively low. During any year, approximately 10% to 15% of all workers will sustain an occupational injury, most of which will be minor and involve little lost work time. The average community family practice physician may see two to three patients per month with an occupational injury. The challenge becomes how to develop interventions that prevent injured workers from "falling through the cracks" and thereby developing serious long-term disability. It would be costly and inefficient to use educational strategies for all community physicians. A more targeted approach is called for that can provide correct incentives to promote better quality, yet also provide a mechanism for timely identification of patients who may be at risk for serious long-term disability.
- Finally, quality improvement initiatives within workers' compensation must recognize the special characteristics and political context of this system. The distinguishing features of the workers' compensation system results from how benefits are paid (Franklin, Lifka and Milstein, 1998) and the nature of the historic legal agreement between employers and workers that established the workers' compensation system (Reville and Escarce, 1999). To be successful, policy changes and program initiatives involving workers' compensation must address the differing—and often conflicting—interests of employers and workers. The challenge becomes how to develop and sustain effective employer-worker partnerships that create opportunities for quality improvement initiatives within the workers' compensation system.

To address these challenges, the DLI embarked upon a series of research activities and policy studies that led to the initiation of a major quality improvement project known as the Occupational Health Services (OHS) project. This project benefited from information generated by a prior delivery system intervention undertaken to assess the effects of delivering workers' compensation health care through managed care arrangements.

MANAGED CARE PILOT

In 1993, the DLI initiated a major delivery system intervention, described in detail elsewhere (Kyes et al., 1999; Wickizer et al., 1999, 2001), to assess the effects of providing injured workers medical treatment through designated occupational health care networks under managed care arrangements. Known as the

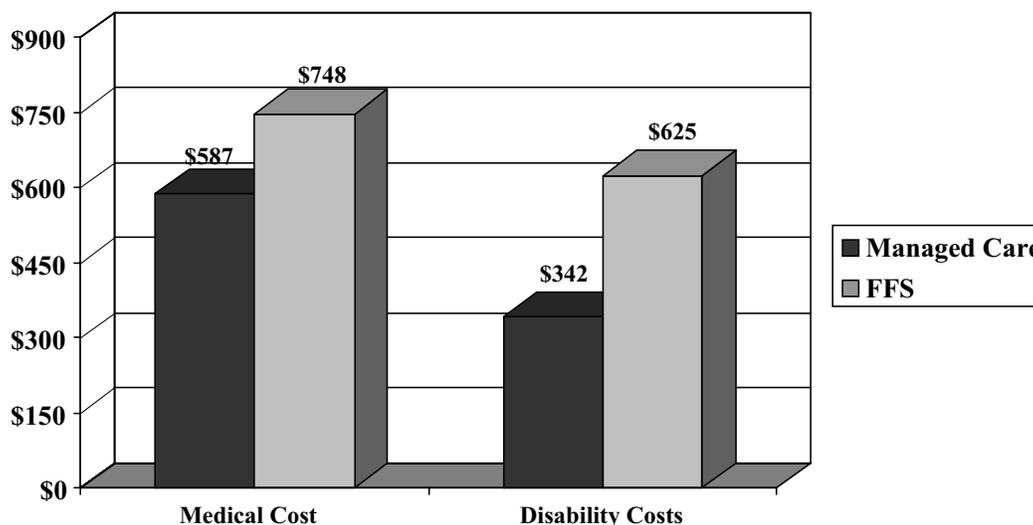
Managed Care Pilot (MCP), this intervention changed the method of payment from traditional fee-for-service, based on the DLI fee schedule, to experience-rated capitation. It also introduced important changes in the organization of care through an occupational medicine model that emphasized coordination of care and ongoing follow-up aimed at getting the injured worker back to work in a timely manner. This model also made extensive use of treatment guidelines, which were used concurrently as well as retrospectively to perform utilization management functions. Further, managed care providers received training through the health plans that enhanced their occupational medicine expertise.

A comprehensive evaluation of the MCP was conducted by a research team at the University of Washington. This evaluation compared the experience of patients under managed care with that of a comparison group of patients who received traditional fee-for-service care. No meaningful differences between the groups were found in either short- or long-term health outcomes (Kyes, Wickizer, Franklin et al., 1999; Kyes, Wickizer, Franklin, 2001). Patient satisfaction was lower among managed care patients (Kyes, Wickizer, Franklin, et al., 1999), but employer satisfaction was higher (Kyes, Wickizer and Franklin, 2003).

Important and statistically significant differences favoring managed care patients were found (Figure 1) in medical and disability costs (Cheadle, Wickizer, Franklin et al., 1999). (Workers in Washington State are eligible for disability payments if they miss four or more days of work due to an injury.) On average, medical costs per claim were 22% lower for managed care patients (\$587 versus \$748). The reduction in disability costs was even greater. This difference resulted primarily from fewer managed care patients being placed on disability (disability payments begin after four days of lost work time). Whereas 14.7% of the injured workers in the managed care group received time loss (disability) payments, 19.2% of fee-for-service patients did so. Moreover, managed care patients on disability had lower disability payments (\$2,332 versus \$3,446) than fee-for-service patients.

The managed care plans were not at risk for disability payments, only for medical costs. Disability payments were not included in the capitation rate but were made by DLI in the usual way. What then explains the lower disability costs among the managed care group? The evaluation did not collect data that allows this question to be addressed directly. However, it did collect extensive qualitative information as well as survey data that shed light on the issue. First, the qualitative information indicated the managed care plans improved the coordination of care and patient follow up, principally through the active use of case managers who worked at the clinics. Second, the managed care physicians frequently communicated with employers to discuss return to work and related matters. An employer survey, conducted as part of the evaluation, showed large and statistically significant differences in the quantity and perceived quality of patient-related information provided to employers by the managed care clinics as compared to the information provided by fee-for-service physicians (Kyes, Wickizer and Franklin, 2003). Third, the managed care clinics benefited from increased expertise and training. Each clinic medical director was a board certified occupational medicine physician and clinic physicians received ongoing training in occupational medicine. In combination these factors probably led to lower disability observed for the managed care patients (Wickizer, Franklin, Plaeger-Brockway et al., 1997).

Fig. 1—Washington State Managed Care Pilot Project: Differences in Medical and Disability Costs between Managed Care and FFS Patients



Source: Wickizer, et al., *Milbank Quarterly* V. 79(1), 2001.

The MCP suggested that health care quality and disability prevention could be improved by organizing care based on an occupational medicine model. However, Washington Industrial Insurance Laws guarantee workers freedom of choice to select their own attending physician precluding the use of managed care arrangements that might limit worker choice in some way (the DLI obtained a temporary waiver to establish physician networks for the MCP). The DLI undertook a 12-month policy study to examine options for developing a quality improvement initiative that would preserve the fundamental right of workers to choose their provider, yet offer the important benefits of organizing care around an occupational medicine model (Wickizer, Schwartz, Schulman et al., 1998). Recommendations generated by this policy study provided the foundation for a major quality improvement initiative, known as the Occupational Health Services (OHS) project, which is currently ongoing.

DESIGN OF THE OHS PROJECT

The primary goal of the OHS project is to improve health and disability outcomes for injured workers. A major design activity of the OHS project was to develop quality indicators to (1) establish expectations for the delivery of occupational health care, and (2) provide information to support the development of quality improvement activities. Expert panel meetings were convened in Seattle over a 6-month period beginning in May 1999 that reviewed existing scientific and clinical literature and treatment guidelines and, based on this review, developed quality indicators. Both generic occupational health performance indicators and condition specific indicators related to three common conditions—low back sprain, carpal tunnel syndrome and fractures—were developed. These performance quality indicators included the following:

- **Timeliness of submission of the report of accident:** percent of claims for which Report of Accident was received within two (2) business days of the first office visit.
- **Two-way communication with employer about return to work:** percent of claims for which two-way communication between the provider and employer about return to work is accomplished at the first visit when the worker is off or expected to be off work.
- **Activity prescription at each evaluation:** percent of workers for whom activity prescription discussed and documented at each evaluation (no more than once per week) when the patient is off work or expected to be off work.
- **Assessment for impediments to return to work:** percent of workers on time loss who have received assessment or referral for assessment of impediments to return to work by four (4) weeks of work loss.

These quality indicators are intended to enhance the timeliness of treatment, to foster improved return to work, and to encourage “best practice” in occupational health care. The full set of quality indicators developed for the OHS project is described elsewhere (Wickizer, Franklin, Mootz et al., 2004). These indicators were not designed to address directly or comprehensively problems regarding the overuse or underuse of occupational health care. The DLI addresses problems of overuse of medical care primarily through its utilization review program, which is designed to ensure that care delivered to injured workers is medically necessary and consistent with practice guidelines (Wickizer, Franklin, Gluck et al., 2004). Underuse of medical care is addressed to a limited degree by several quality indicators. For purposes of quality improvement related to disability prevention addressed by the OHS project, the key indicator that addresses underuse is the indicator noted above related to the provision of assessment of impediments to return to work. Other indicators that address this area of quality improvement relate to the provision of nerve conduction tests for patients with carpal tunnel syndrome, of MRIs for patients with back pain, and imaging tests for patients with fractures (Wickizer, Franklin, Mootz et al., 2004).

To promote occupational health care practice patterns consistent with the OHS goal of quality improvement, the DLI developed financial incentives for selected quality indicators. For example, the physician’s fee for sending in the Report of Accident was increased by 50% from \$24 to \$36 if the report was received within two business days.

OHS PILOT SITES

The OHS project was designed as a community-wide delivery system intervention and was implemented on a pilot basis through the development of two centers of occupational health and education (COHE). One was established by a large hospital, located in the south Seattle metropolitan area, which had an active occupational health program already established. This region represents a competitive urban health care market with an established manufacturing and industrial business environment. The other COHE was established by a rehabilitation hospital in Spokane, Washington that serves a large geographic area in eastern Washington. This region offers a more rural industrial base with a different industrial mix oriented toward agriculture and a more geographically dispersed but less competitive health care

environment. The Seattle COHE has been fully operational since July 2002. The Spokane COHE became operational in June 2003.

The COHE is expected to recruit physicians for the pilot on a community-wide basis, including primary care providers, specialists, and chiropractors; to track care delivered by these providers; to sponsor provider training in the form of continuing medical education (CME); to arrange provider mentoring by local senior clinicians; and, when needed, to initiate care coordination activities. In short, as its name implies, the COHE is to function in a central role with regard to providing the community of workers, employers, and providers with occupational health education, expertise, care coordination and clinical services. Its role is essentially that of a catalyst for quality improvement within the community and as the identified entity working to resolve problems and issues that may result in (avoidable) long-term disability. A research team at the University of Washington is conducting an evaluation of the OHS pilot.

The OHS project represents a community-level quality improvement intervention. Its goal is to improve the quality of occupational health care on a community-wide basis rather than in a single organization or treatment setting. To achieve its goals, the OHS project must address certain impediments to quality. These impediments are highlighted below.

Infrequent Use of Best Practices Resulting in Poor Quality

Problems regarding quality have been widely documented for general medical care (Schuster, McGlynn and Brook, 1998; McGlynn et al., 2003; Chassin and Galvin, 1998; Committee on the Quality of Health Care in America, 2001; Kohn, Corrigan, and Donaldson, 1999), but understanding is less developed for workers' compensation health care. What evidence is available (Greenough and Fraser, 1989; Javid, 1992; Katz et al., 1998) suggests that quality problems are widely present in the workers' compensation system. Examples of quality occupational health best practices include provider communication with employers about return to work, early detection of impediments to recovery, timely access to care and diagnostic procedures, timely decisions on the value of surgical interventions, and adequate occupational history information that will delay adjudicative decisions that can postpone necessary treatment.

Efforts to address quality problems through the OHS project focus largely on improving technical aspects of care, though we recognize the importance of the interpersonal aspect of care (Ware et al., 1983; Wickizer et al., 2004). The OHS quality indicators are intended to address problems and deficiencies in the provision of occupational health care. It is anticipated the COHEs will track the degree to which each OHS provider achieves the quality benchmarks and feed back this information on a periodic basis. Other OHS activities that address the problem of poor quality include the provision of CME, making available mentoring of OHS participant providers by senior clinicians, and conducting academic detailing.

Ineffective Disability Prevention

Improving disability prevention is a key goal of the OHS project. Chronic disability from work-related conditions has devastating health and quality of life consequences for affected workers; early identification of care for clinical and biopsychosocial issues that can lead to long term disability are critical concerns for providers to assure successful patient outcomes.

In an earlier study, we showed that injured workers with musculoskeletal injuries who had not returned to work by three to four months were unlikely to return to meaningful employment (Cheadle et al., 1994). To address the problem of long-term disability, workers' compensation insurers and self-insured employers often rely on external case managers to perform "disability management" after a case has incurred several months of time loss. This form of delayed, reactive case management offers little real chance of preventing long-term disability and returning the worker to meaningful employment.

The OHS project addresses disability prevention through several related activities. Selected quality indicators require time-linked action, e.g., ordering nerve conduction tests to determine presence of carpal tunnel syndrome if the patient is expected to be off work for two or more weeks. One indicator listed previously (#4) specifies that workers off work for four weeks have an in-depth assessment to identify important barriers to return to work. Other quality indicators promote the use of occupational best practices aimed at getting the patient back to work in a timely manner.

Administrative Delays

Delays in claim authorization commonly occur because the accident report is not filed in a timely manner by the physician or because it lacks the necessary information for the claims manager to make a determination of work-relatedness. Such delays can pose significant barriers to the initiation of prompt treatment and ultimately increase the patient's risk of incurring extended disability. The problem of administrative delay is addressed by the quality indicator pertaining to submission of the report of accident form as well as other quality indicators.

Poor Communication

Poor communication is a significant problem in workers' compensation. Rarely do providers communicate with employers about return to work issues or job modification. Communication between providers and claims managers is often sporadic and ineffective. Such communication represents another impediment to quality. The OHS project addresses this problem by providing case coordination through the COHE to facilitate improved communication among clinical and administrative parties. Further, one of the project's quality indicators directly addresses the issue of provider-employer communication.

Inadequate Reimbursement and Misaligned Financial Incentives

The need to align financial incentives to promote quality is a central theme of the IOM report *Crossing the Quality Chasm* (Committee on the Quality of Health Care in America 2001). This same problem arises within workers' compensation. Inadequate reimbursement and misaligned financial incentives pose significant impediments to quality improvement. The OHS project aligns financial incentives with quality improvement objectives and increases provider reimbursement for selected occupational health services linked to the quality indicators. For example, OHS participant physicians can receive from \$14 to \$42 for time spent making telephone contact with employers or other parties to coordinate care or discuss return to work matters.

Lack of Patient Care Tracking Data

Quality improvement requires the systematic collection of reliable performance data at the individual provider level on patient care activities. Such data are sometimes collected in integrated (HMO) delivery systems, but are almost never collected in the general fee-for-service system. The development of data tracking systems that allow providers and their staff to determine how they are performing on quality indicators and real-time reminders for key clinical and administrative tasks are central functions of the COHE.

Lack of Evidence-Based Care

The need for improved clinical and scientific evidence to guide clinicians in their patient care activities is widely recognized (Lohr, Eleazer, and Mauskopf, 1998; Connis et al., 2000). Significant progress has been made in recent years using evidence-based care to treat certain chronic illnesses such as diabetes and asthma (Frijiling et al., 2002; Franz et al., 2003; Jadad, 2002). However, the field of occupational medicine has lagged far behind these developments. The OHS project has sought to address this impediment to quality by developing evidence-based quality indicators and using these indicators as the foundation for quality improvement.

CONCLUSIONS

It is too early to know whether the OHS project will achieve its objectives. Preliminary data gathered for the evaluation suggest that at least in certain areas, the project is having a positive effect. The Seattle OHS pilot site began active recruitment of providers in June 2002 and by December 2004 had recruited over 170 physicians and chiropractors. Over this same period, these providers served as the attending doctor for over 12,000 patients. The process evaluation is tracking several quality indicators via the DLI's computer claims system, including the submission of the report of accident, which is viewed as an important marker related to reducing administrative delays that often lead to unnecessary time loss. As noted earlier, this quality indicator specifies that the report of accident be submitted within two business days. Physicians submitting the accident report within two days receive 50% higher payment (\$36 instead of \$24). Preliminary data covering the period June 2002 through December 2003 show that over 60% of the OHS physicians in the Seattle pilot site met this quality benchmark. In the year prior to June 2002, only 8% met this quality benchmark. At the same time, the proportion of physicians submitting the accident report later than one week dropped from 24% to 11%.

Guided by a set of quality (performance) indicators, the OHS initiative has sought to address key problems in the delivery of workers' compensation health care, with the aim of improving outcomes and reducing disability. Targeted quality improvement activities provided through the OHS pilot centers for occupational health and education (COHE) include case coordination, patient care tracking, continuing medical education, case consultation, and provider mentoring. An important underlying assumption of the OHS project is that occupational health care provided in the first month or two of a claim is of critical importance for disability prevention. After that time, chances of preventing long-term disability diminish rapidly. The evaluation now underway will determine whether, and the extent to which, the OHS project is able to improve the quality of care delivered through the workers' compensation system and ultimately reduce the burden of disability among injured workers.

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Relevance of the CAHPS® Consumer Assessment Survey for Workers' Compensation Medical Care

Donna O. Farley

INTRODUCTION

The quality of medical care provided to individuals for work-related illnesses or injuries is important not only to employers and state programs, but also to the workers receiving the care. Workers' confidence in and satisfaction with workers' compensation care will influence their attitudes about the quality of the coverage offered by their employers as well as the performance of the larger workers' compensation system. In this context, it is important for providers, employers, and state officials to have information about the experiences that individuals had with workers' compensation medical care and their judgments about the quality of that care.

Feedback from consumers about the quality of their health care complements other measures of the technical quality of clinical care. For example, substantial work has been done on the development of indicators defining appropriate practices for surgical procedures, use of prescription medications for specific health conditions, or management of a chronic disease such as diabetes. However, all of these clinical procedures could be performed perfectly while still leaving the patient unsatisfied, if the provider has not effectively engaged the patient in the care process and provided the care in a prompt and respectful manner.

This paper explores the potential applicability of one health care survey and reporting system to workers' compensation medical care. This system is the Consumer Assessment of Health Plans (CAHPS®), which was developed by a consortium of research organizations in collaboration with the federal Agency for Healthcare Research and Quality (AHRQ, previously named the Agency for Health Care Policy and Research) (Crofton, et al., 1999). CAHPS has been used across the country by large employers, Medicare, Medicaid programs, states as employers, and other sponsors to obtain information from their constituencies about their experiences with health insurance plans and the health care and related services they received. The National Committee for Quality Assurance also uses CAHPS in its accreditation of managed care health plans. The CAHPS survey and reporting methods, which have been developed and tested over many years, could be a useful resource for application to the workers' compensation environment.

OVERVIEW OF CAHPS®

As buyers of health care have striven to get more value for their money, they have demanded better information to help them compare and evaluate the performance of health plans. Because the experiences and satisfaction of the people enrolled in a plan are important indications of performance, numerous

employers, government agencies, accreditation bodies, consumer groups, and health plans have moved to develop and implement consumer surveys.

To interpret the consumer ratings of a given health plan most effectively, these ratings need to be compared to the same ratings for other plans. In response to this need, AHRQ initiated CAHPS to develop and evaluate a standard comparative survey and reporting methodology for use in a wide variety of applications and settings across the country. AHRQ issued cooperative agreements in 1995 with RAND, Harvard University, the Research Triangle Institute, and Westat to collaborate in this effort. The five-year research and development project was designed in two phases with four objectives:

Phase 1: Design, development, and testing of surveys and reporting methods

1. Produce reliable, valid, and rigorously tested survey protocols for collecting information from consumers regarding their assessment of health plans and services.
2. Develop and test the effectiveness of different formats for conveying the resulting information to consumers.

Phase 2: Demonstration of survey and reporting implementation and effects

3. Demonstrate the resulting survey protocols and reporting formats in real world settings, and provide feedback for future revisions.
4. Evaluate the usefulness of consumer survey results to consumers, and purchasers acting on their behalf, in making informed selections of health care plans and services.

It is important to make it clear that the CAHPS survey is *not* a consumer satisfaction survey per se—there are no questions that ask respondents how satisfied they are with some aspect of their care. The CAHPS survey measures health plan performance using (1) global ratings (i.e., ratings of primary doctor or nurse, health plan) and (2) consumer reports of their experiences with using a health plan (i.e., getting needed care, getting care without long waits, how well doctors communicate, treated with courtesy and respect by office staff, and health plan customer service). The ratings are individual items using 0-10 response scales. The reports of experiences are composite scores that are averages of responses to sets of individual items using three-category or four-category response options (AHRQ, 1999).

There are several different CAHPS survey questionnaires—for individuals in commercial plans, Medicare, Medicaid recipients, and other specific population groups. Each survey questionnaire consists of a set of core items that is used on all surveys plus other items specific to the population for which the survey is fielded. Within each enrollee group (e.g., commercial, Medicaid) there are separate questionnaires for adult and child respondents (with a parent or guardian responding for the child). The CAHPS questionnaires are on the AHRQ web site at www.ahrq.gov/qual/cahps/cahpques.htm and information on the survey and reporting kit is on the CAHPS Survey Users Network web site at www.cahps-sun.org/home/index.asp.

The core items consist of the items for rating the primary provider and health plan, plus the items used to calculate the composite scores for reports of experiences with the health plan. The CAHPS 1.0 survey and report had four rating items and seven report composites. The number was reduced to two ratings and

five composites for CAHPS 2.0 in response to findings that consumers were confused by too much information (See Appendix A). Both the choice of topic areas and the specific items used in the CAHPS survey have been tested extensively by the CAHPS consortium (Harris-Kojetin et al., 1999; Hays et al., 1999; Brown et al., 1999; Fowler et al., 1999; Marshall et al., 2001; Zhan et al., 2002; Zaslavsky et al., 2002). The survey continues to be tested as it evolves.

A basic feature of the CAHPS survey design is that the respondent is asked to think about all the care they received over a specified time period when they respond to questions in the survey. Initially, the recall period was twelve months. The recall period was shortened to six months for the Medicaid survey because many beneficiaries were not on Medicaid for a full year. Medicare also adopted a six-month recall period because respondents had trouble remembering care obtained longer than six months ago. The commercial plan surveys continue to use a twelve-month recall period.

The CAHPS report template uses two formats to present survey results. *Star measures* summarize relative plan performance, and *bar graphs* summarize absolute performance. For the star measures, two stars are shown for plans with survey results that are not significantly different from the average for all other Medicaid plans in the state; one star for plans that scored significantly lower than average, and three stars for plans that scored significantly higher than average. Sponsors of the CAHPS survey (e.g., employers, Medicaid programs) have differed in how they use the stars or bars in reporting CAHPS results. Some have used both the stars and bars, others have chosen to present only the star measures, and a few have used only the bars. Refer to Table 1 and Figure 1 for examples of each reporting format. Table 1 shows a star table used by the New Jersey Medicaid program, and Figure 1 shows bar charts used by the Iowa Medicaid program.

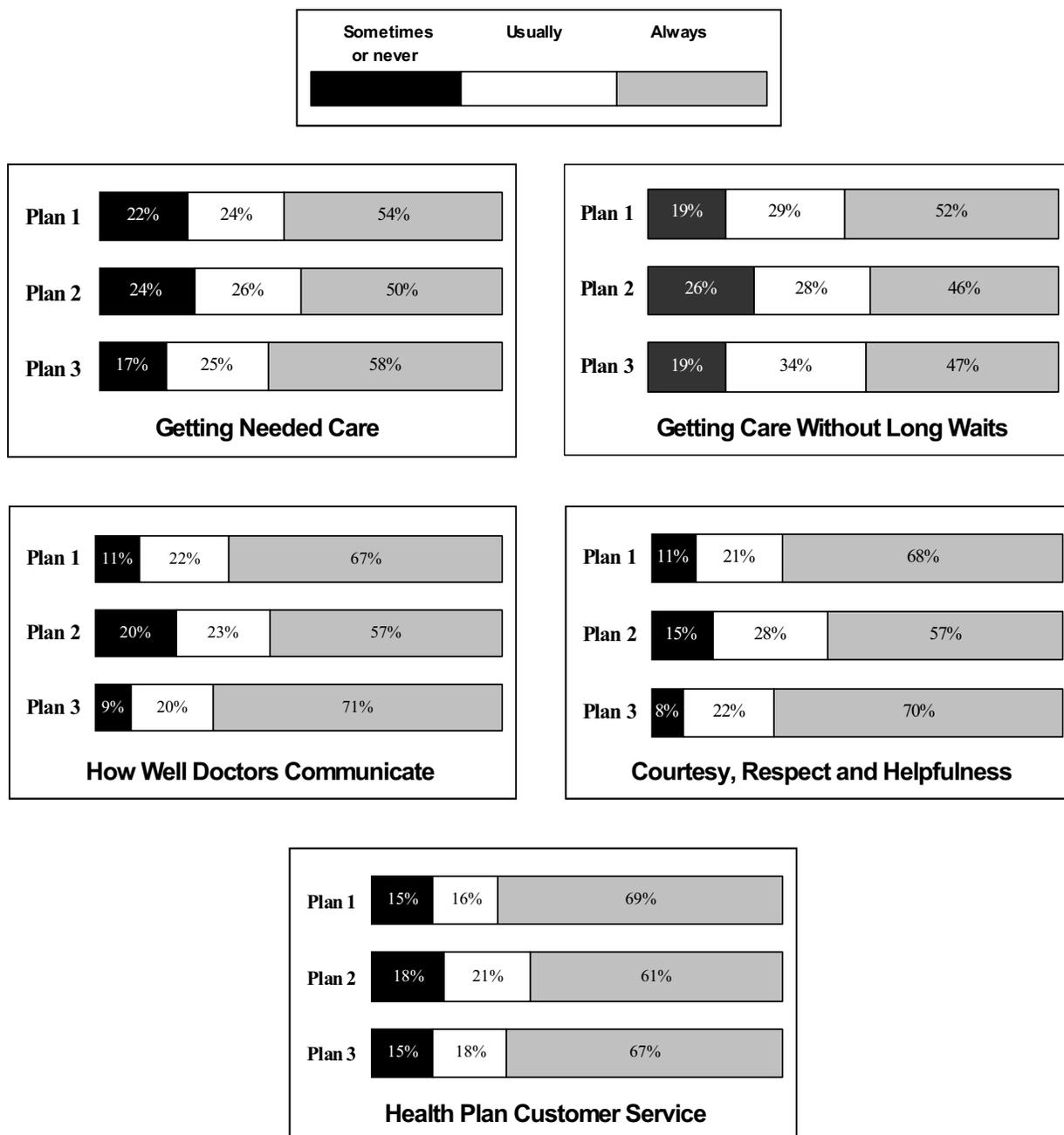
CONSUMER USE OF PLAN PERFORMANCE INFORMATION

Research on consumer health plan choice has shown that many factors play an important role in plan choices, including the services covered, premiums and out-of-pocket costs to the consumer, maintaining established relationships with providers, and freedom of provider choice (Mechanic et al., 1990; Marquis and Rogowski, 1991; Davis et al., 1995; Scanlon et al., 1997; Sainfort and Booske, 1996; Gibbs et al., 1996; Tumlinson et al., 1997). Although there is some evidence that consumers are likely to consider information about plan performance when it is available, the empirical evidence is mixed about how they use it and its relative importance in their decision-making (Scanlon et al., 1997; Marshall et al., 2000).

When making health plan choices, consumers seem to give a lower priority to considerations of quality and service than to the scope of coverage, provider choice, or premium costs (Sainfort and Booske, 1996; Castles, et al., 1997; Knutson, et al., 1997; Robinson and Brodie, 1997; Tumlinson et al., 1997; Chernew and Scanlon, 1998). However, Sainfort and Booske (1996) found that consumers' use of plan performance information tends to increase as their exposure to the information increases and they learn how to interpret it. Recent studies also have found that consumers are more likely to use performance information to avoid low-rated health plans, which is consistent with the decision-making science that consumers tend to make decisions more to avoid risk than to achieve gain (Hibbard et al., 2000; Scanlon et al., 2002).

The CAHPS field demonstrations were performed to extend our knowledge of consumer use of plan performance information. The demonstrations (1) assessed consumers' reactions to the CAHPS information and reports, (2) tested the extent to which having CAHPS information affected the plan choices consumers made, and (3) refined the CAHPS products based on feedback from users.

Figure 1— Bar Displays of CAHPS Measures for the Iowa Medicaid Health Plans



Evaluating the effect of CAHPS reports on health plan choices is analogous to evaluating the effectiveness of a clinical intervention. The *effectiveness* of a clinical intervention depends on its *efficacy* in the treated population and *the proportion of the target population reached* for treatment. Various factors determine the effectiveness of CAHPS in informing consumers' health plan choices, including how much consumers pay attention to the health plan performance information, whether and how they weigh differences among plans in making their choices, and which plans they ultimately choose. All three of these behaviors are influenced by the characteristics, preferences, and attitudes of different consumers; by the characteristics of health plan options available to them; and by the costs and benefits of acquiring different types of information. Moreover, there is a feedback loop between selection behavior and ultimate attitudes about the plan options—the very act of gathering and considering information, and weighing available options, is likely to change a consumer's attitudes.

WHAT WE HAVE LEARNED FROM CAHPS

The demonstrations performed by RAND, Harvard, and RTI provided rich information on the reactions of sponsors, health plans, and consumers to both the CAHPS survey and the reports presenting comparative information on health plan performance on CAHPS. Some highlights of these findings are presented here.

The CAHPS Survey

A fundamental issue to be tested was the extent to which the CAHPS survey discriminates among health plans on the various ratings and report composite measures. The CAHPS demonstrations found significant variation among health plans on the CAHPS measures (Solomon et al., 2002; Short et al., 2002; Farley et al., 2002a). In some applications, few differences among plans were found. We were confident in interpreting these as valid results, given that differences indeed had been found in many diverse settings and sets of health plan choices.

Feedback from the demonstrations indicated that the CAHPS survey covers the topics that are most important to sponsors and consumers, while keeping to the goal of a 15 to 20-minute interview. Sponsors typically were grateful they could rely on an external authority to maintain discipline over the content and length of the interviews. Although they identified some flawed questions and other needs for improvement, the sponsors generally perceived that the research, testing, and expertise that went into CAHPS went far beyond what they could have done on their own. They also valued the off-the-shelf products, consisting of the questionnaires as well as detailed instructions for sampling and data collection methods (Carman et al., 1999).

The demonstrations revealed pervasive misunderstandings in the field about how surveys are conducted and how their results can be interpreted. Such misunderstandings contribute to distrust of survey-based plan performance information by many consumers and some individuals within sponsoring organizations. Consumers may be suspicious that the health plans have influenced the results, believe that the sample does not represent the health plan members, or believe that the individuals in the sample are not really like themselves (Du and Brown, 2001). There also are concerns that some CAHPS ratings measure physicians' performance more than that of the health plan, or that the ratings conflicted with

preconceived ideas. In the New Jersey Medicaid program, for example, some of the CAHPS ratings contradicted previous perceptions by some of the health benefits coordinators regarding the health plans (Farley et al., 2002a). The coordinators expressed concern about the reports and ratings and preferred not to use them when working with beneficiaries who were choosing HMOs.

Several sponsors expressed concerns about the high costs of fielding a CAHPS survey, which derive from the requirement to have multiple within-plan survey samples to make plan comparisons. These costs are not affordable for many smaller organizations, so use of CAHPS generally has been limited to large sponsors such as large private employers, Medicaid agencies, federal agencies (e.g., Medicare), and states as employers (Carman et al., 1999). Efforts continue to reduce questionnaire length, but reduction in sample size also will decrease statistical power.

Reporting CAHPS Performance Comparisons

Sponsors participating in the demonstrations, as well as other CAHPS users, varied widely regarding which CAHPS rating information they wished to provide to consumers and how they preferred to present it in comparative reports. There was little consensus about the “stars and bars” format, reference groups for comparisons of health plans, or standards for identifying significant differences in plan scores. Some sponsors and consumers liked the bar graphs that display the distribution of responses on a CAHPS measure; others preferred the stars that display summaries of relative performance, even though they tended to have trouble interpreting them correctly (Carman et al., 1999). For example, both the Florida and New Jersey Medicaid programs used only the “stars” format to present comparative information on health plans’ CAHPS performance (Farley et al., 2000; Farley et al., 2002a). In Iowa, however, the Medicaid program used only the bars format (Farley et al., 2002b). They believed that the CAHPS stars would be misinterpreted because other rating systems (e.g., hotels) already use stars that are anchored in absolute values.

A majority of beneficiaries who received CAHPS reports reported they liked and used them (Short et al., 2002). The reports also have been found to influence their knowledge, beliefs, and decisions (Hibbard et al., 2002.) Paradoxically, beneficiaries with no previous experience with consumer assessment data who received a report indicated they were less confident in their choice of health plan than those who did not receive the CAHPS report. Beneficiaries who receive CAHPS for the first time may report less confidence because they find the decision more complex as a result of having more information than they had in the past, or alternatively, because the ratings of their own health plans did not conform to their prior perceptions.

To enhance the use of CAHPS reports by consumers, we learned that the CAHPS information should be distributed together with other enrollment information (McCormack, et al., 2000; Farley, et al., 2002a). If distributed separately, consumers may not associate the CAHPS report with their enrollment process (especially those not previously familiar with CAHPS), or they may complete enrollment before they receive the CAHPS report.

Both the contents of the CAHPS ratings and the format for presentation influence how consumers will use the ratings as they make health plan choices. A long report makes it difficult for consumers to find the ratings information quickly, thus discouraging them from using the report. The visual impact of the

report also may attract or detract consumers from using it, or may lead users' eyes to certain items on the report pages. There was strong consensus from the demonstrations that the first CAHPS report was too long. In response to this feedback, the CAHPS 2.0 survey contains fewer performance dimensions, and the report template is much shorter and in a format that is easier to read.

Consumer Use of the CAHPS Report

Findings from the CAHPS demonstrations and laboratory studies suggest that privately insured consumers and Medicaid beneficiaries use plan performance information similarly (Short et al., 2002; Spranca et al., 2000). The laboratory experiments simulated health plan choices, in which privately insured and Medicaid consumers were asked to look at comparative CAHPS information on hypothetical health plans (along with other plan features), and were asked to choose among the health plan options. Participants were more likely to choose health plans that performed better on CAHPS according to the reports (Spranca et al., 2000; Kanouse et al., 2000). These laboratory experiments provided evidence of the efficacy of CAHPS plan performance information under controlled laboratory conditions. In the Medicaid laboratory experiment, Medicaid-eligible individuals also were willing to trade off valued benefits (dental or transportation) for plans with higher ratings (Kanouse et al., 2000).

The CAHPS report was found to be noticed most by consumers who were actually selecting a health insurance plan—that is, new enrollees, current enrollees who were switching plans voluntarily, or those whose current plan was no longer offered. Outcome evaluations found that reporting of CAHPS information to consumers influenced health plan choices only under certain circumstances, and the effect was small. In Harvard University's Washington state demonstration, consumers who could not stay with their old plan were more likely to choose highly rated plans than consumers who could stay in their existing plan (Guadagnoli et al., 2002). RTI found small effects of some of the CAHPS dimensions on the health plan choices of employees of two firms (McCormack et al., 2000). RAND also found a small effect of CAHPS on plan choice by Medicaid beneficiaries, as discussed below.

New Jersey Medicaid Demonstration. The goal of the New Jersey Medicaid CAHPS demonstration was to assess the effects of CAHPS health plan performance information on plan choices and decision processes by Medicaid beneficiaries (Farley et al., 2002a). The study sample was a statewide sample of all new cases in New Jersey Medicaid that chose health plans during April 1998. An experimental design was used such that new Medicaid cases were randomly assigned to experimental or control groups. The experimental group received a CAHPS report along with the standard enrollment materials, and the control group did not. We used HMO enrollment data obtained from the state in June 1998 for all the cases in this sample, and we also collected post-enrollment survey data for a subset of these cases from July to October 1998.

No effects of CAHPS information on HMO choices were found for the total sample. Further examination of survey data revealed that only about half the Medicaid cases said they received and read the plan report. There also was an HMO with dominant Medicaid market share but low CAHPS performance scores. The subset of cases who read the report and did not choose this dominant HMO were found to choose HMOs with higher CAHPS scores, on average, than did those in an equivalent control group. Thus, as intuition suggests, health plan performance information can influence plan choices by Medicaid beneficiaries only if they actually read it and if performance on CAHPS is more important than other

health plan features. These findings suggest a need for enhancing dissemination of the information as well as further education to encourage informed choices.

Iowa Medicaid Demonstration. Working in collaboration with the Iowa Medicaid program, RAND performed a second test of the effects of CAHPS information on health plan choices by Medicaid beneficiaries (Farley et al., 2002b; Damiano et al., 2002). The sample for this evaluation was all new cases entering Iowa Medicaid in selected counties during February through May 2000. These cases were assigned randomly to experimental or control groups for the study. The control group received standard Medicaid enrollment materials, and the experimental group received these materials plus a CAHPS report.

When beneficiaries initially sign up for Iowa Medicaid, they are assigned to a default health plan and are informed what their default plan is. Thus, the plan choice made by beneficiaries in the Iowa Medicaid sample was a choice to switch plans, rather than the simple choice of a new health plan that the New Jersey Medicaid beneficiaries made.

We found that CAHPS information had no effect on decisions to switch from the default health plans by Iowa Medicaid beneficiaries. This result is similar to our null findings for the entire New Jersey Medicaid sample. We did not perform a survey of the beneficiaries in our Iowa Medicaid sample, so we could not identify those who reported noticing and using the CAHPS report for in-depth analysis.

Factors Contributing to Limited CAHPS Effects

These results of weak CAHPS effectiveness in the field differ substantially from the observed effects on plan choice in the laboratory experiments, which tested CAHPS efficacy. It will be important to identify which factors might be contributing to its limited effects in the field, with the goal of increasing its effectiveness. Use of CAHPS report information is influenced by a variety of conditions (Short et al., 2002). For example, consumers must receive and notice the CAHPS report, and they must be able to easily understand the information it contains. Furthermore, they need to be receptive to the CAHPS information, which may include having a perceived need for the information, trusting its accuracy and objectivity, and viewing it as relevant to their unique health status or health care needs. A deficiency in any of these conditions is likely to diminish CAHPS impacts.

We know from survey responses in the New Jersey Medicaid evaluation that half of the Medicaid beneficiaries who were mailed CAHPS reports did not read them or even remember receiving them. This is consistent with findings from other CAHPS demonstrations that 24 to 77 percent of consumers receiving a CAHPS report looked at and remembered it (Berkman et al., 2001; Short et al., 2002). We expect that a similar issue occurred in the Iowa Medicaid evaluation, but without survey data, we could not estimate the proportion of Iowa beneficiaries who remembered using the report.

Our research suggests that noticing or using the report may not be the only factor attenuating CAHPS effects on plan choice in the field. For the subgroup of New Jersey Medicaid beneficiaries who had used the report, the CAHPS effect was much smaller than the effect observed in the Medicaid laboratory experiment that used hypothetical choices.

In Iowa, the new Medicaid beneficiaries were facing a form of switching decision because they knew which default plan they would be assigned to if they did not make another choice, even though they were not enrolled at the time. Previous research has found an inertia effect where consumers tend not to switch enrollments unless stimulated by a substantial change in the relative merits of the health plans available to them (Buchmueller and Feldstein, 1996; Buchmueller and Feldstein, 1997; Scanlon et al., 2002). It is difficult to predict inertia effects for new Medicaid enrollees. Inertia might not be found because most of our study population did not yet have experience as members of their default health plans, and they would give up little by choosing another option. On the other hand, they might be more willing to stay in a plan to which they were assigned because they had no prior knowledge about it, and they assumed the plan would serve them well unless they had a bad experience after enrolling.

In theory, CAHPS information should serve as a useful tool to assist beneficiaries in making informed health plan choices as well as to inform quality assessment activities by survey sponsors. However, there is a growing body of evidence that the value of CAHPS reports in consumer decision making may be limited to the subset of consumers who actively study the information they are provided. Even for receptive consumers, the information may make a difference only when (1) there are large differences in ratings between plans, (2) the ratings are discordant with previously held beliefs about plan quality, and (3) the reports are easy to read and understand.

What remains to be seen is whether some of the conditions needed for Medicaid beneficiaries to use CAHPS reports will occur over time. This research on CAHPS effects was performed soon after the initial introduction of this new source of plan performance information. Consumers in both commercial and Medicaid insurance sectors were just beginning to learn how to use the information in making health plan choices; as they learn, larger percentages of them may notice and use it. At the same time, research is continuing with the goal of refining our ability to build and disseminate effective reports that are readily usable by the consumer.

NEW DIRECTIONS FOR CAHPS

The second cycle of CAHPS (CAHPS 2) began in June 2002 with a consortium consisting of RAND, Harvard University, American Institutes for Research, and Westat working in collaboration with AHRQ. Building upon the achievements in the first CAHPS cycle (which we call CAHPS 1), the second cycle of is pursuing new pathways in several domains. These new efforts were identified from lessons learned during CAHPS 1, with the goal of continuing to improve existing products and to extend these scientifically grounded consumer assessment surveys and reports into other areas. Four key areas of work are summarized here.

- *Evidence-based consumer reports.* Substantial progress was made in CAHPS 1 on expanding the science of consumer reporting, but we also learned that each CAHPS sponsor had strong preferences regarding format for reporting the survey results (stars versus bars, other symbols) as well as overall design of the report document. For example, most Medicaid sponsors had little choice in the shape and size of the report because it had to fit in existing envelopes used to mail enrollment materials. Some sponsors preferred to include the CAHPS performance information as a component of a larger report, rather than use a separate document. We

learned that we needed to systematically assemble evidence for many aspects of the CAHPS report design and dissemination. During the first year of CAHPS 2, we are gathering existing evidence from the relevant sciences—for example, cognition science, decision science, social psychology, social marketing, health education—and are performing a structured assessment of the evidence for the various aspects of reporting. Where science is found to be weak or missing, we are establishing a research agenda to be performed in the remaining years of CAHPS 2.

- ***Applications for quality improvement.*** We were reminded in CAHPS 1 that the health plans themselves, as well as provider groups providing care within these plans, are important stakeholders that clearly are affected by consumer assessment reports on the services they provide. The CAHPS consortium received frequent feedback from these stakeholders that the survey, as currently designed, does not give them actionable information they can apply in their quality improvement processes, to ultimately perform better on CAHPS measures. Therefore, in CAHPS 2 we are developing and assessing approaches and tools to make CAHPS information more useable for health plans and providers. This work will culminate in field demonstrations of quality-improvement initiatives using the quality-improvement tools developed. As a first step in this process, we are conducting market research interviews with health plans, provider groups, and a variety of other stakeholders. In these interviews we are seeking their views on the strengths and weaknesses of the current CAHPS products, issues to be addressed for consumer reporting and quality improvement, and suggestions for modifications.
- ***Three-level CAHPS survey.*** During CAHPS 1, work had begun on developing a CAHPS survey to obtain consumer assessments at the level of the provider group, with plans to extend that work to the individual provider level. This work continues in CAHPS 2, with the goal of establishing one survey instrument that encompasses questions applying to each of three levels—plan, provider group, and individual provider—and is designed so that survey data can be rolled up (or down) from one level to the next. This work involves not only development of an appropriate set of survey items, but also the specification of sampling frame, sampling strategy, data collection, and data file construction, so that survey results can be useful to the sponsors and technically valid. The stakeholder interviews identified above are identifying relevant issues and stakeholder preferences for this survey approach, as well as for applying a CAHPS survey at the group and provider levels.
- ***CAHPS in other populations or settings.*** Even as work continues on refining the core CAHPS products, sponsors have approached AHRQ for development of other products tailored to specific populations or settings of care. For example, CAHPS surveys and reports were developed for Medicare managed care and fee-for-service sectors during CAHPS 1. Work is underway in CAHPS 2 on products for hospital inpatient services, dialysis facility services to end-stage renal disease patients, services for persons with mobility limitations, services for American Indians, and nursing home care. The diversity of these applications suggests that CAHPS products also could be developed for workers' compensation medical care.

RELEVANCE FOR WORKERS' COMPENSATION MEDICAL CARE

When considering the applicability of the CAHPS survey and report to workers' compensation medical care, the first step should be to examine these products in the context of the goals to be achieved in this setting. CAHPS was designed initially to provide comparative information for consumer choice of health plans, but increasingly it is being used for other applications, such as sponsors' monitoring of health plan or provider quality, internal quality improvement activities, and payment policies that reward performance. The CAHPS survey is a scientifically proven data collection instrument. Its usefulness to any given sponsor will be determined by its fit with the sponsor's goals.

Possible CAHPS Applications for Workers' Compensation

Decisions regarding the adaptation of a CAHPS survey to workers' compensation should be guided by how sponsors would want to use the CAHPS consumer assessment information generated by the survey. Possible uses are to provide:

- Feedback to workers' compensation plans and medical care providers on workers' views of their performance
- Information to survey sponsors for use in selection and monitoring of workers' compensation plans and providers
- Information to workers for choice of a workers' compensation plan or provider
- Comparisons of the performance of a given set of workers' compensation plans and provider to benchmarks of performance of similar groups on a larger scale.

A sponsor could pursue one or all of these uses, or others not listed here. The first two of these applications—feedback to plans and providers and information for sponsors—will be relevant regardless of the design of a state's workers' compensation program. The third application will be relevant only if workers have a choice of plans or providers. The use of benchmark comparisons will be feasible only if a sponsor has CAHPS data (or data from any other standard survey) for a large number of plans or providers that can be used to develop the benchmarks. On a larger scale, if multiple sponsors use the survey, the benchmarking opportunities become richer.

Basic Steps for Developing a Workers' Compensation CAHPS Survey

A key question to be addressed in developing a CAHPS survey for workers' compensation medical care is, "What is the important information to collect?" The answer should be driven by users' information needs, which in turn are driven by how they plan to use the survey results. This answer will guide decisions on survey contents, sampling strategy and reporting.

The same principles and developmental steps used for existing CAHPS surveys would be applied in designing a survey for workers' compensation medical care. Based on past experience with CAHPS surveys, a reasonable estimate for the time required for the full developmental process is approximately one year. The five basic steps involved in the process are:

- *Domains.* Identification of the topic areas (referred to as domains) of importance to workers with respect to their medical care, using information already available from existing CAHPS domains and conducting focus groups with workers to specifically address domains unique to workers' compensation.
- *Survey items.* Development of survey items that address specific topics of importance to workers within each domain identified, using existing CAHPS items as well as developing new items that expand upon items in the existing CAHPS domains and that address new workers' compensation domains.
- *Cognitive testing.* Test survey items in one-on-one interviews with workers to ensure that workers perceive the items as covering the topics as intended for the survey.
- *Field test.* Collect survey data in a pilot test to further test the items for psychometric performance, relationships between items and the domains they represent, and relationships among the individual items.
- *Instrument and protocols.* Finalize the survey instrument and prepare written protocols that provide survey sponsors with instructions for establishing the survey sample and using the survey instrument for data collection.

Careful attention to technical integrity will ensure that sponsors are using a scientifically sound questionnaire that yields reliable and valid information, regardless of the mode of survey administration. In this process, a balance must be sought among validity, statistical power to interpret results, respondent burden, and costs of survey administration.

Appendix A

CAHPS® 2.0 Reporting Composites

Adult Survey Composites and Items Response format

Listed on the AHRQ web site at www.ahrq.gov/qual/cahps/composit.htm

GLOBAL RATINGS:

People's ratings of their care

Q31—Use any number on a scale from 0 to 10 where 0 is the worst health care possible, and 10 is the best health care possible. How would you rate all your health care?

0-10 Scale

People's ratings of their health plan

Q38—Use any number on a scale from 0 to 10 where 0 is the worst health care possible, and 10 is the best health care possible. How would you rate your health plan now?

0-10 Scale

REPORT COMPOSITES:

Getting Care

People's experiences in getting care they need

Q6—With the choices your health plan gives you, how much of a problem, if any, was it to get a personal doctor or nurse you are happy with?

A big problem A small problem Not a problem

Q10—In the last 12 months, how much of a problem, if any was it to get a referral to a specialist that you needed to see?

A big problem A small problem Not a problem

Q22—In the last 12 months, how much of a problem, if any, was it to get the care you or your doctor believed necessary?

A big problem A small problem Not a problem

Q23—In the last 12 months, how much of a problem, if any, were delays in health care while you waited for approval from your health plan?

A big problem A small problem Not a problem

People's experiences in getting care quickly

Q15—In the last 12 months, when you called during regular office hours, how often did you get the help or advice you needed?

Never Sometimes Usually Always

Q17—In the last 12 months, how often did you get an appointment for regular or routine health care as soon as you wanted?

Never Sometimes Usually Always

Q19—In the last 12 months, when you needed care right away for an illness or injury, how often did you get care as soon as you wanted?

Never Sometimes Usually Always

Q24—In the last 12 months, how often did you wait in the doctor's office or clinic more than 15 minutes past your appointment time to see the person you went to see?

Never Sometimes Usually Always

Doctor's and Medical Care

People's experiences with how well their doctors communicate

Q27—In the last 12 months, how often did doctors or other health providers listen carefully to you?

Never Sometimes Usually Always

Q28—In the last 12 months, how often did doctors or other health providers explain things in a way you could understand?

Never Sometimes Usually Always

Q29—In the last 12 months, how often did doctors or other health providers show respect for what you had to say?

Never Sometimes Usually Always

Q30—In the last 12 months, how often did doctors or their health providers spend enough time with you?

Never Sometimes Usually Always

Medical Office Staff

People's experiences with courtesy, respect, and helpfulness of office staff

Q25—In the last 12 months, how often did office staff at a doctor's office or clinic treat you with courtesy and respect?

Never Sometimes Usually Always

Q26—In the last 12 months, how often were office staff at a doctor's office or clinic as helpful as you thought they should be?

Never Sometimes Usually Always

The Health Plan

People's experiences with health plan customer service, information, paperwork

Q33—In the last 12 months, how much of a problem, if any, was it to find or understand information in the written materials?

A big problem A small problem Not a problem

Q35—In the last 12 months, how much of a problem, if any, was it to get the help you needed when you called your health plan's customer service?

A big problem A small problem Not a problem

Q37—In the last 12 months, how much of a problem, if any, did you have with paperwork for your health plan?

A big problem A small problem Not a problem

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Adopting Medicare Fee Schedules: Considerations for the California Workers' Compensation Program

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BACKGROUND

Medical costs are the fastest increasing component of the California workers' compensation program (CWCP). They have increased from 45 percent of benefit costs in the mid-1990s to an estimated 55 percent in 2003. During this same period, the average medical benefits paid per indemnity claim have been increasing 15 percent annually (CHSWC, 2002).

Currently, the Division of Workers' Compensation (DWC) uses an Official Medical Fee Schedule (OMFS) to set the maximum allowable amounts that may be paid to providers for medical services.⁴ The OMFS covers most medical services provided by a physician or other health care provider to whom the patient has been referred. However, maximum allowable amounts have not been established for facility fees associated with surgical procedures performed in hospital outpatient settings and ambulatory surgical centers. Moreover, the DWC has not had the resources to update the existing fee schedules on a regular basis. The portions of the OMFS that apply to inpatient hospital services and to physician and other practitioner services have not been updated since 2001 and 1999, respectively.

Medicare is the federal health insurance program for the aged, the disabled, and persons with end-stage renal disease. Medicare is administered by the Centers for Medicare and Medicaid Services (CMS). With few exceptions, Medicare uses fee schedules that are regularly updated to pay for medical care provided to its beneficiaries. The fee schedules are intended to relate payments to the resources required to provide the services.

The California workers' compensation program already models its OMFS for inpatient hospital services on Medicare's payment system and has adopted elements of other Medicare fee schedules, such as the global billing periods⁵ for surgery and relative values⁶ for orthotics and prosthetics. Linking the OMFS to

⁴ *Editor's Note:* This report was issued in September 2003. Shortly thereafter, Senate Bill 228 (Alarcon) was enacted that required that effective January 1, 2004 the OMFS for most non-physician services be modeled on Medicare's fee schedules with aggregate payments not to exceed 120 percent of what would be payable under Medicare. The MediCal fee schedule was adopted for pharmaceuticals. The Administrative Director is to establish a fee schedule for physician services by January 1, 2006.

⁵The global billing period is the period during which the pre- and post-operative care provided by a surgeon is covered by the payment for the surgical procedure.

⁶As discussed later, most fee schedules include a relative value or weight that measures the resources required for a given service or group of services relative to other services.

the Medicare fee schedule would expand the services covered by the OMFS and shift the administrative burden of ongoing fee schedule refinement and regular updates to the CMS.

Other workers' compensation programs have adopted the structure of the Medicare fee schedules, with different multipliers, to the Medicare payment rates.

- At least 17 states, the District of Columbia, and the federal workers' compensation program have adopted resource-based relative value scale (RB-RVS) fee schedules (although a number of states have retained service-specific conversion factors) for physician services. Key features of these fee schedules are detailed in Eccleston et al. (2002); Kominski, Pourat, and Black (1999); and The Lewin Group (2002).
- At least seven states are using the Medicare fee schedule for freestanding ambulatory surgery centers to pay for ambulatory surgery. In addition, one state has implemented a fee schedule for hospital outpatient services based on Medicare's fee schedule (CHSWC, 2003).

The Commission on Health and Safety and Workers' Compensation asked RAND to identify the issues that would need to be addressed if the OMFS were linked to Medicare fee schedules, including:

- issues that are likely to arise from existing differences between the two fee schedules
- issues surrounding the modifications that might be necessary to tailor the Medicare fee schedules to CWCP patients
- issues regarding the implications of automatic annual updates of fee schedules.

This paper summarizes the overall findings from the RAND study. The study focused on the features of the Medicare fee schedule that are at variance with the existing OMFS fee schedule and the issues that should be considered in deciding whether to retain particular features of the OMFS. Some issues, such as whether the fee schedules for physician services should have a single conversion factor or multiple conversion factors that account for current payment differentials, primarily involve a trade-off between redistributing payments across physician specialties and improving the match between payments and the costs of providing services. Other issues, such as whether adjustments are needed to reflect the differences in the populations covered by Medicare and the California workers' compensation program, involve a trade-off between administrative burden and payment accuracy. Administrative burden is minimized if the Medicare fee schedule payment parameters are adopted without modification. However, the populations covered by Medicare and workers' compensation differ from one another, and some modifications may be needed to ensure that payments are generally appropriate.

SUMMARY OF OVERALL FINDINGS

- Generally, Medicare's fee schedules cover the broad range of services covered by the CWCP (see Table 1). Some attention, however, needs to be given to individual services that are unique to the CWCP or to providers that are not covered by Medicare, such as acupuncturists and family therapists.

- Linking the OMFS to the Medicare fee schedules shifts the administrative burden of ongoing fee schedule refinement and updates to the CMS. Medicare fee schedules are updated on a regular basis with opportunity for public comment. An independent commission is charged with reviewing and making recommendations concerning Medicare payment policies. In addition, other advisory committees provide CMS with regular input on potential refinements to its various payment systems.
- Medicare fee schedules are more than just a set of prices. Coding standards and payment policies are implicit in the prices and often differ from those currently used by the OMFS or have features that the OMFS lacks. There are a number of individual policy issues that would need to be addressed at the outset of linking the OMFS to the Medicare fee schedules. However, after the decisions are made on these issues, they can be imbedded in the OMFS and should not preclude automatic updates in the future based on Medicare fee schedule updates.
- Medicare fee schedules have evolved over time to become systems that are organized around the provider who is furnishing the care and the setting where that care is delivered. When services are provided in a facility setting, separate payments are made to the physician or other practitioner and to the facility. Total payment for many ambulatory procedures varies based on the setting in which those procedures are done. In contrast, the current OMFS establishes maximum payments for services and, except for surgical procedures and emergency room services for which separate facility fees are allowed, the amounts do not vary based on the ambulatory setting in which the services are provided. This situation raises a number of important issues: (1) whether to continue to employ current OMFS rules regarding separate facility fees or establish separate facility fees for all hospital outpatient services; (2) whether to establish the same maximum facility fee payments for hospital outpatient departments and ambulatory surgical centers; and (3) whether to adopt Medicare's payment differentials for services furnished in office and facility settings by physicians and other practitioners. How these issues are addressed will affect both the incentives for where care is delivered and total California workers' compensation medical care expenditures.
- The unit of service covered by a Medicare fee schedule payment ranges from a bundled payment for a group of services (for example, Medicare's predetermined payment for hospital inpatient services covers all facility services provided during the inpatient stay) to a separate payment for each individual item or diagnostic test. While the current OMFS for inpatient hospital services demonstrates that the Medicare bundled payments can be adapted for workers' compensation patients, Medicare bundled payments for an inpatient stay (e.g., for services delivered in rehabilitation facilities) or an episode of care (e.g., home health care services) should be assessed to determine if the payments are appropriate for workers' compensation patients.
- Medicare has policies governing which items and services are included in payment for professional and facility fees and which services may be billed separately. As noted earlier, most fee schedules include a relative value or weight that measures the resources required for a given service or group of services relative to other services. These relative weights are

consistent with the service definition and may not be appropriate if the OMFS retains different policies on items and services that may be separately billed.

- For most fee schedules, Medicare applies a dollar conversion factor to the relative value for a given service to convert that value into a payment amount. A key question is what the appropriate conversion factor would be for services furnished to California workers' compensation patients. There is no "gold standard" that can be used to answer that question, and any decisionmaking in this regard should take into account a number of factors: whether there is adequate access to care, the current maximum allowable fees, the relationship between Medicare and private payer fee levels in California, and available information on the cost of providing specific services. A multiplier can be applied to the Medicare conversion factor to establish an overall payment level that is adequate to provide access to high-quality care. Setting the rate too low may create access problems, whereas setting the rate too high may encourage unnecessary utilization and result in excessive program expenditures.
- The OMFS is not adjusted for inflation on a regular basis, and most payments have been frozen for at least several years. The result is lower aggregate expenditures than the expenditures that would have resulted with regular inflation updates. While program expenditures tend to be higher with regular updates, the annual adjustments increase payment equity and predictability and should keep payments in line with the resources required to provide medical services.
- Medicare's annual update factors are set by law and include policy adjustments as well as an inflation adjustment. The policy adjustments meet Medicare's programmatic needs and may not be appropriate for updates to the OMFS. Other inflation measures may be more suitable. Input price indices account for changes in the input costs of providing services and would relate payment changes to changes in the costs of providing medical services, and medical price indices account for changes in the amounts paid for medical services by consumers and/or third-party payers. The selection of an appropriate measure depends on the underlying policy goal in making an inflation adjustment.
- The potential payment changes are quite large for some service sectors and may require a transition period to allow providers time to adjust to the new payment levels. Depending on the service sector and whether the OMFS already applies, transition policies that might be considered include
 - thresholds for the maximum change that can occur in a single year
 - blended rates that over several years provide a decreasing proportion of the payment based on the OMFS and an increasing proportion based on the Medicare fee schedule
 - hold-harmless provisions that freeze the current maximum allowable fee until it is less than the inflation-adjusted Medicare fee schedule amount

- reducing over time the OMFS multiplier that is applied to the Medicare conversion factor.
- While any of the aforementioned transition strategies involve some administrative burden, those that require maintaining procedure-specific information on amounts currently payable under the OMFS are the most burdensome. Transition policies that phase in the payment changes through adjustments in the conversion factor are less burdensome. The annual updating burden will be minimized if the transition policies are established at the outset of linking the OMFS to the Medicare fee schedules.
- The impact on program expenditures of tying the OMFS to Medicare fee schedules would largely depend on the decisions regarding payment levels: the multiplier used to adjust the Medicare conversion factor, the update methodology, and transition policies. Administrative savings should accrue from regular and predictable updates, but the actual level of administrative savings may be affected by the extent to which modifications are made in the Medicare fee schedules to address particular CWCP concerns.
- The decisions regarding payment levels and fee schedule modifications also have major implications for workers' compensation patients' continued access to quality care. The lack of a single statewide database containing all or a representative sample of current California workers' compensation claims makes it difficult to evaluate the impact of policy options. With the potentially large payment changes that are likely to occur in some sectors, ongoing monitoring to watch for any unintended consequences of adopting the Medicare fee schedules is highly recommended. If monitoring is done during the transitional period, potential problems can be identified and addressed promptly, and any necessary mid-course corrections can be made before final payment levels are established.
- Adopting Medicare's patient classifications will allow the DWC to compare costs for comparable services across providers, compare costs with other programs' costs for services, and monitor access and utilization trends for specific services. Such analyses are predicated on obtaining administrative data on an ongoing basis.

Table 1
Overview of Medicare Payment System and OMFS by Type of Service

Service	Medicare Payment System	OMFS
Inpatient Hospital Acute care hospitals	Inpatient Hospital Predetermined per-case payment based on the patient's principal and secondary diagnoses, procedures, and age.	Inpatient Hospital Already incorporates a modified version of the Medicare system. Exempts certain diagnosis-related groups (DRGs).
Freestanding rehabilitation hospitals and units of acute care hospitals	Predetermined per-case payment based on impairment, functional status, age, complications, and co-morbid conditions.	Currently exempts rehabilitation services. Assessment needed to determine if Medicare system is appropriate for CWCP patients.
Freestanding psychiatric hospitals and units of acute care hospitals	Cost subject to rate of increase limit on aggregate per-discharge costs. Per-diem prospective payment system under development.	Currently exempts psychiatric facilities from the OMFS. Medicare's cost-based system is not suitable for CWCP.
Long-term care hospitals	Pre-determined per-case payment based on patient's principal and secondary diagnoses, procedures, and patient's age.	Currently exempts long-term care hospitals. Assessment needed to determine if Medicare system appropriate for CWCP patients.
Physician and Other Practitioners, Outpatient Rehabilitation, and Non-Hospital Radiology	Resource-based relative value fee schedule; Medicare does not cover some services and providers that are covered by CWCP.	Charge-based relative value fee schedule.
Outpatient clinical laboratory tests	Charge-based fee schedule with national limits applicable to independent laboratories and physician offices; professional component paid under RB-RVS.	Charge-based relative value scale (RVS) applicable to all outpatient lab tests. Separate technical and professional components.
Other Hospital Outpatient Services	Facility fee paid for all services based on 570 clinically coherent groupings of procedures with similar cost.	Separate facility fees payable only for ambulatory surgery and emergency room. Fees exempt from OMFS.
Freestanding Ambulatory Surgical Center Procedures	Facility fee based on nine payment groups for procedures on approved list; if not on approved list, physician payment same as if performed in office setting.	Facility fees currently exempt from OMFS.
Durable Medical Equipment, Prosthetics, Orthotics, and Supplies	Charge-based fee schedule	Charge-based RVS. Uses Medicare relative value units (RVUs) for orthotics and prosthetics.
Outpatient Renal Dialysis	Capitated monthly rate	Currently exempts outpatient renal dialysis
Skilled Nursing Facility Inpatient Services	Per-diem rate based on 44 resource-utilization groups	Currently exempts skilled nursing facility inpatient services
Home health agency services	Case mix adjusted payment for 60-day episodes	Currently exempts home health agency services
Ambulance	National fee schedule transition	Currently exempts ambulance services

RESEARCH AGENDA

RAND's analysis of the policy considerations involved in linking the OMFS to the Medicare fee schedules highlighted the need for ongoing data collection on the services provided to CWCP patients. In the short run, the lack of readily available data limits the ability to model the impact of moving from the current OMFS to the Medicare fee schedules and to understand how overall OMFS payment levels compare with Medicare payment levels and those of private payers. This information would be helpful in establishing the OMFS conversion factor and in determining transition policies for various fee schedules. Other areas in which further analysis would benefit the policymaking process include:

- evaluating the impact of adopting the geographic adjustment factor and other policy choices in adopting the RB-RVS for physician and other practitioner services
- modeling the financial implications of alternative fee schedules for ambulatory surgery center facility services and hospital outpatient services
- evaluating whether the bundled payments for inpatient services furnished in rehabilitation facilities, long-term care hospitals, and skilled nursing facilities and for home health episodes of care are appropriate for worker's compensation patients.

In the longer term, additional research is also needed to inform decisions regarding potential refinements to the payment system. Further analyses that would benefit future decisionmaking include:

- assessing whether patient characteristics affect where ambulatory surgery is performed and whether there are differences in outcomes across the different settings
- determining the hardware and instrumentation costs that are included in the back and neck DRG payments for inpatient hospital services
- reviewing the medical literature on back and spinal procedures to see if the evidence would support practice guidelines for the procedures and use of new technology hardware and instrumentation.

Linking the OMFS to Medicare fee schedules would expand the services covered by the OMFS and reduce the administrative burden of keeping the rates current by capitalizing on the regular updates that the CMS performs for Medicare. The impact on patient access to quality medical care and program expenditures largely would be determined by the overall level at which payments are set. Ongoing data collection and analysis would be needed to monitor access, cost, and quality of care and to address issues of potential concern. This activity would be needed to assure that linking the OMFS to Medicare fee schedules does not have unintended consequences affecting CWCP patient access to medically appropriate services or program expenditures.

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