

DWC Managed Care Program  
Research Brief

Final Technical Report  
*California Work Injury Resource Center Project*

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Project description:

In 1998, DWC applied to the Robert Wood Johnson Foundation for a grant to examine ways in which quality of medical care for injured workers could be systematically improved in California. The goals of the project included:

- A comprehensive review of the general quality improvement literature in order to identify those strategies that would be most effective to apply in the workers' compensation system;
- A study of the Utilization Review practices of the largest claims administration organizations in the state;
- A 2-day workshop entitled, *Improving the Quality of Medical Care in the California Workers' Compensation System*;
- A series of 9 focus groups reviewing attitudes and experiences with quality of care among key participants in the workers' compensation system (injured workers, physicians, employers, claims administrators, applicant attorneys, nurse case managers and judges);
- Convening an Ad Hoc Task Force on Quality Improvement with the Medical Directors of the largest wc provider networks/managed care organizations in the state to explore starting points for a collaborative quality improvement effort.

Combined with the work the Division has done since 1995 to measure patient satisfaction with workers' compensation medical care, and certify and monitor Health Care Organizations (HCOs), the recommendations contained in this report identify some key steps to ensuring that injured workers receive the quality medical care that they deserve.

Authors: Linda Rudolph, M.D., M.P.H. (DWC Medical Director), Kathy Dervin, M.P.H. (Managed Care Program Coordinator) and Andrea Craig-Dodge M.P.H, M.S.W. (Public Health Institute)

## **Executive Summary of Workers' Compensation Quality of Care Project**

The Institute of Medicine has defined quality of 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" (Institute of Medicine, 1990). During the past decade, the implementation and evaluation of numerous efforts to improve the quality of general health care have led to significant advances in the understanding of quality improvement in health care (Kaegi, 1999). However, in workers' compensation (WC) health care, systematic quality measurement is uncommon, and formal quality improvement efforts are rare (Rudolph, 1996).

WC quality of care standards and standardized measurement protocols are sorely needed, given that serious problems within the WC health care system are widespread (Himmelstein and Pransky, 1995; Mardon and Mitchell, 1997; Tacci et al., 1998). Injured workers and their advocates have consistently expressed concerns about a system that can make it very difficult for patients to get care that they or their providers believe is necessary (see, for example, the focus group results described in Component Three of this report). WC patients frequently have limited choices and poor access to care. For example, a 1999 national physician survey found that 27% would not accept new workers' compensation patients (Cherry et al., 2001). At the same time, employers complain that WC health care providers prescribe unnecessary services and keep employees out of work for unreasonable periods of time. Health care providers feel constrained by WC rules, and judges are put in the position of making medical decisions when treatment issues are disputed. Those are just a few of the problems; it is widely accepted among all the stakeholders in WC that the system needs improvement.

Since 1994, the California Division of Workers' Compensation (DWC) has had an ongoing role in reviewing, certifying, and monitoring the delivery of care to injured workers in certified Health Care Organizations (HCOs).<sup>1</sup> DWC has also studied general health care approaches to quality improvement during the past several years, in order to adapt those approaches to improving quality of care (QOC) in the WC system.

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<sup>1</sup> For more on these requirements see California Labor Code Statute 4600.3 and California Code of Regulations Title 8, §9770 et seq

In the general health system, most managed care organizations participate in systematic monitoring of quality of care, linked with quality improvement efforts. State and federal regulations, purchaser requirements (both private and public sector), and voluntary accreditation agencies such as the National Committee for Quality Assurance (NCQA) all require quality measurement and improvement programs. The use of clinical guidelines and standardized performance measures is widespread. Recently, information about the comparative performance of managed care organizations (in areas such as access, provider communication, quality of preventive care and treatment of specific disorders, and patient satisfaction) has been widely disseminated by purchaser and accreditation organizations (AHCPR, 2000; Berman, 1999. See also: the Health Plan Employer Data and Information Set [HEDIS] 3.0 information on the National Committee for Quality Assurance [NCQA] website; the National Guideline Clearinghouse website; HealthScope, available on the Pacific Business Group on Health [PBGH] website; and the Agency for Healthcare Research and Quality [AHRQ] website. Web addresses are listed in the references).

In contrast, there are few required or systematic efforts to measure or improve quality of care in the WC system. While standardized quality indicators have been proposed, none are in widespread use (URAC, 2001). There are almost no regulatory, purchaser, or voluntary accreditation demands for performance measurement and quality improvement in workers' compensation health care. There is also a paucity of scientific evidence regarding the care of many common work-related injuries. For those and other reasons, the quality improvement movement of the general health care system has largely eluded workers' compensation health care.

DWC began to address the issue of quality of WC care during the mid-1990s. From 1995 to 1998, DWC developed and pilot-tested a patient satisfaction survey to learn more about patients' experiences in WC care. The survey was sent to 800 workers and the results were analyzed (see Component Two below for further details). In 1998, DWC initiated the California Work Injury Resource Center (CWIRC) project, with funding assistance from the Robert Wood Johnson Workers' Compensation Health Care Initiative. CWIRC is an effort to deepen understanding of quality issues in the care of injured workers. The long-term goals of this effort are to stimulate interest among workers' compensation system participants in the quality of health care for injured workers; learn more about stakeholders' perceptions of the quality of care

for injured workers; understand barriers and opportunities for improving quality; make policy recommendations for improving the quality of care for injured workers in California; and identify the nature of resources or assistance a State agency could provide which would facilitate quality improvement in workers' compensation health care.

To date, the Workers' Compensation-Quality of Care (WC-QOC) project has included the following six components.

1. A review of the published literature regarding quality and quality improvement in general health care and in workers' compensation.
2. The development and administration of a workers' compensation patient satisfaction survey. The survey was administered by telephone to 800 injured workers from February through July, 1998.
3. Focus groups regarding quality of care in workers' compensation. The groups, which were conducted during the year 2000, included separate sessions with injured workers, employers, physicians, nurse case managers, claims adjusters, applicants' attorneys, DWC judges and information/assistance officers.
4. A two-day workshop entitled "Improving Quality of Care for Injured Workers in California," which was held in May 2000 and was co-sponsored by DWC and the federal Agency for Healthcare Research and Quality (AHRQ). Participants included representatives from providers, insurers, labor unions, injured workers, employers, academia, and government.
5. Initiation of an Ad Hoc Quality Improvement Task Force to continue the discussion begun at the DWC/AHRQ workshop. The workgroup included the medical directors of large workers' compensation provider networks in California.
6. A preliminary assessment of the Utilization Review plan summaries of California's largest workers' compensation claims administrators.

This report provides a brief summary of each of the six components, synthesizes the results, and makes specific recommendations for steps that the State of California could take to improve quality of care for injured workers.

## **Component One: Literature Review**

The purpose of the literature review was to gather information about prior efforts in quality improvement, in order to learn from others regarding what types of quality improvement programs are most effective, and to identify previous quality improvement (QI) efforts in WC. A major finding of the literature review is that there have been very few formal quality improvement efforts in WC care, and almost no research studies to evaluate such efforts. There is an extensive literature on quality measurement and quality improvement in general health care, much of which may be useful in devising strategies to improve quality in WC care. Quality can be defined 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" (Institute of Medicine, 1990). Quality improvement efforts must address structure, defined as the characteristics of a health system such as material resources, human resources, and organizational structure; process, which is what happens during the actual giving and receiving of health care; and outcomes, which refers to the effect of care on the health status of patients and populations (Institute of Medicine, 1990).

Quality improvement is evolving away from more simplistic models that rely solely on changing individual physician behavior and towards developing more complex organizational systems. There is considerable evidence that some of the few QI methods that are widely used in California's WC system are generally ineffective. California, for example, requires that physicians who perform medical-legal evaluations take continuing medical education annually. However, passive provider education (lectures, rounds, conferences which predominate in California workers' compensation CME) does not effectively change provider behavior or improve care (Bero et al., 1998; Davis et al., 1992; Davis et al., 1995). Similarly, California has recommended treatment guidelines for common industrial injuries, but passive guideline dissemination is also not effective in improving care provided (Davis, 1997 et al.; Weingarten and Ellrodt, 1992). Several California WC insurers are also exploring the use of physician profiling; yet, the science of profiling is in its infancy, and the failure to adequately account for case-mix and other factors may lead to misidentification of outliers and thus misdirection of quality improvement efforts (Salem-Schatz et al., 1994). On the other hand, several techniques which have been effective in general health care have not been broadly applied in workers'

compensation. These include: performance measurement, especially linked with educational feedback and positive incentives for quality; active provider education linked with identification of practice needs; organizational changes to provide support for certain practices, such as patient and provider changes or additional ancillary personnel to perform desired functions; and systematic continuous quality improvement programs.

Because the workers' compensation system has certain unique characteristics which may impact efforts to improve quality of care, it is important that there be formal evaluations of quality improvement programs, and mechanisms for providers and managed care organizations to share information about what QI strategies work most effectively. Most critically, QI requires organizational commitment at every level. Quality improvement will not happen unless providers, managed care organizations, and – perhaps most of all – purchasers make it a high priority.

### **Component Two: Workers' Compensation Patient Satisfaction Survey**

Patient satisfaction is a critical component of any quality of care measurement program. In general health care, many public and private health care purchasers, as well as accrediting agencies such as the National Committee for Quality Assurance (NCQA), now require routine collection of patient satisfaction data using the federal Agency for Healthcare Research and Quality's standardized Consumer Assessment of Health Plans (CAHPS®) survey. However, there is no standardized patient satisfaction survey in general use for WC patients, nor is there a requirement to assess ongoing patient satisfaction for injured workers in the California WC system.

In order to learn more about injured workers's satisfaction with WC care, DWC contracted with the University of California at Berkeley's Survey Research Center to develop a standardized questionnaire to assess satisfaction with care and patients' perceptions of pain and functional outcomes. The questionnaire was administered by telephone to over 800 injured workers between February and July 1998.

Although the majority of injured workers were satisfied with most aspects of their medical care, many reported significant problems. For example, more than 30% reported that their providers did not explain things understandably, perform thorough examinations, figure out

the diagnosis and what to do, or involve the worker in decisions about their medical care. A surprisingly high number of workers reported significant levels of continued pain due to their injury, and that they had difficulty performing their job because of the work injury – even many months after the date of injury.

Spanish-speaking workers reported significantly less satisfaction with provider communications than other workers. Workers with cumulative trauma disorders of the upper extremities were more likely to report significant pain and functional limitations, while those with back injury were less satisfied with their choice of provider. These findings highlight the importance of monitoring patient satisfaction and patient outcomes on a routine basis. Additionally, further research should be done to refine patient satisfaction measurement tools in WC.

DWC has published the survey results in a report entitled “What Do Injured Workers Think About Their Medical Care and Outcomes After Work Injury?” The full text is available on the DWC website at <http://www.dir.ca.gov/DWC/PSQResbrief.pdf>.

### **Component Three: Focus Groups on Quality of Care**

During the year 2000, DWC conducted focus groups on the quality of health care for injured workers in California’s WC system. The specific aim of the focus groups was to understand the perspectives of the various stakeholders in the WC system. Separate sessions were conducted with injured workers, employers, physicians, claim adjusters, nurse case managers, DWC judges and Information and Assistance (I & A) officers, and applicants’ attorneys.

The focus groups addressed both quality of care in the general health care system and quality of care for injured workers within the WC system. There was wide consensus among participants regarding the fundamental components of, and the nature of concerns about, quality of care in the general health care system.

While there were some areas of consensus about workers’ compensation quality of care (WC-QOC), there was also significant disagreement among the groups. All groups agreed that the basic components of quality of care are the same in workers’ compensation as in other settings; most groups identified fundamental outcomes and returning to work (RTW) as key components of WC-QOC. Every group was also concerned about the impact that medical-legal

issues may have on medical treatment. Other common (though not universal) areas of concern about WC-QOC included the lack of physician familiarity with occupational health, disability prevention, RTW, and the WC system; problems with access to care; lack of information about physician performance; and lack of accountability of health care providers or other parties (such as insurers) for WC-QOC problems.

A striking finding was the high level of distrust among stakeholders in the WC system, which all of the groups recognized as a barrier to both quality of care and quality improvement. This distrust was the basis of widely divergent opinions, and many participants held members of other stakeholder groups responsible for important problems with WC-QOC.

The focus groups offered a wide array of suggestions for improving WC-QOC. These included providing more information about WC, perhaps through a clearinghouse; improving accountability by developing performance measures for providers; requiring certification for WC physicians; improving training and workloads for claims adjusters; changing financial incentives to prioritize quality of care and good outcomes; encouraging RTW through employer incentives and physician training; adding independent medical review to the utilization review process in order to provide greater medical expertise in external review of medical decisions; and providing ombudspersons for injured workers.

A report on the focus group results are posted on the DWC website <http://dir.ca.gov/dwc>

#### **Component Four: “Improving Quality of Care for Injured Workers in California”**

##### **Workshop**

DWC and the federal Agency for Healthcare Research and Quality (AHRQ) co-sponsored this workshop on May 24-25, 2000. Participants included representatives from providers, insurers, employers, labor unions, injured workers, academia, and government. Presenters from around the country included prominent researchers in the areas of quality measurement and quality improvement. Workshop topics included prevention, quality information, performance measures, and barriers to quality improvement.

Several themes emerged from the workshop discussion. First, participants agreed that quality of care is important to all of the stakeholders in California’s WC system, and that it is important to create opportunities for productive and mutually respectful discussions among the parties. Staying focused on the injured worker; keeping the dialogue respectful and cognizant of different perspectives; clearly identifying the responsibilities of each stakeholder; building on the

strengths of the various participants; focusing on a team approach to quality improvement; and selecting manageable goals with attainable outcomes may facilitate such discussions.

Second, participants identified several key components of successful quality improvement efforts. These included prevention of occupational injuries and disability; standardized performance and benchmark data; identification of workplace factors that affect quality; performance measures that are linked with commitment to quality improvement, in order to avoid being perceived as punitive; research to clearly identify areas of overuse, underuse, misuse, and variation in WC care; diversion of resources to quality improvement from areas currently allocated to inefficient processes; recognition of the importance of trust between injured workers and physicians; and improved communication among supervisors, physicians, workers, and claims administrators. Participants largely agreed that measuring health outcomes, particularly return-to-work (RTW), is as important as monitoring and improving the process of care.

Third, participants identified challenges to quality improvement. These included a lack of incentives for quality in the WC system; the adversarial nature of the WC system; the complex and multifactorial nature of treatment for many WC injuries; legal issues; provider reimbursement policies which don't encourage good practices; legislative "tinkering"; the lack of uniformity or proven validity of measurement tools being used by providers who do try to assess quality; the WC system's propensity to both contribute to depression and create barriers to addressing it; and the uncoordinated nature of WC care.

A report on the workshop is available on the DWC website <http://dir.ca.gov/dwc>

### **Component Five: Ad Hoc Quality Improvement Task Force**

Two Ad Hoc Quality Improvement Task Force meetings were held in June 2000 and September 2000 to follow up the workshop described in Component Four. The task force included the medical directors of most of the major provider networks in California. The group reviewed selected measures from a set of WC performance measures, including a patient satisfaction survey, which was developed and pilot-tested in 2000 by URAC/American Accreditation HealthCare Commission (URAC, 2001). The group also discussed issues related to standardized assessment of patient satisfaction.

### **What the Ad Hoc Quality Improvement Task Force agreed to do:**

- Focus on the identification of standardized performance measures in WC health care, which would be useful for (1) benchmarking for consumers and purchasers, and (2) internal quality improvement efforts by WC managed care organizations.
- Develop a list of performance measures that appeared feasible to collect, including
  - medical and disability costs;
  - length of disability payments; and
  - utilization of medical services (type, number, and location). Specific measures related to low back pain and Cumulative Trauma Disorders – Upper Extremity (CTDUEs) were suggested.

A preliminary survey was sent to provider and managed care organizations to assess the availability of specific data elements that would be required to construct the above consensus measures; also included were questions regarding willingness to participate in and pay for administration of a patient satisfaction survey.

A report on the task force meetings is available on the DWC website (<http://dir.ca.gov/dwc>)

### **Component Six: Preliminary Assessment of Utilization Review Plan Summaries**

The DWC promulgates “Utilization Review Standards” pursuant to California Labor Code Section 139, which was introduced in 1993. The standards govern the conduct of utilization management or utilization review (UR) by WC claims administrators in California. Utilization management is a set of techniques used to manage health care costs through the assessment of the appropriateness of care in individual cases. Currently, UR standards are intended to provide a structured process for making determinations regarding whether or not particular medical services meet the statutory definitions of care for which the employer is liable. However, little is known about how it has been implemented in California’s WC system.

DWC conducted a preliminary assessment of the workers’ compensation UR process, including:

(1) A review of the Utilization Review (UR) plan summaries of California’s largest WC claims administrators (28 administrators who processed more than 10,000 claims in 1999). The

results suggest that there is considerable variability in current UR practices, including variation in clinical criteria used in the UR process and the use of an internal appeals procedure. The lack of uniformity and consistency in UR practices likely causes an unnecessary administrative burden for WC providers. The assessment did not ascertain the actual impact of UR on the costs and quality of care.

(2) A review of DWC's UR standard compared to UR requirements in general health care. This revealed important differences between DWC's UR standards and the UR requirements in the California Insurance Code and Health and Safety Code.

(3) A review of case files in which there were requests for expedited medical hearings three California Workers' Compensation Appeals Board (WCAB) offices; documentation pertinent to the UR process appeared in only one case file.

The UR assessment results have been published in a report entitled "Utilization Review in California's Workers' Compensation System: A Preliminary Assessment." The full text is available on the DWC website at <http://www.dir.ca.gov/DWC/URreport.pdf>.

### **Discussion and Recommendations**

Several overarching themes have emerged from these endeavors. First, all of the stakeholders in WC are concerned about and dissatisfied with the current quality of care in California's workers' compensation system. Although stakeholder groups do not necessarily agree about what the problems are, the potential for productive collaborative efforts to address WC-QOC is real.

Following is a summary of the major themes with relevant research and policy recommendations. The recommendations are divided into four focus areas, including access, accountability, quality incentives and barriers, and quality improvement infrastructure.

#### **Focus Area One: Ensure access to care for all injured workers**

Concerns about limitations on access to care for injured workers were raised repeatedly in many venues. Workers whose claims are on delay or denied may face substantial obstacles to obtaining needed medical care. Even workers with health insurance may find that their HMO

denies payment for care because a network physician has made a determination that an injury is work-related, and many health insurance policies explicitly exclude work injuries from coverage. Workers who cannot obtain care through the workers' compensation system or other health insurance have limited options for getting medical care and may be forced to rely on care for the indigent (county hospitals, community clinics) or on the allegedly small proportion of providers who accept liens. In addition, injured workers who suffer depression or other psychological sequelae of injury may have difficulty obtaining appropriate mental health services, and the paucity of physicians in certain specialties and in some regions may limit and/or delay access to appropriate specialty care.

DWC should appoint a Special Task Force on Injured Worker Access to Care with a time-limited mandate to explicitly assess the magnitude and severity of access problems, and make recommendations for policy changes to ensure adequacy of access to care for injured workers. The Special Task Force should draw on the knowledge of policy researchers with specific expertise in the evaluation of access to health care.

The second area of concern regarding access is that injured workers may have difficulty obtaining appropriate mental health services. In order to address that problem, the task force should examine access to mental health services when such is requested by the primary treating physician.

The third area of concern is the potential for limited and/or delayed access to appropriate specialty care. The Special Task force should conduct a formal study regarding access to specialty care for injured workers in order to address this issue. The study should both assess the magnitude of the reported access problems, and if significant, recommend policies to encourage participation in the workers' compensation system by physicians in those specialties and regions where access is limited.

The fourth area of concern regarding access is that workers' compensation bill review and utilization review program processes may inappropriately impede timely access to medically necessary services. In order to avoid that problem, DWC should review options such as licensing and stricter regulation of workers' compensation bill review and utilization review programs. Utilization review regulation could easily be adapted from legislation already in place for both HMOs and fee-for-service health insurers in California.

**Focus Area Two: Establish systems for accountability for the quality of health care for injured workers.**

A fundamental barrier to quality improvement is the absence of any system to monitor or measure the overall quality of care for injured workers in California's workers' compensation system, or to assess the quality of care provided by individual managed care organizations or workers' compensation insurers. For example, purchasers cannot make informed decisions about purchase of health care; policies cannot be evaluated to determine impact on quality; providers and WC managed care organizations cannot identify problems and undertake appropriate quality improvement strategies; workers cannot make informed decisions about choosing providers; and attorneys cannot make referrals based on quality of care concerns. Without such measurement, it will be difficult to target QI efforts, monitor their results, or ensure that injured workers receive the quality care to which they are entitled.

Although a few managed care organizations with large occupational health practices have made significant commitments to quality improvement, these are exceptions in California's WC system, not the norm. Until employers and workers' advocates demand that quality of care become a high priority, it is unlikely that claims administrators will shift their focus from the cost to the quality of care.

DWC, with input from stakeholders, should adopt an initial set of quality of care performance measures. The measures should be patterned after the NCQA Health Plan Employer Data and Information Set (HEDIS) performance measure set. Examples of such measures can be found in the URAC publication *Measuring Quality in Workers' Compensation Managed Care Organizations: Technical Manual of Performance Measures* (URAC, 2001).

Second, the creation of a standardized quality measurement program in California's workers' compensation system is a prerequisite to significant quality improvement in the care of injured workers. However, several major barriers may impede the establishment of such a program. Key among these is the unavailability of uniform data on medical care, such as that which was envisioned in DWC's Worker's Compensation Information System (WCIS). Although the California Worker's Compensation Institute (CWCI) maintains a database that contains a large amount of services utilization data, the CWCI database is not complete; nor is the data in it audited or otherwise validated; finally, it is not easily accessible. Therefore, DWC should require the use of standardized and audited medical data for purposes of calculating the

adopted performance measures. Data collection need not be centralized, but there must be specified methods for collecting and validating the data, and data must be externally audited by accredited agents; methods for doing this have been well-developed through the NCQA HEDIS process.

Third, pain and functional outcomes, return-to-work experience, and patient satisfaction with care can best be described by injured workers themselves. Patient perception of care and outcomes is a critical element in the assessment of quality of care. Therefore, DWC should require routine administration of a standardized survey of injured workers to assess satisfaction with care, return-to-work experience, and patient-reported pain and functional outcomes. The workers' compensation system can draw heavily on the experience in other sectors, in which standardized patient surveys, such as AHRQ's Consumer Assessment of Health Plans Survey (CAHPS), are now routinely used as a component of performance measurement. Again, the survey need not be conducted by a single organization, but should be conducted in a standardized manner by accredited organizations.

Fourth, standardized performance measures and survey data may be most useful if health care delivery organizations can be compared to one another and to the overall industry standard of performance. In order to do this, it would be very helpful to create a collaborative data benchmarking project to collect data from as many organizations as possible, to determine benchmarks of quality, and to allow both provider, purchaser, and consumer assessment of areas of strength and needed improvement.

**Focus Area Three: Create incentives for quality and remove system barriers to quality.**

Current incentives in the workers' compensation system are primarily perverse incentives, which mitigate against improvement in the quality of care for injured workers. Many participants in the workers' compensation system believe that the system lacks incentives for quality health care, and actually creates barriers to quality improvement. In many different forums, people expressed a wish that legal issues could somehow be removed from the medical care process, so that all parties could stay more clearly focused on the goals of recovery and rehabilitation for the injured worker. Similarly, all stakeholders noted the focus on short term cost savings even at the expense of longer-term savings that could be achieved through real

quality improvement efforts. DWC developed recommendations aimed at improving quality incentives, and removing perverse incentives and other barriers.

First, legal issues should be separated from medical care to the extent possible so that quality becomes the main focus of treatment. Currently, both sides have an incentive to try to maximize their financial benefits from a given case through their choice of physician. There is an incentive for employers to send injured workers to physicians who minimize disability, and some patients may be motivated or encouraged by attorneys to seek physicians who over-emphasize the impact of injuries to maximize financial gain. One way to address this problem is to remove the treating physician presumption<sup>2</sup>. When WC cases are appealed in court, the judge reviews reports written by the physician who treated the patient and by physicians hired by the defense. If the reports conflict, there is a presumption that the physician who treated the patient has made the correct diagnosis. Eliminating the treating physician presumption could remove the incentive for employers and injured workers to use physicians who are reputed to write certain types of reports, and increase the motivation to find physicians based on their record of quality treatment. Removing the treating physician presumption is just one possible means of separating legal issues from treatment. The relationship between medical care and legal issues needs further study.

Second, DWC should consider permitting a reward for quality care by allowing payment above the fee schedule for providers/health care organizations who receive outstanding scores on patient satisfaction surveys or provide other data that demonstrates quality improvement. California Assembly Bill 1177, signed in September 2001, allows charges to be billed above the fee schedule when a contract is in place for the provision of medical services. Further study is needed regarding which quality indicators should be utilized, in order to avoid perverse incentives such as a motivation to push patients back to work too early in order to show a record of “successful” treatment.

Third, UR has not been demonstrated to be a particularly effective way to improve quality in general health care. As discussed in Component Six, there is considerable variability in California workers’ compensation UR practices. Further, the focus groups results (Component

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<sup>2</sup> AB 749, signed Feb 15, 2002, will remove the treating physician presumption for all but predesignated physicians.

Three) indicate that physicians and other stakeholders do not believe that medical decisions should be made by non-medical personnel, and that providers are unhappy with the cumbersome process of UR, which can lead to delays in authorization for critical treatment. One potential option is to eliminate UR for certain providers/health care organizations who either demonstrate high quality or, perhaps, are certified to provide treatment in the WC system. Additionally, independent medical review – as now required in other California health systems - should be integrated into the UR process in order to provide greater medical expertise and external review of claims administrator medical decisions.

Fourth, quality improvement is more likely to be successful if it is under the direction of committed organizational leadership, within a supportive regulatory and competitive environment, and with resources infrequently found outside of organized delivery systems (Shortell et al., 1998). Therefore, DWC believes that incentives for the use of organized delivery systems should be established, and that all organized delivery systems which contract with employers for the provision of medical care to injured workers should be required to meet specified standards to ensure quality of care.

#### **Focus Area Four: Provide an infrastructure for quality improvement.**

In order to gather more information to develop an infrastructure for quality improvement, DWC should seek funding to continue the work of the California Work Injury Resource Center (CWIRC). CWIRC would provide education and technical assistance; serve as a clearinghouse for information (e.g. relevant treatment guidelines, evidence-based occupational health practice); provide linkages between the WC community and recognized groups promoting quality improvement, such as the state's Department of Managed Health Care, NCQA, URAC, Foundation for Accountability (FACCT), Pacific Business Group on Health (PBGH), and others; develop model contract language; and conduct "purchasers' institutes" to help purchasers of workers' compensation health care know what to look for in terms of quality of care. CWIRC should convene a Workers' Compensation Quality Council (WCQC) to serve as an advisory group, which should include participants from all stakeholder groups.

CWIRC should also provide for the further study of quality improvement areas about which little is currently known in the context of WC care. First, there is a lack of information about where to find physicians who are knowledgeable about occupational health. Second, there is no information available regarding the potential impact of requiring certification for WC care providers, which, if not carefully administered, could lead to a shortage of qualified physicians to treat injured workers. That could cause long queues for treatment and limit physician choice. Third, several of the focus groups (Component Three) discussed the fact that it is very difficult for physicians to have trusting relationships with their patients when the employers or insurers choose injured workers' providers. A trusting relationship between patient and physician is critical to quality care. CWIRC should examine ways of improving patient-physician trust in WC care.

### **Conclusion**

Good quality of care leads to improved outcomes for injured workers, which benefits everyone involved and is likely to save long-term costs. Although DWC found major gaps in quality measurement and quality improvement in the WC system, it is also clear that there are effective tools available to begin to close those gaps. The six components of the DWC study show that all of the stakeholders are interested in improving quality, and that many are ready to collaborate in a quality improvement effort. In addition, the general health care system has much to offer in terms of quality improvement protocols which have been evaluated and tested. We hope that stakeholder groups will utilize the information gathered in this report to move forward toward improving quality of care in the workers' compensation system.

## Overview of Policy Options for DWC Action

### Focus Area One: Access

- Appoint a Special Task Force on Injured Worker Access to Care to:
  - Study the use of health care services during the time that subsequently accepted claims are on delay or denial and consider policy options to address delays and denials
  - Examine whether at least one mental health visit should be allowed when requested by the treating physician
  - Study the magnitude of reported access problems and recommend policies to address them
  - Examine the licensing and stricter regulation of WC bill review and utilization review

### Focus Area Two: Accountability

- Adopt an initial set of quality performance measures, using standardized and audited medical data to calculate the measures
- Require the routine administration of a standardized patient satisfaction survey for injured workers
- Create a collaborative quality data benchmarking project

### Focus Area Three: Quality incentives and barriers

- Study possible ways to separate legal issues from medical care so that quality becomes the main focus of treatment
- Reward quality care by allowing payment above the fee schedule for providers/health care organizations who demonstrate quality improvement
- Eliminate UR for providers/health care organizations who demonstrate high quality and/or integrate independent medical review into the UR process
- Require all organized delivery systems which contract with employers for the provision of medical care to injured workers to meet specified standards to ensure quality of care

### Focus Area Four: Infrastructure

- Seek funding to continue the work of the California Work Injury Resource Center (CWIRC), which would:
  - Provide education and technical assistance;
  - Serve as a clearinghouse for information;
  - Provide linkages between the WC community and recognized quality improvement organizations;
  - Develop model contract language;
  - Conduct “purchasers’ institutes”;
  - Convene a Workers’ Compensation Quality Council to serve as an advisory group; and
  - Study quality improvement areas about which little is known in the context of WC care, such as information about where to find physicians knowledgeable about occupational health; the impact of requiring certification for WC care providers; and how to improve patient-physician trust in WC care.

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#### **Useful websites for further information**

- Agency for Healthcare Research and Quality (AHRQ): <http://www.ahrq.org>
- California Division of Workers' Compensation (DWC) home page: <http://www.dir.ca.gov/DWC>
- National Committee for Quality Assurance (NCQA): <http://www.ncqa.org>
- National Guideline Clearinghouse: <http://www.guideline.gov>
- Pacific Business Group on Health (PBGH): <http://www.pbgh.org>
- Utilization Review Accreditation Commission (URAC): <http://www.urac.org>

## Summary of CWIRC Initiated Projects and Recommendations

Activity Area	Key findings/recommendations	Participants
Patient Satisfaction Survey	<ul style="list-style-type: none"> <li>▪ Patient surveys should be conducted on a regular basis</li> <li>▪ Results should be linked to quality review/quality improvement</li> <li>▪ Results can be used to create “report cards” on various care delivery systems</li> </ul>	803 injured workers  stakeholder advisory cmt
Preliminary Assessment of UR Practices	<ul style="list-style-type: none"> <li>▪ Current UR practices may be inconsistent with state regulations</li> <li>▪ examine cost effectiveness and impact on quality of UR</li> <li>▪ monitor UR practices, esp. denials</li> <li>▪ consider adopting IMR for denials</li> <li>▪ consider accreditation for UR organizations</li> <li>▪ ensure protection of medical confidentiality as part of UR</li> </ul>	Reviewed 24 of the largest 28 claims administrators in Calif.
Focus groups on Quality of Care	<p>Overall, quality improvement needs more attention:</p> <ul style="list-style-type: none"> <li>▪ more info about wc to providers and patients</li> <li>▪ improve access to care</li> <li>▪ adopt and use performance measures</li> <li>▪ create incentives for quality</li> <li>▪ require certification of providers</li> <li>▪ improve RTW</li> <li>▪ improve claims handling of medical issues</li> <li>▪ improve UR process; add Independent Medical Review</li> <li>▪ reduce disputes and litigation</li> </ul>	Focus groups with employers, injured workers, nurse case managers, physicians, applicants attorneys, insurance adjustors, judges and I&A officers. 89 participants overall
2 Day Workshop with Agency for Health Care Research and Quality, “Improving Quality of Care for Injured Workers in the Calif. Workers’ Compensation System	<ul style="list-style-type: none"> <li>▪ Quality of care and QI need more attention in workers’ compensation</li> <li>▪ several key components of QI were identified</li> <li>▪ barriers and challenges to QI needed to be addressed</li> </ul>	Overall 65 stakeholder representatives (employers, insurers, unions, injured workers, provider groups, MCOs, nurses, researchers, DHS, DIR, PBGH
Ad Hoc Task Force on Quality Improvement	<ul style="list-style-type: none"> <li>▪ Reviewed URAC performance measures</li> <li>▪ Discussed leading quality indicators and patient satisfaction survey administration</li> <li>▪ Agreed to pursue collaborative benchmarking project-need resources to do it</li> </ul>	Medical directors of large networks, HCOs, representatives of professional associations, California Medical Assn.

# What Do Injured Workers Think About Their Medical Care and Outcomes After Work Injury?

Linda Rudolph, MD, MPH

Kathy Dervin, MPH

Allen Cheadle, PhD

Neil Maizlish, PhD, MPH

Tom Wickizer, PhD

*Patient satisfaction is an important aspect of quality of care. Little information about injured workers' satisfaction is available. A survey instrument was developed to assess "What Do Injured Workers Think About Their Medical Care?" Survey domains included access, satisfaction, reports of physician behaviors, and outcomes after work injury. Descriptive analyses were performed on more than 800 responses. Approximately 25% of respondents reported dissatisfaction with care. Satisfaction with choice of provider, interpersonal care, claims handling, and outcomes were major predictors of overall satisfaction. Spanish-speakers were more likely to be dissatisfied with physician communications. Months after injury, many workers reported significant pain and impact on job ability and daily function. Routine evaluation of patient satisfaction with occupational medical care could facilitate quality improvement efforts and informed purchaser and worker choice of occupational health services. (J Occup Environ Med. 2002;44:425-434)*

Patient satisfaction and patient perceptions of outcomes have become important components in the assessment of the quality of health care.<sup>1</sup> Patients are uniquely able to provide information about their ease or difficulty of obtaining care, the interpersonal dimensions of the patient-physician relationship, the patient's view of the technical quality of care provided, and the patient's functional status and perceived well-being. Patients can provide both subjective ratings of care and more factual reports about what happened in their medical encounters.<sup>2</sup>

State and federal government agencies (eg, Centers for Medicare and Medicaid Services), widely recognized accrediting agencies (eg, National Committee for Quality Assurance), and private and public purchasers (eg, California Public Employees Retirement System, Pacific Business Group on Health) now all require the collection of patient satisfaction data using the standardized *Consumer Assessments of Health Plans Study* surveys developed by the federal Agency for HealthCare Research and Quality.<sup>3</sup>

There are no comparable requirements for assessing patient satisfaction among injured workers receiving care in any state workers' compensation system. At least one instrument for assessing workers' compensation care has now been tested for reliability and validity.<sup>4</sup> The American Accreditation HealthCare Commission/Utilization Review Accreditation Committee has also developed a patient satisfaction survey intended for use by workers'

From the Medi-Cal Managed Care Division, California Department of Health Services (Dr Rudolph); the Division of Workers' Compensation, California Department of Industrial Relations (Ms Dervin); the University of Washington, School of Public Health (Dr Cheadle, Dr Wickizer); and the Community Health Center Network, Oakland, Calif. (Dr Maizlish).

Address correspondence to: Linda Rudolph, MD, Medi-Cal Managed Care Division, Department of Health Services, 714 P Street, Room 950, Sacramento, CA 95814; lrudolph@dhs.ca.gov.

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compensation managed care organizations, but it remains untested.<sup>5</sup>

Information about the experience of injured workers with health care after work injury is limited. There are few published reports of patient satisfaction in workers' compensation, and several of these are evaluations of specific, limited-term managed care programs, rather than more general assessments of injured workers' perceptions of care.<sup>6,7</sup> Recently, several state workers' compensation agencies have also conducted surveys of injured workers as part of a Robert Wood Johnson Foundation-funded effort to test the feasibility of collecting comparable data across states to assess the performance of workers' compensation systems.<sup>8,9</sup> This study reports on the results of a survey of more than 800 injured workers in California's workers' compensation system, to assess patient satisfaction with medical care and patient perceptions of health and functional outcome after work injury.

## Methods

### Survey Development

The California Division of Workers' Compensation (DWC) contracted with the University of California, Berkeley, Survey Research Center (SRC) to develop a standardized self-administered

questionnaire that could be used to collect data on patient satisfaction and outcomes in injured workers receiving care in California's workers' compensation system, and to conduct a pilot test of the survey instrument and mail-out procedure. Full details about survey development can be found in Wiley et al.<sup>10</sup>

The SRC and DWC reviewed available patient questionnaires used in other settings. New questions were developed to assess key aspects of the treatment of occupational injury and illness, such as physician's effort to elicit information about the worker's job, physician understanding of the impact of the injury on ability to perform the job, and the extent of physician-patient communication about the patient's return to work.

An ad hoc advisory committee of physicians and other health professionals, union representatives, academics, and injured workers advocates reviewed a draft of the survey. A revised draft of the instrument was evaluated in a focus group with injured workers.

The pilot questionnaire was mailed to a sample of 800 workers, randomly selected from the claims files or medical records of six cooperating organizations, which included three self-insured employers, a large workers' compensation carrier, a health maintenance organization, and a large occu-

pational health practice. Nearly 30% of workers returned the pilot survey; SRC then conducted an intensive telephone follow-up to those workers who did not return the mail survey, obtaining a response rate of over 60%.

An analysis of characteristics and responses of both mail and phone respondents was conducted. Female and older workers were over-represented among mail respondents. There were no significant differences between mail and phone respondents with respect to subjective ratings of satisfaction with medical care or reports on the medical care experience. Phone respondents were slightly more likely to report better self-rated functional outcomes than mail respondents; this finding was largely, but not entirely accounted for by the longer lag time between date of injury and date of response in phone respondents. SRC also assessed item nonresponse, validity of response, response variability and item consistency.<sup>10</sup>

On the basis of the results of the pilot survey, the questionnaire was again revised. Final survey domains included (1) postinjury health and functional status, (2) patient reports and evaluation of care, (3) utilization of medical services, (4) return to work, and (5) demographic and occupational characteristics of injured workers (Table 1).

**TABLE 1**  
Domains and Topics Covered in Patient Satisfaction Questionnaire

No. of Items/Approximate Domain	Topics
10—Postinjury health	General health, degree of recuperation, pain, limitations in activities of daily living and work
15—Patient reports and evaluation of care	Satisfaction with provider; patient involvement in decisions; interpersonal care, technical aspect of care; information on primary and disability prevention (avoiding future work injuries, work station changes, work restrictions); patient involvement in return-to-work decisions; provider knowledge of patient's work
10—Utilization of services	Access to health services; initial treatment setting, number of health care providers, number of office visits, provider providing the majority of care; satisfaction with workers' compensation claims handling; contracting with lawyer to help adjudicate a claim
15—Return to work	Duration of disability, timing, and patient's opinion of appropriateness of return to work, employer role in facilitating return to work
12—Occupational and demographic characteristics	Job, age, marital status, education, sex, race/ethnicity, income, union membership, preinjury job satisfaction, relationship with supervisor

## Survey Sample

The sampling frame was a convenience sample, including injured workers who (1) were enrolled in a state-certified workers' compensation health care organization, (2) were enrolled in the state's 24-hour pilot program, (3) obtained care at two large managed care organizations that contract with employers to provide fee-for-service workers' compensation care, or (4) were employed at time of injury by five large self-insured employers.

Initial criteria for eligibility in the survey sample were (1) injured between July 1, 1997, and December 30, 1997; and (2a) had 3 or more days of lost time or received payment for temporary disability, or (2b) used medical services with total costs of more than \$2500. These criteria were intended to allow for a uniform time frame from date of injury to date of survey and to ensure that respondents had experienced more than casual contact with the workers' compensation medical system. Samples from each organization were selected at random, with sampling fractions varying based on the total number of cases contributed by each organization. Date criteria were subsequently relaxed to ensure adequate numbers of cases from all organizations.

## Survey Administration

The survey was administered by phone by the University of California Survey Research Center from February through July 1998, at an

average length of 8 months after the date of injury. Interviewers used CASES (Computer Assisted Survey Execution System; University of California Berkeley. [www.cases.berkeley.edu](http://www.cases.berkeley.edu)), a computerized automated telephone interview software system. Up to 10 attempts were made to contact each individual. Methods used to locate respondents included directory assistance, on-line reverse directories, and on-line searches with address inputs and phone number outputs. Monolingual Spanish-speaking respondents were referred for Spanish-language interviews; other non-English speaking respondents were excluded.

## Analysis

Simple descriptive and univariate analyses were performed. For the purpose of statistical analyses of overall satisfaction and choice of provider, the four-point satisfaction scales were dichotomized. A response of very satisfied or somewhat satisfied was classified as "satisfied" and a response of somewhat dissatisfied or very dissatisfied was classified as "dissatisfied." Similarly, responses to questions with five-point scales were dichotomized so that responses of "excellent" or "very good" were classified as "very good," and those of "good, fair, poor" were classified as "not very good." An exploratory factor analysis, using orthogonal rotation, identified four factors (Table 2).

Scales for doctor-patient interaction, satisfaction, occupational med-

icine orientation, and physical function were constructed by adding up the variables in each scale coded as Likert scales (eg, 1 = strongly disagree to 5 = strongly agree). The codings were reversed as appropriate so that all variables loaded in the same direction on the factors and scales. Cut points were established to produce dichotomous variables (eg, satisfied or not) from each scale.

In addition to univariate analyses, general satisfaction with care was modeled using stepwise forward logistic regression. Variables for three different models were specified from the following lists of "satisfaction variables" and "nonsatisfaction variables." Satisfaction-related variables included satisfaction with choice of provider, high doctor/patient interaction, satisfaction with claims handling, good functioning, satisfaction with job preinjury, good/excellent relations with supervisor, hired an attorney, and covered by insurance when injured. Nonsatisfaction variables included patient age, sex, education, race, marital status, language, income, injury type, occupation, time to survey interview, and employer helpful in assisting return to work. Model I considered for forward entry all 20 variables (satisfaction variables + nonsatisfaction variables). Model II considered only the group of 9 satisfaction variables for forward entry, and Model III considered only the 11 nonsatisfaction variables. The *P* value for inclusion in any model was  $P \leq 0.05$ .

**TABLE 2**  
Scale Variables

Scale Name	Variables Used to Construct Scale
Satisfaction with doctor-patient interaction	Doctor: listened, explained details, gave thorough examinations, how well diagnosed, understood work limits, showed courtesy
Satisfaction with choice and overall care	Overall satisfaction with care, satisfaction with choice of provider, involvement in decisions
Occupational medicine orientation	Doctor: suggested job changes, told how to avoid reinjury, talked about job, understood job
Pain and functional outcome	Health better/worse since injury; injury effect on life; extent of recovery; difficulty with lifting, climbing, handling objects; pain frequency

## Results

### Response Rates and Respondent Characteristics

The overall response rate for the survey was 61.3%. According to limited available administrative data, respondents (mean, 41.2 years) were more likely to be older than nonrespondents (mean, 38.6 years). Both respondents and nonrespondents were approximately 60% women. Respondent characteristics are shown in Table 3.

### Descriptive Analysis

*Access and utilization.* A total of 13.3% of workers reported "some or a lot of trouble getting medical care" when they were first injured; 77% reported no trouble at all. Eighty-six percent reported that they told their employer about the injury before seeking medical care. Few respondents first saw a doctor at a private doctor's office (Table 4).

Less than 20% of patients saw only one doctor for treatment of their injury, whereas one quarter of the patients saw five or more different doctors. Over 22% of injured workers made 25 or more doctor visits; 45% had fewer than 10 doctor visits for the work injury. Sixty-three percent of respondents said a medical doctor had provided most of the care for the injury. Fifteen percent had most of their care provided by a physical therapist, 6.5% by a chiropractor, 2% by a physician assistant or nurse practitioner, and the remaining by "another type of professional" or "unknown." Workers were asked whether they had been told to see the one doctor who was most involved in treating the work injury, and by whom. Only 46% reported that someone had told them to see this doctor; of these, just over 50% said they had been referred to the doctor by the insurer or employer.

*Noncompensated medical costs and use of other benefits.* A total of 127 (15.7%) respondents had paid \$1 to \$99 in nonreimbursed medical

**TABLE 3**  
Respondent Characteristics

Item	
General	813
<i>n</i>	
Mean age (yr)	41.4
% Age $\geq$ 40 yr	55.2
% Female	63.5
Race/ethnicity (%)	
White/Caucasian	48.6
Hispanic/Latino	27.3
Black/African-American	9.9
Asian	7.7
Other	6.4
Education (%)	
Some college	61.1
Married/living together	61.2
Income >\$35K	50.7
Occupation category (%)	
Professional, technical, sales, management	25.1
Clerical	31.4
Service	15.3
Farm, crafts, laborer	28.2
Injury type (%)	
Back sprain/strain	25.9
Upper extremity nerve damage	14.7
Other	59.5
Miscellaneous (%)	
Spanish-speaking interview	11.3
Health insurance coverage	79.7

costs for their work injury; 46 (5.7%) reported paying \$100 to \$499, and 15 (1.9%) reported nonreimbursed medical costs of greater than \$500. Over 42% of patients reported that they had used sick leave or vacation leave to cover time lost at work because of the injury.

*Satisfaction and patient ratings of care.* Nearly 25% of injured workers reported dissatisfaction overall with the medical care received for their work injury or with the number of doctors they could choose from to treat their work injury (Table 5). Many patients rated as only fair or poor several aspects of communication, interpersonal interaction, and perceived technical competence of their primary provider (Table 6).

*Patient reports on provider behaviors.* One third of respondents indicated that they were involved very little or not at all in decisions about their medical care. Many workers reported that physicians did not engage a lot in behaviors considered

**TABLE 4**  
Location of First Doctor's Visit After Work Injury

Location	%
Medical office at workplace	9
Private doctor's office	9
Clinic	59
Emergency department	21
Other	2

important in occupational medicine, such as eliciting a job description or talking about return to work or prevention of reinjury (Table 7).

*Return-to-work experience.* The survey explored several aspects of postinjury work experience. Nearly all respondents (94%) had worked for pay at some time since the injury; 70% had missed no work. Over 44% said they had returned to work "too soon" after the injury; 23% of workers said their employers were "not ... all" or "not too helpful" in helping them to return to work after the

**TABLE 5**  
Overall Satisfaction With Care and Choice of Physicians

Level of Satisfaction	Satisfaction With Care		Satisfaction With Choice	
	n	%	n	%
Very satisfied	339	41.9	309	38.6
Somewhat satisfied	280	34.6	271	33.9
Somewhat dissatisfied	115	14.2	133	16.6
Very dissatisfied	75	9.3	87	10.9

**TABLE 6**  
Percentage Excellent or Good Patient Ratings of Providers

Item	%
How well provider listened	77.8
Showed courtesy and respect	73.5
Explained things understandably	70.3
Examinations and care thorough/careful	63.7
Figured out diagnosis and what to do	64.9

**TABLE 7**  
Patient Reports on Provider\* Occupational Medicine Behaviors

Occupational Medicine Behavior	%
Talked about job tasks some/a lot	71.2
Understood job very/fairly well	79.0
Understood impact of injury on ability to do job (very good/excellent)	61.3
Talked some/a lot about work restrictions to return to work	67.5
Suggested job changes to help heal	72.7
Told how to avoid reinjury	64.0

\* Doctor most involved in treating injury.

injury. Thirty-eight percent had job changes to help return to work after injury, and most (79%) of those with job changes were satisfied with the changes. Eighty-six percent of respondents stated that they were working at a regular job for pay at the time of interview, and 85% of these were working for the at-injury employer.

*Pain and functional outcomes after injury.* Respondents were asked a series of questions about perceptions of current health status and pain levels and functional outcomes. A large number of workers reported significant continuing impacts of the injury. Self-rated health worse now than before the injury, the injury continues to affect life today, and workers not feeling fully recovered from the injury (Table 8). Similarly,

many workers reported significant levels of pain that interfere with their life or work (Table 9). Forty percent of workers with pain had seen a doctor in the past 4 weeks, and most of these (81%) reported that the doctors had been somewhat or very helpful with pain management.

Many workers also reported difficulty with ordinary activities such as lifting, climbing a flight of stairs, or handling objects; interestingly, workers did distinguish between functional difficulties they thought were due to the work injury versus those attributable to other reasons (Table 10). Workers also reported considerable impacts of injury on job performance (Table 11). However, less than 10% of current workers had cut down on their number of hours of work.

*Satisfaction and patient characteristics.* Patient satisfaction with specific aspects of care and patient reports of physician behavior varied substantially among patients with different characteristics, although there were few significant differences among groups in overall satisfaction with care (Table 12). Respondents who were younger, Spanish-speaking, non-white, lower income, less educated, or laborers reported significantly lower satisfaction with doctor-patient interaction. Workers with back injury or upper extremity nerve damage were more likely to report physician behaviors consistent with an occupational medicine orientation, whereas male workers and monolingual Spanish-speakers were less likely to report occupational medicine orientation. Relationship with supervisor and attorney representation were not significantly associated with satisfaction with medical care in this study.

There were significant differences among organizations from which the sample was drawn (sample subgroups) with regard to reports of occupational medicine orientation and satisfaction with doctor-patient interaction; these differences became insignificant when demographic characteristics were controlled for, and there were no significant differences among sample subgroups with overall satisfaction with care or with choice of provider.

*Outcomes and patient characteristics.* There were also significant self-reported differences in physical and emotional function, and amount of missed work, among workers with different characteristics (Table 13). Younger workers were more likely to report good physical functional outcomes. Caucasian respondents were more likely to report good emotional outcomes. Workers with upper extremity nerve damage were far less likely to report good functional outcomes; however, these workers were also less likely to miss any work as a result of their injury. Service workers and laborers, older workers, male

**TABLE 8**  
Self-rated Health After Work Injury

Item	%
Health now vs before injury	
Much worse	10.5
A little worse	22.4
About the same	48.8
A little better	10.2
Much better	8.0
How much injury affects life today	
Big effect	23.6
Some effect	34.0
Very little effect	21.5
No effect	21.0
Degree of recovery	
No improvement	10.6
Still room for improvement	59.0
Fully recovered	30.4

**TABLE 9**  
Self-reported Pain After Work Injury

Item	%
Pain frequency	
All the time/constant	12.9
Almost everyday	17.2
Several times/week	13.1
Once in a while	29.2
Not at all	27.6
Pain interferes with life	
All the time	12.6
Much of time	15.3
Some of time	51.1
None of time	21

workers, and Hispanic and monolingual Spanish-speakers were more likely to miss work.

*Differences in sample populations.* There were very significant demographic differences among respondents drawn from different sample

subgroups within the sampling frame (Table 14). For example, group C had a markedly higher proportion of Hispanic, Spanish-speaking, and "blue-collar" workers. Group D had higher education levels and more clerical workers. Injury types also varied greatly among groups, with group D reporting far more upper extremity nerve damage.

### Multivariate Analyses

The stepwise forward regression models selected satisfaction-subscale variables as strong, independent predictors of general satisfaction with care (Table 15). In the model that considered both satisfaction and nonsatisfaction variables for forward entry, satisfaction with provider choice was very highly associated (odds ratio [OR], 15.7;  $P < 0.01$ ) with overall satisfaction, as were high doctor/patient interaction (OR, 5.1;  $P < 0.01$ ) and satisfaction with claims handling (OR, 5.1;  $P < 0.01$ ). To a lesser degree, good functional outcome (OR, 2.9;  $P < 0.01$ ) and employer assistance in return to work (OR = 1.6;  $P = 0.03$ ) were associated with general satisfaction. The results were very similar for the model that considered only satisfaction variables. In the third model, which considered nonsatisfaction variables, back injury type was negatively associated with general satisfaction (OR, 0.6,  $P = 0.03$ ); that is, low back patients were less sat-

isfied compared with other injury types.

### Respondent Comments

An open-ended question ("Is there anything else you think we should know about the medical care you received after your work injury?") elicited an outpouring of response, with nearly half of respondents providing additional comments (Table 16). Recurrent themes emerged in these comments, including desire for more choice of provider, particularly if dissatisfied with the treating physician; lack of continuity of care in clinic settings; lack of adequate time with the physician; frustration and anger about the claims handling process (especially delays or denials in authorizations of care, other benefit delays, lack of information about rules and rights, and being treated "like a criminal"); distrust of the "company doctor"; frustration with continued pain and functional limitations; concerns about lengthy treatments that did not produce improvement; and lack of availability of modified work. On the other hand, many workers also expressed great appreciation for the care they had received, often singling out particular individuals who had demonstrated care for them as a person or who had taken time to explain details. Many respondents also thanked the interviewer for the opportunity to talk about their experience after work injury.

**TABLE 10**  
Self-reported Functional Difficulty After Work Injury ( $n = 813$ )

Item	Lifting 10 Pounds	Climbing 1 Flight of Stairs	Handling Objects	Emotional Problems
Difficulty with ordinary activities (%)				
A lot of difficulty	10.3	7.9	10.1	10.1
Some difficulty	25.1	14.3	17.8	16.9
A little difficulty	16.6	14.7	14.3	21.0
No difficulty at all	48.1	63.0	57.8	52.0
Some difficulty due to injury or other reason (%)				
Because of injury	67.4	47.8	62.6	NA*
Some other reason	9.8	30.8	20.5	NA
Both injury and other	22.8	21.4	16.9	NA

\* NA, not applicable.

**Discussion**

The respondents represented a spectrum of workers, injury types, geographic locations, employers, and care delivery systems; however, the sample was not randomly drawn and

may not be truly representative of injured workers or the California workers' compensation health care system. Although our response rate was acceptable, the nature of response bias in surveys of injured

workers is unknown. Previous analysis of the pilot test of the survey instrument suggests that there is no significant bias with respect to satisfaction with care but that respondents might be slightly more likely to report poorer recovery and functional outcomes than nonrespondents.<sup>10</sup> Further research on this issue in larger populations of injured workers would be helpful, particularly because an intensive effort was required to obtain a response rate over 60%.

There is little published information about the availability of or patterns of care for workers' compensation patients. Nearly one quarter of respondents indicated at

**TABLE 11**  
Self-reported Impact of Injury on Job Performance (n = 813)

Item	%
Difficulty performing job because of work injury	
Some or a lot of difficulty	28.9
A little difficulty	23.6
No difficulty at all	47.5
Work injury limited kind of work I can do	
Some or a lot	23.9
A little	23.7
Not at all	52.5

**TABLE 12**  
Satisfaction, Doctor-Patient Interaction, and Occupational Medicine Orientation by Patient Characteristics

Item	% Very/Somewhat Satisfied With Care (n = 235)	% Very/Somewhat Satisfied With Choice of Provider (n = 234)	% High Doctor-Patient Interaction (n = 236)	% High Occupational Medicine Orientation (n = 237)
Age				
<40 yr	76.2	71.6	49.4*	36.2
≥40 yr	76.9	73.1	67.1	42.4
Gender				
Male	76.0	72.0	55.5	32.9*
Female	76.8	72.9	60.9	42.5
Spanish speaking				
No	77.1	71.7	62.2*	40.3*
Yes	71.7	80.0	33.3	28.9
Race/ethnicity				
African-American, Asian, other	75.3	72.5	57.3*	40.8
Latino	77.6	76.5	42.6	33.6
White	76.4	70.0	68.6	41.0
Some college				
No	77.1	76.0	53.7*	38.7
Yes	76.2	70.6	62.2	39.3
Income <\$35K				
No	74.6	70.3	53.7*	37.3
Yes	78.8	74.3	64.0	40.3
Occupation				
Professional, technical, sales	78.6	70.0	64.0*	36.2*
Clerical	74.8	74.6	63.9	45.9
Service	80.7	77.7	63.4	42.6
Farm, crafts, laborer	74.2	69.9	46.2	31.7
Injury type				
Back sprain/strain	71.9	61.0*	54.3	45.7*
Upper extremity nerve damage	76.3	71.4	63.6	49.6
Other	78.5	77.9	59.8	33.4
Sample subgroups				
A	79.3	77.4	66.5*	42.0*
B	77.0	71.2	53.2	32.4
C	77.5	74.6	47.4	33.3
D	72.8	68.4	64.0	45.6

\* One or more column percentages are different at P < 0.05.

TABLE 13  
Functional Outcomes and Work Missed by Patient Characteristics

Item	% Good Functional Outcome	% Good Emotional Outcome	% Missed No Work	% Missed >4 Wk of Work
Age				
<40 yr	72.8*	78.3	24.7*	28.5
≥40 yr	58.7	72.8	31.3	30.6
Gender				
Male	71.3*	74.4	15.7*	34.1
Female	61.4	75.9	35.2	27.9
Spanish speaking				
No	65.1	76.0	30.4*	29.3
Yes	64.0	70.3	9.1	37.5
Race				
African-American, Asian, other	60.2	71.1*	29.2*	41.0*
Latino	66.2	72.0	18.9	39.2
White	66.5	79.4	32.6	27.1
Married/living together				
No	64.6	74.8	33.6*	29.3
Yes	65.0	75.6	24.7	31.1
Some college				
No	64.9	75.8	19.7*	32.9
Yes	65.1	75.2	33.5	28.4
Income <\$35K				
No	64.0	73.8	23.4*	31.5
Yes	66.6	77.4	32.1	29.3
Occupation				
Professional, technical, sales	65.2*	77.7	36.3*	22.6*
Clerical	57.1	74.8	39.0	25.6
Service	73.8	74.8	10.7	44.6
Farm, crafts, laborer	68.9	74.2	17.5	34.5
Injury type				
Back sprain/strain	64.7*	76.2	16.4	33.8
Upper extremity nerve damage	44.0	72.0	49.6	31.1
Other	70.3	75.8	27.7	28.4
Sample subgroups				
A	69.1	78.3	21.5	25.4
B	66.5	73.5	35.7	29.0
C	68.2	69.3	30.7	46.3
D	58.1	77.9	40.4	26.4

\* One or more column percentages are different at  $P < 0.05$ .

least a little difficulty in obtaining care, a finding consistent with anecdotal reports of access problems after work injury.<sup>11</sup> The large proportion of workers first receiving care in an emergency department suggests that improvements in referral to and use of acute care clinics might reduce the high costs of care associated with emergency department use.<sup>12,13</sup>

Approximately one quarter of injured workers reported dissatisfaction with overall care and with the choice of providers. These findings are consistent with recent findings in surveys of injured workers in Minnesota and

Florida.<sup>8,9</sup> Injured workers tended to report somewhat less overall satisfaction with care than enrollees in commercial or Medicaid managed care plans.<sup>14</sup> The high levels of dissatisfaction with care and with physician-patient communication are cause for concern. Satisfaction with care may impact care-seeking behavior, compliance with prescribed care, and changing of physicians.<sup>15,16</sup> The physician-patient relationship may be an important influence on patients' health outcomes.<sup>17</sup>

Nearly 40% of workers believed that their treating physician did not understand the impact of their injury

on their ability to do their job: large proportions of workers also report that the treating physician did not discuss return to work or prevention of reinjury. The importance of a focus on functional recovery and return to work in the treatment of common work-related injuries is now well recognized.<sup>18</sup> The survey results suggest, however, that there is substantial room for improvement in this aspect of workers' compensation health care.

This introductory exploration suggests that injured worker satisfaction with care is rooted in the experience of care, interactions with health professionals, and perceived outcomes. However, factors not directly related to the quality of medical care (eg, satisfaction with claims handling) also seem to significantly affect workers' satisfaction with care.

Injured workers have a unique perspective on the medical care they receive and on their recovery after injury. Patient satisfaction surveys are a key component efforts to assess the value of health care services. Insight into workers' perspective on quality of care can provide important information for health care providers and organizations, employers, claims administrators, purchasers, and policymakers. Such information can be used for health care quality improvement, negotiation of health care contracts, consumer and provider education, choice of providers, or provider network enhancement. For employers, workers' perceptions of care and outcomes after injury may provide important insights into issues that affect workplace morale and productivity. For claims administrators, satisfaction with medical care may affect control over medical treatment and litigation rates. Managed care organizations can use survey information to target quality improvement efforts; patient surveys can identify areas in which organizational resources are needed to augment physician services (eg, enhanced case management services) or when more

**TABLE 14**  
Sample Groups by Demographic and Injury Characteristics

Item	Sample Group				Overall
	A	B	C	D	
General					
<i>n</i>	213	225	138	237	813
Respondent's mean age (yr)	40.4	38.2	38.0	47.4	41.4**
% Age ≥40 yr	49.3	42.8	40.7	79.5	55.2**
% Female	51.6	78.1	37.0	75.5	63.4**
Race/ethnicity (%)					
White/Caucasian	50.2	42.3	30.7	63.6	48.6**
Hispanic/Latino	19.2	31.4	59.1	12.3	27.3
African-American, Asian, other	30.5	26.4	10.2	24.2	24.1
Some college (%)	59.0	62.3	39.1	74.7	61.1**
Income >\$35K	51.2	53.0	33.8	57.9	50.7**
Spanish speaking	10.3	4.0	39.9	2.5	11.3**
Occupation (%)					
Professional, technical, sales, management	24.4	36.6	8.7	24.5	25.1**
Clerical	19.2	37.9	7.2	50.2	31.4
Service	17.8	3.1	37.0	11.8	15.3
Farm, crafts, laborer	38.5	22.3	47.1	13.5	28.2
Injury type (%)					
Back sprain/strain	29.1	19.6	26.8	28.3	25.9**
Upper ext nerve damage	8.0	14.3	4.3	27.0	14.7
Other	62.9	66.1	68.8	44.7	59.5
Covered by insurance when injured (%)	85.8	74.6	54.7	93.6	79.7**

\*\* Row percentages or means significantly different at  $P < 0.01$ .

**TABLE 15**  
Multivariate Analysis: Association Between Overall Satisfaction With Care and Satisfaction Subscales, Functional Outcomes, and Demographic Variables\*

Independent Variable Associated With Overall Satisfaction	OR	P Value
Model 1: Satisfaction subscales + functional outcomes + demographic factors		
Very/somewhat satisfied with choice of provider (0 = No, 1 = Yes)	15.70	<0.001
Very/somewhat satisfied with claims handling (0 = No, 1 = Yes)	5.12	<0.001
High doctor-patient interaction (0 = <24 pts, 1 = 25-30)	5.06	<0.001
Good functional outcome (0 = No, 1 = Yes)	2.88	<0.001
Hired an attorney (0 = No, 1 = Yes)	0.41	<0.001
Employer very helpful in return to work (0 = No, 1 = Yes)	1.63	0.02
Model 2: Restricted to satisfaction + functional outcome subscales		
High doctor-patient interaction (0 = <24 pts, 1 = 25-30)	11.39	<0.001
Very/somewhat satisfied with claims handling (0 = No, 1 = Yes)	3.44	<0.001
Good functional outcome (0 = No, 1 = Yes)	2.89	<0.001
Very/somewhat satisfied with choice of provider (0 = No, 1 = Yes)	2.70	<0.001
Model 3: Restricted to functional outcome and demographic		
Good functional outcome (0 = No, 1 = Yes)	3.26	<0.001
Injury type, back	0.64	0.03

\* Stepwise forward multiple logistic regression;  $P$  for inclusion  $\leq 0.1$ . OR, odds ratio.

**TABLE 16**  
Correlation Between Satisfaction Subscales and Functional Outcomes<sup>a</sup>

Variable	SC	SP	DPI	OMO	GFO
Satisfied with care (SC)	-				
Satisfied with choice of provider (SP)	0.55**	-			
High doctor-patient interaction (DPI)	0.33**	0.28**	-		
Occupational medicine orientation (OMO)	0.21**	0.13**	0.38**	-	
Good functional outcome (GFO)	0.22**	0.15**	0.05	-0.05	-
Good emotional outcome (GEO)	0.15**	0.12**	0.08*	0.13	0.38**

<sup>a</sup> Because of missing data,  $n$  for pairwise comparisons ranges from 784 to 808.

\*  $P < 0.05$ ; \*\*  $P < 0.01$ .

aggressive physician education and support may be warranted. Labor organizations can use patient survey results to advocate for focused improvements in care.

Assessment of injured worker satisfaction with care and outcomes after injury provides an important tool for monitoring and improving quality; it should be more routinely implemented in the workers' compensation system.

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