

## **IV. LITERATURE REVIEW ON ACCESS AND QUALITY IN WORKERS' COMPENSATION MEDICAL CARE**

Health care delivery is based on the implicit assumption that access to quality care produces better clinical outcomes and patient satisfaction. A considerable amount of attention has been focused in the past decade or so on testing this assumption, by explicitly measuring the relationship between access and outcomes, and between quality and outcomes. This section briefly reviews the literature on quality and access to care, citing studies from both the general health care literature and the occupational medicine literature, where available, to summarize what is known about the association of access to care and quality of care with patient clinical outcomes and patient satisfaction with care.

Quality and access are interrelated concepts in both the general health care field and in the WC system, though this is not to say one cannot exist without the other. The relationship between access and quality is especially apparent in the goal of this report, "To analyze whether there is adequate access to quality health care and products for injured workers" in California (LC § 5307.2). Between 1995 and 2002, the Robert Wood Johnson Foundation, through its Workers' Compensation Health Initiative,<sup>21</sup> supported pilot programs studying various aspects of cost containment and quality improvement in WC systems. One product of this program, the Rhode Island Department of Labor and Training's Model State Technical Resource Center for Improvement of Workers' Compensation Medical Care, defined quality of care in the WC system as being comprised of five dimensions: (1) appropriate clinical care, (2) injured worker satisfaction, (3) access to care, (4) timeliness, and (5) work-related outcomes such as return-to-work.<sup>22</sup> For this report, relevant research and background on quality and access to care are presented using the same five dimensions defined by the Rhode Island study, preceded by a brief section on quality of care in general. Furthermore, the current study attempts to measure each of these dimensions of quality directly, with the exception of appropriateness of care, for which proxy measures are used.

## Quality

In 2001, the Institute of Medicine's Committee on the Quality of Health Care in America issued a report in which they defined quality 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."<sup>23</sup> Therefore, quality of care is a critical factor in achieving better clinical outcomes and improved patient satisfaction. Numerous programs, including provider incentive systems, clinical management programs, outcome-based systems, pay for performance, satisfaction surveys, and report cards have been implemented to improve the quality of the health care system. In contrast to the general medical field, however, research into quality of care in the WC system is still in its infancy.<sup>24</sup> However, despite advancements in the general medical and WC fields, quality of care is still lower than expected. A RAND study found that Americans do not receive all of the recommended medical care they need<sup>25</sup> and the Agency for Healthcare Research and Quality noted in their *2005 National Quality Healthcare Report* that quality continues to increase at a moderate pace, but that quality is not consistent for all individuals or populations.<sup>26</sup>

## Appropriate Clinical Care

Appropriate clinical care is a dimension of quality that relies on utilization levels, physician practice patterns, and physician behaviors. In the current study, appropriate clinical care is not measured directly, but questions relating to a provider's WC experience and occupational medicine behavior are used as a proxy for certain aspects of appropriate clinical care.

Research has shown that the level of utilization of medical care is not directly related to health outcomes; that is, higher utilization and costs do not always result in better outcomes. Numerous studies of the general health care field have shown that while the United States spends more money on health care than any other industrialized country, health outcomes tend to rank among the worst.<sup>27-32</sup> In one study conducted by the Workers' Compensation

Research Institute (WCRI), injured workers in California, Florida, Tennessee, and Texas received more medical services and had higher medical expenditures for their claims than those in Massachusetts, Pennsylvania, and Wisconsin, but they had worse outcomes despite having injuries of similar severity.<sup>33</sup> Outside the WC system, studies done on homogenous patient populations have found costs and utilization appear to be separate from actual need for services.<sup>34</sup> One group of researchers found that in two groups of patients with similar chronic conditions, those who received care in a high-cost region had worse outcomes than those in a low-cost region.<sup>35</sup> John Wennberg, in discussing this result, concluded that because low-cost regions had better outcomes than high-cost regions “systems of care serving high-cost regions are inefficient because they are wasting resources.”<sup>36</sup> In the WC system, the Oregon Medical Outcomes Study found that there was an inverse relationship between utilization level (number of services and treatment duration) and outcomes, such that “optimal results occur when service utilization is *below* the community standard.”<sup>37</sup> This is not surprising, given that the most severe injuries require the most care and may have worse outcomes relative to minor injuries. On the other hand, there is some basic level of care that everyone should receive. Under-utilization of health services has also been documented and can have serious effects on health outcomes.<sup>25, 34</sup> It is clear from these studies that level of utilization is not directly related to health outcomes and both over- and under-utilization can have serious consequences on health and outcomes.

Disease-specific utilization management systems, including the use of evidence-based medicine (EBM) guidelines, have been ubiquitous components of the general health care field since the late 1980’s. With the 2004 WC reforms, utilization management is now a central feature of the California WC system. SB 228 introduced legislation requiring that medical treatment in the California WC system be based on “evidence-based, peer-reviewed, nationally recognized standards of care” (LC § 5307.27). Similar to the California WC system, the WC systems in Hawaii, Alaska, and North Dakota have elected to use ACOEM guidelines either in whole or part.<sup>38</sup> There is some evidence that clinical guidelines do work to reduce costs and improve quality by linking scientific evidence with the medical practice.<sup>39-41</sup> Clinical trials have shown some drugs and procedures do more harm than good for patients or certain subsets of patients, and as a result their use has been restricted or

stopped entirely.<sup>42</sup> Despite this, the reliance on guidelines, especially the ACOEM guidelines, has been controversial for a number of reasons. Providers have raised concerns that ACOEM guidelines do not adequately address all aspects of care. For example, a systematic comparison of the ACOEM guidelines and the American Society of Interventional Pain Physicians (ASIPP) guidelines showed that the ASIPP guidelines were more applicable to chronic spinal pain than ACOEM guidelines.<sup>43</sup> A recent analysis of ACOEM guidelines and 4 other guidelines for possible use in the California WC system found that while no comprehensive guidelines were clearly superior to ACOEM, ACOEM guidelines were not valid for all surgical conditions, and in general were not valid for non-surgical conditions.<sup>44</sup> Furthermore, the use of guidelines in general has been questioned as an effective means for improving quality. In a 2005 *Health Affairs* article, Alan Garber reported that while clinical guidelines have become a credible source of information for choosing effective care techniques and formulating performance incentive programs, their complexity makes them difficult to actually assess compliance with the guidelines in different situations and demands.<sup>45</sup> Finally, research has shown that adoption of clinical guidelines by physicians requires a multifaceted approach including, but not limited to, academic detailing, audit and feedback, and multiple reminders.<sup>46</sup> Although California law mandates the use of guidelines for WC, physician resistance towards those guidelines may result in provider dissatisfaction, and increase the perception among both providers and their patients that injured workers do not have access to quality care. Even the most sound and effective clinical guidelines can only work to the extent that they are actually used consistently by providers, whether by a PTP or peer reviewer conducting UR.

UR programs have been used for over 20 years in the general health care field as a way to manage the levels of utilization. As of 2000, the California WC system and 29 other states have been using UR for well over a decade in an attempt to reduce costs and prevent unnecessary and ineffective treatments.<sup>47-49</sup> UR is most commonly performed on a case-by-case basis by an external reviewer; methods can include preauthorization review, restrictions on treatment duration or intensity, limits on length of hospital stay, and mandatory review of surgical procedures or expensive diagnostic tests.<sup>50</sup> Prior to the 2003-2004 WC reforms, UR was not mandatory in California. A 2001 review of UR plan summaries found considerable

variation in the clinical criteria used in the UR process and in the internal appeals processes of California WC claims administrators.<sup>49</sup> Given the treating physician's presumption of correctness, the potential impact of UR prior to WC reform in preventing unnecessary and ineffective treatments and managing costs was likely minimal.

Although it has been successful in reducing costs both in the general medical care field and in WC,<sup>51-53</sup> UR has sometimes been viewed as being overly burdensome and restrictive to providers and potentially detrimental to patients.<sup>53, 54</sup> Historically, California has had higher levels of utilization of some WC services, specifically physical medicine, psychological therapy, and chiropractic care, that has led to higher WC costs relative to other states.<sup>55</sup> And, while there are few studies on UR usage within the WC system, those that do exist show UR to reduce hospitalizations and surgeries with unknown effects on quality of care.<sup>51, 56, 57</sup> In terms of costs, though, a recent Bickmore Risk Services report from 2006 found evidence-based medicine, including UR and the use of ACOEM guidelines, produced a 27% savings to the California WC system.<sup>58</sup> Another issue is whether insurers are meeting UR deadlines specified in the reform legislation. The Bickmore report indicated that about 5% of claims subjected to UR had unfavorable results, which includes both denial of necessary care and delayed approval of necessary care.<sup>58</sup>

Over the years there has been extensive research into provider behaviors and ways to influence practice patterns and levels of clinical care, but as they relate to WC three primary areas stand out: provider experience, occupational medicine and interpersonal behaviors, and provider incentives. Provider experience is especially important as it has been shown to have a direct link to patient health outcomes. Numerous studies have documented the relationship between the physician's experience level and patient outcomes. Physicians with a greater volume of services provided have better patient outcomes, and vice versa.<sup>59, 60</sup> In other words, although there is a strong association between volume and outcomes, it is difficult to demonstrate conclusively the direction of causality. In the California WC system, Swedlow and Gardner reported that providers with less WC experience had poorer outcomes, measured as higher costs, higher attorney involvement, and longer disability claims.<sup>61</sup>

For providers in the WC system, occupational medicine behaviors and interpersonal aspects of care are integral parts of appropriate clinical care for injured workers. Occupational medicine behaviors include those related to understanding an injured worker's job, discussing how to avoid reinjury, work restrictions, and return-to-work. In a 1998 survey of California injured workers, 21% of injured workers reported the provider did not understand their job, 39% felt their provider did not understand the impact of the injury/illness on their job, 33% said the provider did not discuss work restrictions or return to work, and 36% were not told how to avoid reinjury. Furthermore, with regard to the interpersonal aspects of care, many respondents were dissatisfied (reported "fair" or "poor") with their provider in terms of communication and being treated with courtesy and respect.<sup>2</sup> In a separate focus group study, some participants reported dissatisfaction with their provider's understanding of their job or injury.<sup>62</sup> These findings are similar to those found in other states. A 2004 Pennsylvania injured worker survey found only 67% of the sample reported that the doctor discussed treatment options<sup>3</sup> and a study from Washington State found 74% of injured workers were satisfied with their provider's interpersonal aspects of care.<sup>5</sup> Given that interpersonal aspects of care are related to an injured worker's desire to seek care and to follow through with treatment recommendations, and that occupational medicine behaviors may be correlated with health outcomes,<sup>5, 63-65</sup> any dissatisfaction on the part of the injured workers may be cause for concern.

Provider incentive systems were developed as a way to influence providers' delivery of care through, for example, pay for performance, provider profiling measures, and capitated care. Financial incentives for California physicians are very common; in fact, one study found that 38% of primary care physicians in managed care organizations encounter some form of financial incentive in addition to their usual contracted rates. And, while all financial incentives are not tied to quality of care, physicians facing financial incentives based on quality of care and patient satisfaction are more likely to be supportive of the arrangement than those with incentives based on other factors.<sup>66</sup> The Pacific Business Group on Health (PBGH) has produced a number of reports on the use of incentives in health care delivery that describe methods for aligning physician incentives with reliable, appropriate, proven,

patient-centered care. Some of PBGH's recommendations include national standards for measuring quality, increased use of electronic health records for tracking clinical performance, and financial incentives linked to a common, comprehensive set of core measures for primary and specialty care.<sup>67, 68</sup> Studies looking at capitated care, a common method used in California given the high penetration of managed care organizations,<sup>69</sup> have found mixed results in terms of quality and health outcomes. Capitated care as used in HMOs has been shown to increase preventive services and decrease hospitalization and high cost services with no reported difference in quality of care, though access and satisfaction are lower in HMOs than non-HMOs.<sup>70</sup> Overall, while there are risks to using provider incentive systems, including reduced continuity of care, reduced access to certain physician types, and conflicts of interest between provider and patient,<sup>71</sup> evidence seems to support their use when linked to quality of care and patient satisfaction. However, it is important to note that provider incentives based on patient satisfaction may be problematic in the WC system. In the WC system, providers are not only responsible for an injured worker's medical care, but also for evaluating the nature of the injury or illness (work or non-work related), rating the level of impairment, determining the time needed off from work, and working within the UR process to get care authorized. If injured workers are dissatisfied with any of these aspects of their WC claim, the worker may give a poor satisfaction rating to the provider. It is therefore difficult for an injured worker to separate out the clinical aspects of care from the other, more administrative and legal aspects of care.

### **Injured Worker Satisfaction**

Patient satisfaction surveys have become a routine part of measuring quality. The California DWC has previously addressed this issue by developing and testing a patient survey intended to assess injured workers' satisfaction with their care and perceived outcomes. This DWC survey, conducted in 1998, found that more than 25% of respondents were dissatisfied with their overall care, 39% felt the physician most involved in their care did not understand the relationship between their job responsibilities and the injury, 28% reported being dissatisfied or very dissatisfied with their choice of provider, and very few felt they had fully recovered from their injury after 6 months.<sup>2, 72</sup> A survey of injured workers conducted by

WCRI in California in 2002 and 2003 found that 80% reported being somewhat or very satisfied with their overall care.<sup>33</sup> The Washington State Workers' Compensation Managed Care Pilot Program looked at patient satisfaction for managed care and FFS WC delivery systems. The study found that patients were less satisfied in a capitated, occupational-medicine delivery model than in regular FFS.<sup>73</sup> In a 2004 Pennsylvania study, 83% of injured workers reported being very satisfied or satisfied with their overall care in the WC system and 83% felt that the care they received in the WC system was as good as other health care they had received.<sup>3</sup> Regular evaluations of patient satisfaction could help improve quality and inform payers and workers about their choices in the WC medical system.<sup>2</sup> In Washington, survey and claims data were used to determine that injured worker satisfaction with interpersonal and technical aspects of care was positively associated with their overall treatment experience, including ability to return to work. Injured workers who reported less favorable treatment experience were more likely to be receiving time-loss compensation for inability to work due to injury than their more satisfied counterparts.<sup>5</sup> Similarly, in the Oregon WC system one survey found a positive relationship between injured worker satisfaction and health outcomes.<sup>37</sup>

### **Access to Care**

The health services research literature has found that patients with better access into the medical system are more likely to receive comprehensive, higher quality care, and therefore experience better outcomes.<sup>74, 75</sup> Similar to quality of care, access is a multidimensional concept that cannot be quantified with a single clinical measure. Therefore, patient choices of provider, specialist referral patterns, patient characteristics, and physician supply and willingness to participate have all been used as proxies for determining whether access problems exist and to what extent.

The California WC reforms of 2003 and 2004 changed the dynamics of patient and employer choice over the PTP. Prior to SB 899, employers controlled the first 30 days of treatment; however, SB 899 allows the employer to require an employee to seek all care within an MPN, although employees retain the right to select their own provider after the

first visit. Within an MPN, the injured worker selects a physician and if he or she disagrees or is unhappy with that physician's treatment or diagnosis, he/she can select any other physician in the MPN, and again if that is not a good fit, select another, rather than go to litigation. This change in choice of PTP has consequences for employees as well as the WC system. A recent WCRI study found that costs were higher and outcomes were poorer for workers who selected their own provider, when compared to injured workers who had their provider selected by their employer. Although these self-selecting workers actually reported better satisfaction with their overall care, they did not experience better outcomes. In addition, workers who selected a new provider rather than someone they had an existing relationship with were less likely to return to work, took longer to return to work if they ever did, and had lower levels of satisfaction and physical recoveries.<sup>76</sup> A separate WCRI report found that the percentage of California injured workers reporting problems getting a provider they wanted was 13% and 17% for first provider and most involved provider, respectively.<sup>33</sup> The 2004 Pennsylvania study of injured workers found that since 2001, panel respondents, those who used a designated provider, had "become the group that is better informed about rights and benefits, is more likely to be satisfied with care received, and also returns to work earlier."<sup>3</sup> Evidence from the general health care field shows that patients generally report decreased satisfaction when they have limited choice of provider, but that this does not have an effect on health outcomes.<sup>73,77</sup>

Access to specialists and specialty care results in better health outcomes for patients for certain clinical procedures. For example, improved outcomes for acute myocardial infarction and rheumatoid arthritis seem to be associated with care given by a cardiologist and rheumatologist, respectively.<sup>78-80</sup> A recent study of rheumatoid arthritis sufferers found that early referral by primary care physicians to rheumatologists reduces joint pain and improves functional outcomes, but many factors impact the ability of patients to obtain these referrals. Patient preferences, interpersonal relationships, and physician confidence and expectations, among others, influence referral patterns and prohibit rheumatoid arthritis sufferers from receiving proper care.<sup>81</sup> Another study examining physician referrals to physical therapists found that referrals were primarily driven by the age, gender, and educational level of patients, and by variations between spinal injury treatment centers. This finding suggests

that much of physical therapy referral practices are driven not by clinical guidelines, but by other factors that could indicate problems with access to care and inappropriate use of physical therapy.<sup>82</sup> In Oregon, orthopedic surgeons had better outcomes for occupational knee and shoulder injuries than other types of providers, and chiropractors had the best outcomes for non-surgical lower back ailments.<sup>37</sup>

Access to medical care is not only influenced by system characteristics; worker demographic characteristics and industry of employment can also impact the likelihood of seeking and receiving care when injured at work. The general health care literature has documented substantial disparities in access to and quality of care based on race/ethnicity, age, gender, and various other factors, resulting in poorer outcomes for certain subpopulations.<sup>28, 83-85</sup> A survey of migrant garment workers found that many of the women working in the industry, although legally eligible to access the WC system, do not do so. Instead, they live with chronic pain and continue to work with injuries. The study also found that 99% of patients surveyed at the Asian Immigrant Women Workers Clinic (AIWWC) in Oakland, California had one or more diagnosed work-related injuries, and that 94% of them had pain that was severe enough to interfere with their daily activity levels. In addition, many of these injured workers refused to file for WC benefits because they did not know about the system or because they were afraid of consequences on the job.<sup>86</sup> Similar findings were found among Las Vegas hotel room cleaners.<sup>87</sup> Negative employer response – including indifference, retaliation, blacklisting, and firing – are common concerns among injured workers and present a significant barrier to reporting workplace injury.<sup>88</sup> Furthermore, factors related to underreporting of workplace injuries by low-wage workers include: immigrant status, employment by a small business, limited English proficiency, no union representation, lack of benefits including health insurance and sick leave, and geographic factors.<sup>88</sup> The Oregon Medical Outcomes Study found that patient characteristics such as age, gender, and race were not significantly associated with medical outcomes, but that those patients with the lowest education and income levels also had the worst outcomes.<sup>37</sup> In New Mexico, injured women workers reported far worse experiences and outcomes than men.<sup>89</sup> California injured workers who were “younger, Spanish-speaking, non-white, lower income, less educated, or laborers” reported significantly lower levels of

satisfaction with provider interactions than those workers who did not have those characteristics.<sup>2</sup>

The recent reforms to the California WC system have brought increased attention to the system, and have resulted in several smaller surveys of providers conducted by provider-trade associations. A recent report by the California Orthopaedic Association found that injured workers faced obstacles to obtaining care from orthopedic surgeons and other physician specialists in the state following recent reforms.<sup>20</sup> The report indicates that both orthopedic surgeons and neurosurgeons are decreasing the number of injured workers they treat, or dropping out of the WC system entirely. Another survey of the CMA found that sampled physicians were experiencing low payments and slow reimbursement, as well as denial of claims. The CMA reported that almost two-thirds of the physicians who responded to the survey intended to decrease or cease their participation in the WC system.<sup>19</sup> These surveys expose a certain degree of physician displeasure with the current system and recent reforms. While both surveys identify substantial problems among the population sampled, small sample sizes and the narrow scope in terms of provider types surveyed limit the validity and generalizability to the California WC system as a whole.

At least one study questions the validity of self-reported physician intention to leave clinical practice.<sup>90</sup> In this study, physician dissatisfaction had a strong association with intention to leave clinical practice, but was not associated with actual departure from practice. Self-reported intention to leave may be more of a proxy for dissatisfaction than an accurate predictor of actual behavior.<sup>90</sup> Regardless, though, physician supply is a critical component of access to care. An article by Joseph LaDou claims that the field of occupational medicine is in decline as evidenced by the decrease in the number of individuals receiving board certification in the field and the decrease in the number of residency programs.<sup>91</sup> In response to LaDou's claims, three members of ACOEM state that the field of occupational medicine is in fact moving forward with increasing membership in ACOEM, increasing numbers of practitioners and jobs, a growing science base, and increasing respect and power on a national level.<sup>92</sup> Unfortunately, no reliable counts of the number of WC providers in

California are available and therefore actual attrition rates are hard to determine. In the future, baseline estimates of WC provider numbers in the state will have to be measured.

The 2003-2004 WC reforms reduced the fee schedule for most physician services by 5% and placed limits on utilization through the use of ACOEM guidelines, UR, and explicit caps on selected types of visits. These changes are likely to have a major impact on the total WC revenue received by at least some WC providers. Furthermore, the level of the current OMFS and possible changes in the OMFS may affect physician participation in WC. A recent study by WCRI shows that California on average pays about 21% above the Medicare fee schedule for physician services as of July 2006, whereas the median value across all states is 55%.<sup>6</sup> For evaluation and management services (i.e., visits), California WC physicians receive on average 13% *below* the Medicare fee schedule.<sup>6</sup> Physician participation in public programs has been linked to the level of physician fees in both Medicaid and Medicare. Several studies have concluded that individual physicians are more likely to accept Medicaid, Medicare, or other public programs if the fee is at a higher level.<sup>93</sup> Additionally, studies have determined that while higher fee levels may be associated with greater use of physician office visits, hospital-based facilities, and clinics, they do not appear to have a direct effect on overall service use by Medicaid beneficiaries.<sup>94,95</sup> Recent evidence indicates that Medicare physician payments are generally adequate and not producing significant access problems for beneficiaries.<sup>96</sup> A previous study of Medicare fee schedule reductions for eleven surgical procedures found no impact on access for potentially vulnerable Medicare enrollees and that volume changes for the eleven procedures were not as significant as predicted.<sup>97</sup> In an analysis of 1999 National Ambulatory Medical Care Survey data, 22% of physicians refused to accept new Medicaid cases, and over 26% of physicians refused to accept new WC cases, presumably because of low fees.<sup>98</sup>

### **Timeliness**

In addition to barriers to care related to patient characteristics, time and distance to treatment can negatively affect access to medical care. Though there does not seem to be a consensus on the maximum time or distance that is appropriate, the California regulations pertaining to

MPNs define adequate access as 15 miles or 30 minutes to a PTP, 30 miles or 60 minutes to a specialist, and three days between injury and first visit with a PTP (LC § 9767.5 b-c). In 2004, 89% of Pennsylvania's injured workers were able to see a doctor within 48 hours of their injury. Although Pennsylvania did not report any information on distance or length of travel time to the PTP, they did mention that wait time for appointments with certain specialists (neurology and neurosurgery) were months long and getting worse.<sup>3</sup> The 1998 Oregon Medical Outcomes Study found that receiving the majority of medical care within the first 30 days of injury produced better outcomes for injured workers, though this was happening in only 14% of the cases.<sup>37</sup> According to a WCRI study, 84% of injured workers in California reported being somewhat or very satisfied with the timeliness of their very first visit, but only 67% reported similar satisfaction with the timeliness of their initial visit to the provider most involved in their care.<sup>33</sup> Similar research has been conducted on veterans' use of hospital, surgical, and outpatient services in the Veterans Health Administration of the Department of Veterans Affairs (VA) system. Studies have found that veterans' use of services is sensitive to distance; utilization of services decreases as travel distance increases up to 15 miles, at which point increases in distance do not affect utilization further.<sup>99</sup> For elderly veterans, living 30 to 40 miles from a VA facility decreases service use per year compared to those living closer.<sup>100</sup> To the extent that distance decreases necessary health services utilization, this clearly will have a significant and negative effect on health outcomes.

### **Work-Related Outcomes**

Return-to-work outcomes are a key component of quality, as getting injured workers back to work is one of the main goals of any WC program. However, return-to-work can be problematic if injured workers are sent back to work too soon after injury or if employers do not or are not able to accommodate necessary work changes to prevent reinjury. Furthermore, medical outcomes do seem to play a significant role in patients' satisfaction with their care. The 1998 DWC survey of California injured workers found that just under half of the respondents felt that they had returned to work "too soon" and just under one quarter felt that their employer was not helpful with their return-to-work.<sup>2</sup> The DWC study

also found that just over half of the injured workers had difficulty performing their job because of their work injury and just under half felt that their work injury limited the kind of work they could do.<sup>2</sup> Another study found that injured workers in Pennsylvania and Wisconsin had better physical health and functional recovery and better return-to-work outcomes than workers in California.<sup>33</sup> In the three and a half years following their injury, workers in California were less likely to return to work for at least one month compared to workers in Pennsylvania and Wisconsin (90% vs. 93% and 95%).<sup>33</sup> In Pennsylvania, only 66% of injured workers were satisfied with the timing of their return-to-work in 2004.<sup>3</sup> These findings suggest an increased use of programs that improve return-to-work outcomes may be one method for improving satisfaction and quality. A literature review of modified work programs found that, in addition to many of them being cost-effective, they enabled faster and more successful return-to-work outcomes.<sup>101</sup>

## **Conclusion**

In summary, quality of care in the WC system has been conceptualized as consisting of five dimensions: (1) appropriate clinical care, (2) injured worker satisfaction, (3) access to care, (4) timeliness, and (5) work-related outcomes. Evidence has shown that patients with better access to care are more likely to receive comprehensive, higher quality health care, and therefore experience better outcomes. And, while some steps have been taken in the California WC system to address these five dimensions, such as developing standards for timeliness of care and the use of ACOEM guidelines, it is clear from the literature that there are numerous dimensions for both measuring and improving quality and access to medical care. Therefore, it is appropriate for the DWC, under the mandate of California LC § 5307.2, to study whether there is adequate access to quality health care for injured workers according to the multiple dimensions of quality and access discussed above. As explained in the next chapter, this study directly examined quality and access for all of the dimensions discussed in this section except for appropriateness of clinical care, which is measured indirectly.