

The Lack of Correspondence Between Work-Related Disability and Receipt of Workers' Compensation Benefits

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Background Previous studies suggest that many persons with disabilities caused by work do not receive workers' compensation benefits.

Methods Data from surveys of persons with disabilities were used to estimate the proportion of disability due to work-related injuries and diseases. Studies examining the proportion of workers with work-related disability who received workers' compensation benefits were reviewed. Legal and other factors explaining the lack of receipt of workers' compensation benefits were examined.

Results Many workers with disabilities caused by work do not receive workers' compensation benefits. The obstacles to compensation include increasingly restrictive rules for compensability in many state workers' compensation programs.

Conclusions A substantial proportion of persons with work-related disabilities do not receive workers' compensation benefits. The solutions to this problem, such as providing healthcare to workers regardless of the source of injuries or diseases, are complicated and controversial, and will be difficult to implement. *Am. J. Ind. Med.* 55:487–505, 2012. © 2012 Wiley Periodicals, Inc.

KEY WORDS: workers' compensation; disability; permanent impairments; activities of daily living (ADLs); work disability; work-related; proof of causation; occupational diseases; exclusive remedy

INTRODUCTION

Many people are disabled by work-related injuries or diseases. A smaller number receive workers' compensation benefits. In this article, we provide (1) some estimates of the overlap between persons with work-related

disabilities and persons who receive workers' compensation benefits, and (2) some explanations for the lack of correspondence between the two groups. This article provides an introduction to these issues primarily by reviewing existing data and literature, including our own research.

A basic tenet of workers' compensation programs since their inception is that workers are supposed to receive quick and sure, though limited, payments for work-induced injuries—irrespective of fault by the employer or the worker. In return for expanded financial responsibility for workplace injuries under a no-fault system, employers received immunity from tort litigation, and workers' compensation benefits specified by statute became the exclusive remedy for injured workers. But now, for many workers, the workers' compensation system is dizzying and frustrating in its complexity and apparent irrationality. While the rules may be understandable to repeat players—particularly insurers and third party administrators of claims—they are obscure to many workers who are caught

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up in the delays and denials. Some say it is no accident that Franz Kafka worked in a workers' compensation bureau: the term Kafkaesque is fitting for the experience of many injured workers.

From the beginning, the breadth of the coverage was limited: there have always been exclusions of categories of workers and employers as well as limited coverage of occupational diseases and difficulty in assessing injuries that present complex medical and legal issues. Over the last century, some coverage has expanded. For example, workers' compensation programs added partial coverage of occupational diseases, some states adopted provisions providing for rehabilitation, and many states increased benefits and coverage in response to *The Report of the National Commission on State Workmen's Compensation Laws* [National Commission, 1972]. Between 1972 and 1976, the number of states that required employers to provide workers' compensation to injured workers grew from 32 to 49, leaving Texas as the only state without compulsory coverage [Robinson et al., 1987]. In contrast, the general trend since the early 1990s has been to restrict coverage. We have written about these developments in the past [Spieler and Burton, 1998; Burton and Spieler, 2001], and we focus our attention on these recent developments in this article.

Injured workers have a broad range of experiences with the workers' compensation systems. Despite the fact that these systems are complex and difficult to navigate, workers with relatively simple traumatic injuries often qualify for benefits without problem. But at the other end of the spectrum are cases that result in claim denials, lengthy litigation, endless frustration, and failure to return successfully to work. These situations include musculoskeletal injuries in which the worker lacks "objective medical evidence"; persistent debilitating pain that cannot easily be medically documented; cancers and diseases that result from multiple causation or cannot be distinguished from diseases outside the workplace; and stress-related disorders. There are also hard fought arguments about recovery periods, appropriate return to work, lingering impairments, partial disability, and "psychological overlay."

This article attempts to provide an overview of the prevalence of work-related disability, the likelihood that injured workers will receive workers' compensation benefits, and the barriers to compensation. In Part I, we provide data on the extent of work-related disability and impairment and the extent to which workers' compensation programs provide benefits for these conditions. As we discuss, definitional and methodological issues create challenges to the quantification of these issues, but it is clear that many workers suffer from work-related disabilities and that many of these workers do not receive workers' compensation benefits.

In Part II, we focus on the ways in which disabled workers may find they are included or excluded from the system: first, through specific exclusions of categories of workers or employers; second, through failure of workers to file claims; and third, through a range of more procedural and evidentiary rules that create barriers to receiving compensation.

In Part III, we raise, very briefly, some of the policy questions regarding the mismatch between persons with work-related disabilities and persons who receive workers' compensation benefits.

PART I. PERSONS WITH DISABILITIES AND WORKERS' COMPENSATION RECIPIENTS

A Conceptual Framework and Definitions

The lack of correspondence between persons with work-related disabilities and persons who receive workers' compensation benefits is due to several factors, including explicit exclusions of workers from the system and failure of workers to file for compensation benefits. These issues are addressed in Part II. Quantifying this lack of correspondence requires an understanding of the complex definitional and conceptual issues that underlie discussions of disability. These issues contribute to the challenge of measuring the magnitude of the problem, as the data sources use different definitions. Our analysis relies on the conceptual framework in Figure 1, which is based in part on the concepts needed to analyze workers' compensation programs and in part on the data we present below from the National Health Interview Survey (NHIS) [Adams et al., 2010].

An *injury* is damage to the body resulting from an acute traumatic event, while a *disease* is damage to the body from a cause other than an injury. This distinction is important for workers' compensation because most states

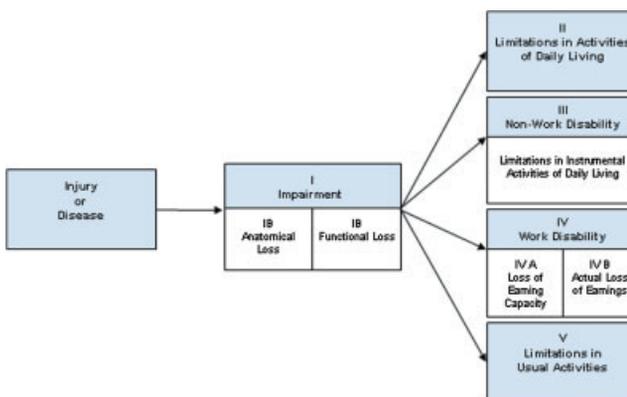


FIGURE 1. The permanent consequences of an injury or disease. [Color figure can be seen in the online version of this article, available at <http://wileyonlinelibrary.com/journal/ajim>]

have different definitions of “work-related” for injuries and diseases.

An injury or disease can have *temporary consequences*, which are completely ameliorated when the healing period ends at what is usually termed the date of “maximum medical improvement” (MMI), or *permanent consequences*, which persist after the date of MMI. This distinction is important for workers' compensation because different types of cash benefits are provided for the temporary consequences and for the permanent consequences. For workers with temporary disability from an injury or illness, workers' compensation programs provide temporary total disability benefits and, in most jurisdictions, temporary partial disability benefits. These benefits are terminated when the worker reaches MMI or by a specific time limit for receipt of these benefits that is set out in the applicable law. For those workers who also have permanent consequences of their injuries or diseases that persist after the date of MMI, workers' compensation programs provide permanent partial disability (PPD) benefits and permanent total disability (PTD) benefits for some of the consequences. The permanent consequences are categorized in Figure 1.

A *permanent impairment* is any persistent anatomic or functional abnormality or loss resulting from the injury or disease. The impairment can be physical or mental. The impairment may involve an *anatomical loss*, such as an amputated leg, or may involve a *functional loss*, such as the shoulder motion deficits resulting from enervated muscles. As shown in Figure 1, the permanent impairment can also result in other permanent consequences of the injury or disease.

Activities of Daily Living (ADLs) include performance of basic self-care activities, such as personal hygiene and grooming; dressing; eating; toileting; transferring (getting from a bed to a wheelchair, for example); and ambulation (walking without an assistive device or wheelchair). Limitations in ADLs broadly defined indicate that a person is limited in performing these activities but does not necessarily require help of other persons to perform the activities. In the NHIS, a more stringent definition is used: a person has *limitations in ADL* only if he or she requires the help of other persons with any of these activities due to a physical, mental, or emotional problem [Adams et al., 2010: Appendix II].

Nonwork Disability includes the loss of capacities of life outside the workplace, such as recreation and the performance of household tasks. A subset of nonwork disability is *Limitations in Instrumental Activities of Daily Living* (IADLs). IADLs are activities that allow a person to live independently in a community, such as shopping; housework; managing money; meal preparation and cleanup; and transportation within the community. In the NHIS, a person has limitations in IADLs if he or she requires the

help of other persons with any of these activities due to a physical, mental, or emotional problem.

Work Disability focuses on the ability to perform work. In workers' compensation programs, work disability means a loss of earning capacity or the actual wage loss as a result of a permanent impairment.¹ Workers who are determined to have lost all of their earning capacity after they have reached the date of MMI receive PTD benefits, which in most states are paid for as long as the worker is totally disabled. Workers who are determined to have lost part of their earning capacity after they have reached the date of MMI receive PPD benefits, which in most states are paid for a limited duration. (As discussed below, there are three operational approaches used by various states to determine the extent of a worker's PPD and thus the duration of the PPD benefits: the impairment approach, the loss of earning capacity approach, and the actual wage-loss approach.) The NHIS draws a similar distinction to the workers' compensation differentiation of PTD and PPD for the NHIS measures of work disability: between persons completely unable to work and persons able to work but limited in the kind or amount of work they can do because of their physical, mental, or emotional problems.

Limitations in Usual Activities include ADLs, IADLs, Nonwork Disability, and/or Work Disability because of health reasons. As the NHIS data demonstrate, a person may have one or more of these consequences.

Complications in Using This Conceptual Framework

There are several complications in using the conceptual framework shown in Figure 1 and the definitions we just provided.

- There is no logical reason why a particular consequence (e.g., ADLs) is a prerequisite for another consequence (e.g., work disability). A person may be perfectly capable of performing activities such as dressing or eating (ADLs) but may be limited in work because of the nature of his or her occupation. The NHIS data we present below suggest that impairments resulting in work disability often do not involve limitations in ADLs.
- Whether an impairment results in limitations in ADLs, work disability, or nonwork disability depends on many factors, including the adequacy of medical care received by the individual, the person's individual

¹ Workers may have actual wages losses that are less than, more than, or equal to the extent of loss of earnings capacity determined by the workers' compensation program.

characteristics, the delivery system for workers' compensation or other social benefits, the individual's situation within family and community, and the nature of the individual's work. As a result, not every person who experiences an injury or disease experiences the same level of impairment, nor do similar impairments necessarily result in equivalent levels of ADLs, IADLs, nonwork disability, or work disability.

- One consequence of the differences among impairments, limitations in ADLs or IADLs, work disability, and nonwork disability, as well as the ingenuity of researchers, is that there are multiple definitions of "disability." The legal definitions of disability under the Americans with Disabilities Act (ADA) also differ from those discussed here. In *Sutton v. United Air Lines, Inc.*, 527 U.S. 471 (1999), the U.S. Supreme Court addressed the definitional problems under the ADA, citing a report prepared prior to the enactment of the federal law that noted, "estimates of the number of disabled Americans ranged from an overinclusive 160 million under a 'health conditions approach,' which looked at all conditions that impair the health or normal functional abilities of an individual, to an underinclusive 22.7 million under a 'work disability approach,' which focuses on individuals' reported ability to work." Kruse and Schur [2003] used 14 different definitions of disability in their study of the labor market, and found that, between 1990 and 1994, the employment rates declined for persons who reported work disabilities, but improved among persons who reported ADL limitations who did not report a work disability.

The Purposes and Operational Approaches for Permanent Disability Benefits

Still another complication of the conceptual framework represented in Figure 1 for an analysis of workers' compensation is the debate described in Burton [2008b] about the purposes of workers' compensation benefits paid to workers with permanent consequences of work-related injuries or diseases. Arthur Larson, the foremost legal scholar in the history of the U.S. workers' compensation program, argued that the sole purpose of these benefits was "loss of earnings, actual or presumed."² In

contrast, the National Commission on State Workmen's Compensation Laws [National Commission, 1972: 68–69] maintained that limited payments should also be available for permanent impairments, even if the worker does not experience loss of wages (or loss of earning capacity) because of an injury or disease.

Three different operational approaches are used by workers' compensation programs for determining the amount and duration of PPD benefits, creating further complexity:

- (1) The *permanent impairment operational approach* (PI), which is the most common approach, relies on a rating of the seriousness of a worker's permanent impairment to determine the amount and/or duration of PPD benefits [Burton, 2005]. For example, if the worker has a permanent impairment enumerated in the state worker's compensation statute, the worker receives a PPD benefit even if the worker does not experience actual loss of wages. In those systems that solely rely on impairment ratings for determining PPD benefits, the PI rating serves as a proxy for the extent of earnings losses that are presumed to result from the permanent effects of the injury or disease. In over 40 jurisdictions, the permanent impairment rating is based on the American Medical Association's *Guides to the Evaluation of Permanent Impairment (AMA Guides)* [Rondinelli, 2008]. Despite widespread use, the *AMA Guides'* impairment values are not well correlated with actual work disability and have been criticized by some scholars as unfair and lacking in validation [Spieler et al., 2000; Burton, 2008a].
- (2) The *loss of earning capacity (LEC) operational approach* is used in some workers' compensation programs to determine the amount and/or duration of PPD benefits. The LEC approach relies on an assessment of the workers' loss of earning capacity, based on factors such as the worker's age, occupation, and PI rating.
- (3) The *actual wage-loss operational approach*, which is used in a few states, determines the amount and duration of PPD benefits based on the worker's actual loss of earnings [Burton, 2005].

The use of the three different operational approaches to permanent disability benefits in workers' compensation means it is difficult to quantify, across systems, which work-related injuries and diseases with permanent consequences should receive workers' compensation benefits. This is compounded by the different definitions used in the different data systems.

² Larson recognized that most workers' compensation programs include scheduled permanent partial disability (PPD) benefits, in which the amount of a worker's PPD benefits are based on the extent of the worker's loss of body part as specified in a statutory schedule. Larson argued that these scheduled benefits were serving as a proxy or predictor of the wage loss that would result from worker's scheduled injury. Larson was describing what we term the permanent impairment operational approach for benefits.

Measures of the Numbers of Persons With Disabilities

One source of information on the consequences of injuries and diseases is the *National Health Interview Survey (NHIS)*, which is conducted annually by the National Center for Health Statistics. The most recent edition provides data for 2009 [Adams et al., 2010]. Figure 2 provides information on the percent of persons in the *NHIS* with limitations in ADLs, IADLs, work activity, or usual activities. The data here are taken from two tables in the *NHIS*, which, alas, do not use the same age categories. For persons 18 and over, 1.9% of the population had limitations in the ADL, 4.0% had limitations in instrumental ADL (nonwork disability), and 12.9% had limitations in usual activities. For persons 18–69, 9.4% had work limitations (work disability).³

Two conclusions can be drawn from an examination of these data. First, and not surprising, is that the adverse consequences of injuries or diseases increase with age. Second, after controlling for age, work disability is more prevalent than reports of limitations in ADLs or IADLs. Indeed, the percentage of persons who report work disability (work limitations) is roughly eight times the number of persons who report limitations in ADLs. This result holds for the two comparable age groups that comprise the bulk of the workforce: persons age 18–44 and persons age 45–64.

The NHIS data indicate that 15.2% of persons aged 45–64 reported a work disability. Reville and Schoeni

[2003/2004], relying on the 1992 *Health and Retirement Study (HRS)*, a study of people aged 51–61, reported that 20.5% of the respondents had a work disability.⁴

Persons With Work-Related Disabilities

An injury or disease may have one or more causes.

- The sole cause of the injury or disease may be work-related, in which case the injury or disease is usually compensable in workers' compensation, although the legal tests for compensability vary among states.
- The sole cause of the injury or disease may be congenital, a degenerative medical condition, or some other nonwork related factor such as an auto accident unrelated to the person's work, in which case the injury or diseases is generally not compensable in workers' compensation.
- The injury or disease may be due to a combination of work-related and nonwork-related factors, which engenders disputes over compensability, as we discuss in Part II.

There are several data sources in addition to workers' compensation claims data that can be used to assess the extent of work-related conditions. OSHA logs, consisting of employers' reports, provide one measure of the prevalence of work-related injuries or diseases, although the validity and completeness of these data have been questioned repeatedly, both by a recent GAO report and in other studies that compare BLS data to other sources [Rosenman et al., 2006; Boden and Ozonoff, 2008; GAO, 2009]. The OSHA logs also provide no indication of the extent of resulting impairment or disability. Some population-based surveys, such as NHIS, ask individuals whether their injuries or diseases (or impairments, limitations in ADL, or disabilities) were caused by their jobs. Epidemiological studies identify excess risks for certain injuries or diseases associated with employment. Some state-based reporting systems require reporting by physicians of work-related health conditions. Unfortunately, the data generated from these various sources are often not consistent, making it difficult to quantify with certainty the extent to which workers are disabled as a result of their work.

The *NHIS* provides some information about whether work *caused* the impairments and their consequences. The percentage of medically consulted injury and poisoning episodes that occurred while the persons were working at

³ The NHIS indicates that 9.4% of the population age 18–69 had work limitations (work disability) in 2009 (calculated from data in Adams et al. [2010]; Table 6). The Bureau of Labor Statistics [2009] reported that 11.4% of the civilian non-institutional populations 16 years and older had a disability as of January 2009, which suggests that the NHIS and BLS data are both measuring work disability. However, the similarity of the results is misleading. According to the BLS, a person is classified as disabled if they answer yes to one or more of six questions from the Current Population Survey (CPS). The correspondence of these six questions to the concepts shown in Figure 1 [as shown in brackets after each question] indicates that the BLS data include no direct measure of work disability. This month we want to learn about people who have physical, mental, or emotional conditions that cause serious difficulty with their daily activities. Please answer for household members who are 16 years or over.

[CPS Question 1] Is anyone deaf or does anyone have serious difficulty hearing? [Impairment]

[CPS Question 2] Is anyone blind or does anyone have serious difficulty seeing even when wearing glasses? [Impairment]

[CPS Question 3] ... does anyone have difficulty concentrating, remembering or making decisions? [Limitations in IADLs/Nonwork Disability]

[CPS Question 4] Does anyone have serious difficulty walking or climbing stairs? [Limitations in ADLs]

[CPS Question 5] Does anyone have difficulty dressing or bathing? [Limitations in ADLs]

[CPS Question 6] ... does anyone have difficulty doing errands alone such as visiting a doctor's office or shopping? [Limitations in IADLs/Nonwork Disability]

⁴ Information on workplace hazards was collected only in the 1992 wave of the HRS. Reville and Schoeni [2003/2004: 32] report the question used in the HRS: "Do you have any impairment or health problem that limits the kind of amount of paid work that you can do?" The authors also used the 1992 panel of the Survey of Income and Program Participation (SIPP) to confirm the estimates of workplace causation measured in the HRS.

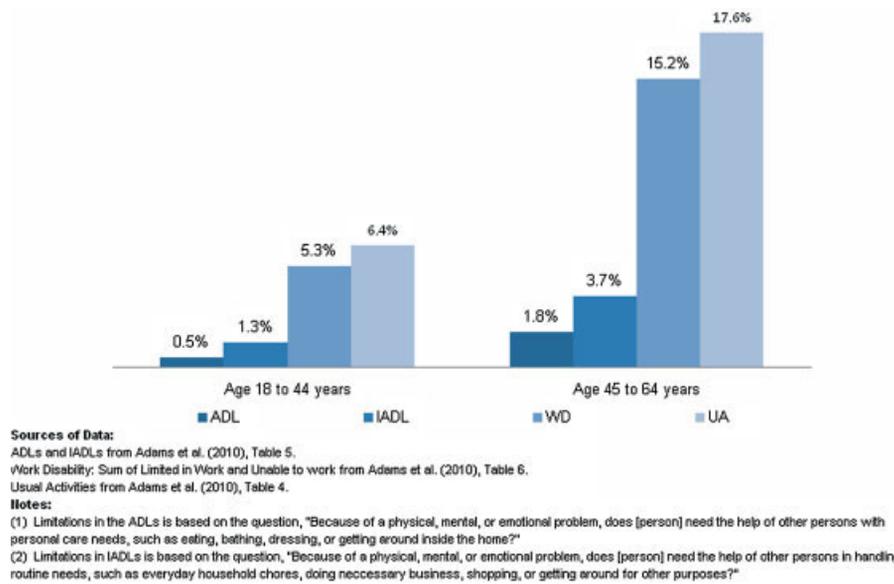


FIGURE 2. Relationships among limitations in the activities of daily living (ADLs), nonwork disability (IADLs), work disability (WD), and usual activities (UA), 2009. [Color figure can be seen in the online version of this article, available at <http://wileyonlinelibrary.com/journal/ajim>]

a paid job are shown in Table I. The rates vary by age. Among the two age categories most likely to be working, injuries or poisoning episodes that occurred at work accounted for 17% of all episodes for persons aged 18–44 and for 13% of all episodes for persons aged 45–64. Thus, about 15% of all injuries involving medical consultation or poisoning episodes for workers in the primary labor force appear to be work-related.

Reville and Schoeni [2003/2004] reported that of the 20.5% of the respondents who reported work disabilities, 36.3% attributed the cause to the workplace. For those respondents who said the work disability was work-related, four mutually exclusive categories of the type of

contribution were used: 17% said the disability was caused by an accident or injury at work; 14.7% said the disability was caused by the nature of work; 0.8% said they had nonpermanent impairments from workplace hazards; and 3.8% said they had permanent impairments from workplace hazards.

The NHIS and HRS data are roughly comparable in terms of the extent of work disability and suggest that about 15–20% of persons who are from 45 to 64 years old have work disabilities (limitations in their ability to work). There is a disagreement about the source of the work disability, however. The NHIS data suggest that about 15% of episodes of injuries are caused by work, while the HRS data used by Reveille and Schoeni suggest that up to 36% of persons attribute their disability to workplace factors.

TABLE I. Age-Adjusted Annualized Rates of Medically Consulted Injury and Poisoning Episodes 2009 (Rates per 1,000 Population)

Age	Episodes while working at paid job		Percentage of all episodes while working at paid job
	All episodes	(2)	
All ages (age adjusted)	122.40	12.25	10.01
Under 12	92.69		
12–17 years	180.32		
18–44 years	115.04	20.03	17.41
45–64 years	121.45	16.31	13.43
65–74 years	99.31		
75 and over	201.15		

Sources of Data—Column (1): Adams et al. [2010]: Table 8; Column (2): Adams et al. [2010]: Table 12; Column (3): calculated by Burton.

Persons Receiving Workers' Compensation Benefits

The proportion of the working-age population potentially eligible for workers' compensation benefits is a product of (1) the proportion of the population whose injuries or diseases are *caused* by the workplace, and (2) the proportion of the population who experience the *consequences* of injuries or diseases for which workers' compensation programs provide benefits. Unfortunately, neither of these proportions is clear.

- Of the *causes* discussed in the previous subsection, workers' compensation programs should, at a minimum, cover all injuries or diseases for which the sole cause is work-related. In addition, workers'

compensation programs also cover some injuries or diseases for which a work-related cause is intertwined with other causes. The complexity of this issue is discussed in the later sections of this article.

- Of the *consequences* shown in Figure 1, work disability is a consequence of an injury or disease that “obviously” should be compensated by workers’ compensation programs. However, this obvious statement must be qualified. In those jurisdictions that rely on the actual wage loss operational approach, workers who are considered by the workers’ compensation program to have experienced a loss of earning capacity but who do not have actual earnings losses will not qualify for benefits. Conversely, in those states that use the permanent impairment operational approach or the loss of earnings capacity operational approach, workers without any actual earnings losses but who suffer a permanent impairment and/or a loss of earning capacity as determined by the workers’ compensation program will qualify for benefits.

The data presented by Reville and Schoeni [2003/2004] can be used to calculate the proportion of people aged 51–61 who should qualify for workers’ compensation benefits: 20.5% of the respondents reported work disabilities as a result of their injuries or diseases⁵ and 36.3% of the respondents with work disabilities indicated the cause was work-related.⁶ The product of consequences

⁵ Reville and Schoeni [2003/2004: 32] indicated the respondents were asked “Do you have any impairment or health problem that limits the kind or amount of paid work that you can do?” This definition of work disability roughly corresponds to the sum of the two components of work disability used in the NHIS data included in Figure 2 [Adams et al., 2010: 79]. “*Unable to work*—Describes adults who were not able to work at a job or business due to a physical, mental, or emotional problem? *Limited in work*—Describes adults who were able to work but were limited in the kind or amount of work they could do due to a physical, mental, or emotional problem.”

⁶ Reville and Schoeni [2003/2004: Table 2] report five definitions of the work place attributions of disability used in the HRS data, ranging from Definition 1: Caused by accident or injury at work (17.0% of the disabled persons); Definition 2: Caused by nature of work, but not Definition 1 (14.7% of the population); Definition 3: Nonpermanent impairment from workplace hazards that occurred after having started working regularly, but not Definition 1 or 2 (0.8% of the disabled population); Definition 4: Permanent impairment from workplace hazards and occurred after having started working regularly, but not included in Definitions 1, 2, or 3 (3.8% of the disabled population); to Definition 5: Any of the first four definitions (36.3% of the disabled population). We relied on Definition 5 for our analysis. The definition of episodes while working at paid job used in the NHIS data included in Table I [Adams et al., 2010: 39] is “What activity was [person] involved in at the time of the injury/poisoning?” The HRS data for disabled persons aged 51–61 who attributed their disability to an accident or injury at the workplace using Definition 1 (17.0% of the disabled population) is similar to the NHIS data for disabled persons aged 45–64 who experienced their episodes while working at paid job (13.43%). We consider both of these definitions to be unduly restrictive as to the proportion of disability caused by the workplace and so we rely on Definition 5 from the HRS data for our analysis.

and causes in these data yield the following result: 7.5% (approximately) of the population aged 51–61 thus had work disabilities as a consequence of work-related injuries or diseases. Of these persons (who are 7.5% of the population) with the requisite consequences and causes, 100% should have received workers’ compensation benefits, but in fact only 12.3% of the persons with the requisite consequences and causes had ever received workers’ compensation benefits.

The Reville and Schoeni results have limitations previously discussed, including the use of 1992 data. However, additional studies consistently document that substantial proportions of workers with workplace injuries and diseases do not receive workers’ compensation benefits. These studies have looked at various data sources and across types of injuries and illnesses.

Studies that have looked at compensation for occupational diseases include:

- Leigh and Robbins [2004] compared the number of occupational diseases shown in epidemiological data with the number of workers’ compensation claims involving diseases in 16 states in 1999. They found that at least 90% of all deaths resulting from occupational diseases and at least 80% of all medical costs caused by occupational diseases were missed by workers’ compensation programs.
- In a study of individuals with confirmed silicosis in the New Jersey occupational disease reporting system in the years 1979 through 1992, Stanbury et al. [1995] found that only 31% of patients contacted stated that a claim for workers’ compensation benefits had been filed.
- Similarly, Rosenman et al. [1997] reviewed cases of silicosis reported to the state health department in Michigan from 1987 through 1995, primarily from hospitals. Only 39.5% of the study population were identified as having applied for workers’ compensation benefits.
- Biddle et al. [1998] matched workers’ compensation claims in Michigan with known or suspected cases of occupational illness reported to the Michigan Department of Public Health under the mandatory reporting scheme in that state. Overall, between 9.6% and 45.6% of workers with diagnosed occupational illnesses filed for benefits.

Studies that have looked at compensation for musculoskeletal disorders include:

- Rosenman et al. [2000] interviewed individuals whose work-related musculoskeletal diseases had been diagnosed by healthcare professionals and reported as required by the state of Michigan’s occupational disease

reporting law. (They noted that relatively few reports of back injuries were identified, because Michigan law classifies back disorders as injuries rather than diseases, and therefore these are generally not reported under the OD reporting law.) The authors found that only 25% of the unionized Michigan autoworkers who had been diagnosed with work-related musculoskeletal disorders filed for workers' compensation benefits.

- Morse et al. [1998] conducted a telephone survey of randomly selected individuals in Connecticut. Of 3,200 people screened, 374 reported chronic upper-extremity pain and 292 of these were deemed likely to be work-related. Of this group, only 31 (10.6%) had filed for workers' compensation benefits.
- Katz et al. [1998] found that of 315 patients in Maine who had carpal tunnel syndrome, 45% were receiving workers' compensation.
- Biddle and Roberts [2003] examined administrative data on workers compensation claims in Michigan together with self-report data and data from the state's mandatory physician reporting system in which workers were identified by their physicians as having work-related musculoskeletal disorders. Of these, 12.9% had wage-loss claims in the workers' compensation data that matched the date and body part of the physician-filed occupational disease report, while 30% of the full sample had filed for wage-loss benefits some time during the time period (1993–1998).
- Morse et al. [2005] used capture–recapture analysis regarding work-related musculoskeletal disorders in Connecticut and estimated that only 5.5–7.9% of these cases appear to have been reported to the workers' compensation system.
- Biddle et al. [1998] determined that the percentage of workers who had filed for benefits lay between 9.6% and 45.6% for all conditions combined, and 11.6% and 62.5% for repetitive trauma.

Studies that have looked at injuries include:

- Lakdawalla et al. [2007] found that about half of workers in the National Longitudinal Survey of Youth who reported suffering a work-related injury in the previous year did not receive workers' compensation benefits.
- Bonauto et al. [2010] reported on the proportion of workers in ten states who reported work-related injuries in 2007 for which they received medical benefits from workers' compensation. The lowest proportion (47%) was in Texas, which is the only state where workers' compensation coverage is elective for employers. Among the other states, the proportion of injured workers who reported they received workers' compensation medical benefits ranged from 50% in

New York to 77% in Kentucky; the median was 61%, found in both California and Washington.

Studies that looked at all types of injuries and illnesses:

- Fan et al. [2006] used data from respondents in the Washington State Behavioral Risk Factor Surveillance System and determined that the self-reported rate of work-related injury or illness was 13%; of these, 52% filed a workers' compensation claim. Claim filing behavior varied considerably across industry and occupational groups: 18–69% across industry groups and 31–61% across occupational groups. By industry, agriculture/forestry/fishing and construction ranked higher in reporting of work-related injury or illness and lower in claims filing. By occupation, farming/forestry/fishing ranked highest in reporting work-related injury or illness and second lowest in claims filing.
- Maier and Reinke [2005] analyzed the Oregon Population Surveys of 2000 and 2002. In the 2002 survey, 7% of Oregonians 18 and older who were working during the summer of 2002 said that they had a 2001 occupational injury or illness. Of these, almost 45.8% did not file for workers' compensation benefits, up from 38.8% in the equivalent 2000 study.
- Rosenman et al. [2006] employed a methodology called capture–recapture, using the number of workers who received workers' compensation benefits and the number of workers identified in the Survey of Occupational Injuries and Illnesses (SOII) conducted by the Bureau of Labor Statistics (BLS) to estimate the universe of injured workers. The authors estimated that about two-thirds of workers suffering workplace injuries and illnesses resulting in more than 7 days of lost work in Michigan between 1999 and 2001 received workers' compensation benefits, and that only about one-third of both work-related injuries and diseases were included in the BLS data. There was thus underreporting in both systems.
- Boden and Ozonoff [2008: Table 4] extended the capture–recapture method to six jurisdictions. Using relatively conservative assumptions, in which they assumed source independence (decisions to report injuries and diseases to workers' compensation and to BLS were made completely independently) they estimated that, depending on the state, workers' compensation only compensated from 65% to 93% of all lost-time injuries and diseases, and that the BLS data base only included from 51% to 76% of these incidents, again demonstrating underreporting in both systems. These capture–recapture studies were particularly significant because they were the first studies in which researchers matched individual workers and company name from the BLS data with confidential workers' compensation

data, thus permitting a more precise evaluation of the data in both systems.

Even this is not an exhaustive list of published research that addresses the question: do workers with qualifying injuries and illnesses file for workers' compensation benefits? Each of these studies reaches the same conclusion: that a very substantial proportion of workers suffering workplace injuries and diseases do not receive workers' compensation in the U.S. The estimates of the proportion of workers who receive these benefits do, however, vary in these studies. This variance is likely attributable to several factors. First, the sources of the data for the underlying prevalence of qualifying conditions vary, ranging from OSHA/ BLS administrative data to state mandated reports to direct questionnaires. Second, these studies differ in the work-related conditions that are included in the analysis: some focus on musculoskeletal conditions, others on all potentially work-related conditions, some specifically on diseases. Third, the studies are conducted in different workers' compensation jurisdictions, some of which are more liberal than others. Fourth, the study populations vary, ranging from workers in large unionized companies to unorganized small enterprises. But irrespective of the methodology or data source, these studies consistently demonstrate that workers' compensation claims actually filed are substantially lower than the number of legitimate claims that would have been expected based on other data sources. They also indicate that other reporting systems, including OSHA logs, significantly underreport the incidence of workplace injuries as well.

The number of claims for workers' compensation has been declining. The decline in the frequency of temporary total disability claims mirrors the drop in reported frequency of injuries in the BLS data [Sengupta et al., 2011: 39]. The capture-recapture studies cited above, as well as the recent GAO study that focused on underreporting of OSHA data [GAO, 2009], suggest, however, that there may be substantial underreporting in all of these systems.

The decline in cash benefits as a percentage of payroll is also dramatic. Over the last two decades, workers' compensation benefits (cash benefits paid to workers plus the amounts paid to healthcare providers) per \$100 of payroll have declined from a peak of \$1.65 in 1990 to \$1.03 in 2009 [Sengupta et al., 2011: Fig. 1]. We examine some possible explanations for the decline in claims and cash benefits since 1990 in the next section.

PART II: WHY WORKERS WITH WORK-RELATED DISABILITIES DON'T ALWAYS RECEIVE WORKERS' COMPENSATION BENEFITS

Part I concluded that large numbers of workers with work-related disabilities are not receiving workers'

compensation benefits. In this Part, we begin the exploration of the reasons and the barriers to receipt of benefits.

Exclusions From Workers' Compensation Programs Based on Status of Employer or Worker

Since the inception, workers' compensation laws have always explicitly excluded certain groups of workers from receiving benefits: only "employees" of covered "employers" are covered. Who does this exclude?⁷

- **Nonemployees:** The fact that someone performs work for someone else does not automatically make this person an employee. Obviously, individuals who are self-employed are outside the definition, and they may have neither private health nor disability insurance. The common law definition of an employee (which underlies the definition used by workers' compensation programs) generally requires that the worker be under the control of the employer. Whether there is sufficient control to create an employment relationship depends on a number of factors that have been explored many times by the courts. These include: the extent of control the employer may exercise over the details of the work; whether or not the person employed is engaged in a distinct occupation or business; the kind of occupation, with reference to whether the work is usually done under the direction of the employer or by a specialist without supervision; the skill required in the particular occupation; whether the employer or the worker supplies the tools and the place of work for the person doing the work; the length of time for which the person is employed; whether payment is made based on time or by the job; whether or not the work is a part of the regular business of the employer; whether or not the parties believe they are creating the relationship; whether the principal is or is not in business (Restatement (Second) of Agency §220; Larson 2010: §60.1). "Independent contractors" are therefore excluded; from a legal perspective, they too are self-employed.
- **Casual employees,** particularly those outside the regular business operation, are sometimes excluded, particularly people employed by homeowners to do casual work around the house. The focus is on the sporadic, brief, and unpredictable nature of the work plus whether it is part of an employer's regular business. Interestingly, when this is described in Larson's treatise on workers' compensation law, the focus is quite clearly on the potential unfair financial burden to the

⁷ This section relies in part on Larson [2010].

employer, rather than the potential disastrous financial effects on the employee.

- Minimum number of employees. While most states cover employers irrespective of size, a number of states, including some large states, set a minimum number of employees before the state's workers' compensation laws are triggered. For example, employers with fewer than three employees are exempt in Arkansas, Georgia, Michigan, New Mexico, North Carolina, Virginia, and Wisconsin; with fewer than four in South Carolina, Florida; and with fewer than five in Alabama, Mississippi, Missouri, and Tennessee.
- Workers in "domestic service." Historically, domestic workers have been specifically excluded from coverage, probably for the same reasons that are given for the exclusion of casual household workers. This particular exclusion has been modified in 24 states, but this is often quite limited. For example, the hours worked or amount of pay that triggers coverage varies considerably: at one extreme, in California, these workers are only covered if they work more than 52 hr per week for one employer. In general, part-time domestic employees are not covered.
- Agricultural workers. Eleven states generally exclude agricultural work from covered employment: Alabama, Arkansas, Indiana, Kansas, Kentucky, Mississippi, Nevada, New Mexico, North Dakota, South Carolina, and Tennessee.
- State, county, and municipal employers are often covered by special provisions, and these employers may not be mandated to provide workers' compensation coverage. To the extent that we can determine, however, it would be highly unusual for a public sector entity to choose to "go bare."
- Texas does not have mandatory workers' compensation coverage for employees. In 2009, the Texas workers' compensation program covered 79% of employees [Sengupta et al., 2011: 9].

Several observations regarding these exclusions are worth noting.

First, while exclusions mean that the common law tort system is not supplanted by workers' compensation, exclusion also means that these workers can obtain benefits only through tort litigation (in which there must be proof of actual negligence), from private sources such as employment-based health and disability plans, or from public programs, including SSDI, SSI, Medicaid, and Medicare. Some injured workers experience "dual denial"—they are eligible neither for damages from civil litigation nor benefits from alternative programs. Notably, success in tort litigation would be limited in many situations involving worker injury: proof of negligence is difficult and is required to maintain a common law claim;

relatively minor injuries might not justify the expense of a law suit; legal assistance may be difficult to find or too expensive; and workers may fear retaliation if they file a law suit against an employer, particularly a current employer.

Second, some of the excluded categories—particularly domestic service and agricultural work and work for some very small employers—involve work that is dangerous and low paid and low status. Migrant workers in these categories are particularly subject to abuse.

Third, these excluded categories have not changed significantly in state statutes over time, but the frequency of some of these employment relationships in the workforce has grown. In particular, there is an upward trend for those assigned independent contractor status: from 2001 to 2005, the percent of people classified as independent contractors rose from 6.4% to 7.4% of the total workforce, or a total of 10.3 million workers in 2005 [Bureau of Labor Statistics, 2005]. Employers avoid all employment taxes and any benefits they pay to full-time employees by avoiding the employee classification. While the majority of independent contractors in surveys indicate a preference for this arrangement, concerns regarding misclassification of workers as independent contractors have also been growing. These concerns center on low wage workers, often in dangerous settings, who are not properly classified and are denied the range of benefits that come with employee status.

Fourth, completely omitted from this accounting are those people who work outside the reported sector. The underground economy is likely to be growing during the current recession, as people accept payment under-the-table to avoid creditors or maintain other social benefits. Workers within this economy do not receive any of the benefits associated with employment, including the guarantee of payment in the event of injury.

Many Workers Who Might Be Eligible for Benefits Do Not File Claims

As noted above, studies have consistently shown that a substantial number of workplace injuries and illnesses are not compensated. Many of these are not compensated because workers simply do not file claims: they do not even initiate the process. There are, of course, also barriers to the payment of claims once they are filed. These are discussed in the next section.

Reasons that injured workers fail to file for benefits including the following:

- Ignorance of workers' compensation and eligibility. This is likely to be true most often in small, private sector, or nonunionized workplaces [Rosenman et al., 2000; Fan et al., 2006].

- Ignorance of the work-relatedness of the condition. Some workers know they are suffering from an impairment but do not know the health condition was caused by work [Pransky et al., 1999; Rosenman et al., 2000].
- Reimbursement for medical care or short-term disability benefits is available from an alternative system [Biddle et al., 1998; Morse et al., 1998; Rosenman et al., 2000; Biddle and Roberts, 2003; Fan et al., 2006]. This correlates with the fact that workers in smaller firms are more likely to file claims [Biddle et al., 1998], as large firms are more likely to provide a full range of private insurance coverage.
- Belief that the injury is lacking in sufficient severity [Weddle, 1996; Morse et al., 1998; Rosenman et al., 2000; Biddle and Roberts, 2003]. This belief need not, and often does not, fully correlate with whether the injury is severe enough to *qualify* for benefits. Nevertheless, the most consistent factor for a decision to file claims is the severity of the injury, including whether the worker is off work for more than 7 days or work restrictions are imposed [Rosenman et al., 2000; Biddle and Roberts, 2003].
- Alternatively, workers may not want to report the condition as work-related. Concerns regarding job loss or other forms of retaliation by employers permeate the process of claims filing. Studies that have inquired about this issue have found it to be a factor in decisions not to file claims [Weddle, 1996; Pransky et al., 1999; Biddle and Roberts, 2003; Fan et al., 2006]. Workers also do not want to be perceived as complainers or as careless [Pransky et al., 1999]. In a GAO study of OSHA reporting, occupational health providers and other stakeholders repeatedly pointed to workers' fear of retaliation as a reason for underreporting in general: 67% of occupational health providers in the survey "reported observing worker fear of disciplinary action for reporting an injury or illness" [GAO, 2009: 17]. Fear of retaliation rises for more vulnerable workers, of course, including immigrants, and during times of high unemployment.
- Consistent with this is the fact that unionized workers are more likely to file claims and, conversely, unorganized workers are less likely to file [Pransky et al., 1999; Morse et al., 2003, 2005]. Unionized workers have increased protections from retaliation under collective bargaining agreement provisions governing due process and grounds for discipline and dismissal.
- Decisions based on negative experiences of co-workers or others. As others they know face long waits, repeat medical examinations by nontreating physicians, embarrassing questions from lawyers and insurance company representatives, and even video surveillance, workers may choose to avoid the entire system [Strunin and Boden, 2004]. This may be easiest for those with alternative sources of health and short or long-term disability benefits, but it is unlikely to be limited to this group.
- Fear of the stigma associated with being a workers' compensation beneficiary. The focus on "fraud" and the tales of cheating workers may have had a pervasive effect, increasing levels of stigmatization and, as a result, probably decreasing the likelihood that an injured worker will file for benefits. Stigma has been widely studied in the context of other transfer payment programs, particularly welfare programs [Moffitt, 1983; Manchester and Mumford, 2009]. Although less well studied in the workers' compensation arena, it is widely discussed by injured workers, labor organizations, and others.
- Pressure from co-workers. Safety incentive programs in workplaces—sometimes referred to as safety bingo by worker advocates—create incentives not to report. Often, nonreporting will lead to rewards for a work group. Thus, if one worker reports his or her injury, the entire cohort may pay the price. Again, the 2009 GAO Report found this to be a troubling factor contributing to underreporting to OSHA.
- Decisions to file are also influenced by the healthcare provider who sees the worker after an injury. Those workers who see company physicians are less likely to file claims [Rosenman et al., 2000]. It is not clear whether this is the result of pressure from the physician, or failure to inform the worker of the work-relatedness of the condition, or another factor.
- The willingness of workers to file claims varies by industry and occupation [Morse et al., 2005]. This is likely to reflect the different cultures, rates of unionization, likelihood of retaliation and other factors. It does not, however, correlate with whether the work is physically demanding: As noted by Fan et al. [2006], agriculture/forestry/fishing and construction ranked higher in incidence of work-related injury or illness and lower in claim filing; the farming/forestry/fishing occupations ranked highest in incidence and second lowest in claims filing.
- Corporate culture generally may have significant effects on whether a worker will file a claim for benefits. Biddle and Roberts noted that managerial style, corporate culture, and formal or informal workplace policies and practices contribute to the filing decision [Biddle and Roberts, 2003: 776]. Azaroff et al. [2002] identified a series of filters that may reduce likelihood of filing. The reporting of occupational injuries and illnesses—and the related though not identical issues of claims filing by workers—involve a series of complex events that affect the likelihood a report or a claim will be made. All of these decisional points are influenced

by factors that relate to the individuals, the work environment, and the larger economic, legal and social context. That is, many of the decisional points may not rest entirely with the individual injured worker. For example, in a study focusing on underreporting to OSHA, the Government Accounting Office recently surveyed occupational health practitioners and other stakeholders in order to review the validity of OSHA reports of occupational injuries. The findings shed light on the pressures that might also discourage the filing of workers' compensation claims. The health practitioners reported significant pressure to treat workers in a manner that would avoid OSHA reporting that might also affect the likelihood of reporting a claim: "We found that more than one-third of health practitioners were asked by company officials or workers to provide treatment that resulted in an injury or illness not being recorded . . . Fifty-three percent of the health practitioners reported that they experienced pressure from company officials to downplay injuries or illnesses, and 47% reported that they experienced this pressure from workers. Further, 44% of health practitioners stated that this pressure had at least a minor impact on whether injuries and illnesses were accurately reported, and 15% reported it had a major impact" [GAO, 2009: 19].

Barriers to the Award of Benefits in Claims That Are Filed

Even if a worker who works in covered employment files a claim for worker's compensation benefits, there are still many barriers to approval and actual receipt of benefits. The focus in this section is on the ability of a worker to clear the *initial* hurdle of entitlement to benefits: to show that s/he has a compensable claim. One might think of this as the key to open the door to the workers' compensation "room." Once in the room, there remain a myriad of questions regarding the nature of medical care and benefits that the worker will receive. The answers to these other questions vary considerably from one workers' compensation jurisdiction to another and are beyond the scope of this article.

During the period 1989–1997, over half of the state legislatures passed major amendments to their workers' compensation laws, responding to agitation by employers and insurers. This trend has continued, as states, including New York, West Virginia, California, and Illinois, enacted major "reforms" in the recent decade. These legislative changes tightened many rules and limited compensation in key ways. The primary legislative focus has consistently been on costs to insurers and employers, rather than on adequacy of benefits to workers, although some of the legislative packages did include provisions that would be

protective to workers. The growing stigmatization of injured workers in the past two decades and the weakness of organized labor contributed to a political environment that allowed legislators to design legislation that was responsive to concerns about potential large costs by limiting benefits for disabled workers.

Although it is true that a large number of simple claims are paid by insurance carriers or employers without significant delays, it is also true that some insurance carriers, employers, and third party administrators for self-insured employers fight claims without a good reason, resulting in early denials and delays. The very delay in obtaining an answer from an insurance carrier or administrative agency can lead to anger or depression on the part of the worker—or failure to pursue the claim. Practices like this also force workers' claims into litigation; this can result in abandonment of the claim by the worker or in pressure on the worker to accept a settlement that is not a fair representation of the value of the injury. While we hope that inappropriate controversion of claims is not a common practice, we know that it does occur, and that the practice varies among employers and carriers. While carriers may have some liability for bad faith in the administration of claims, this liability is often limited. Moreover, over the last 20 years, large deductible policies in workers' compensation have created greater incentives for more employers themselves to discourage claims.

Beyond simple obstruction to claims, there are three common barriers to compensability: complexity in the proof of causation; difficulty in proving impairment and disability; and procedural roadblocks that may relate to these two substantive areas but also may exist simply as part of the program's approach to adjudication of claims. We have previously described many of these barriers [Spieler and Burton, 1998; Burton and Spieler, 2001].

Proof of causation

Workers' compensation is built around the concept that the disability must be related to work, in the sense that the claimant's work *caused* the condition. The typical workers' compensation statute includes four tests for compensable injuries, all of which must be met for the worker's injury to be considered work-related and thus compensable: (i) an injury (ii) resulting from an accident that (iii) arose out of employment and (iv) in the course of employment [Willborn et al., 2007: 894–937]. There are, however, variations among jurisdictions in the formulation of the work-related tests. For example, the Federal Employees' Compensation Act uses the phrase "sustained while in the performance of duty." Occupational diseases are treated separately in most statutes. These tests are not always simple to apply—and the more complex the required proof, the more likely that the process will involve

lawyers, battling experts, confusing administrative rulings, and resistance on the part of the insurer or employer.

For injuries that are specifically associated with employment, the issue of causation should be clear. But there is a spectrum on the causation scale, from medical conditions that are obviously caused by the workplace, such as an injury from an explosion or a fall; to medical conditions that are probably linked to work exposures, such as mesothelioma after exposure to asbestos or leukemia after exposure to benzene [Barth and Hunt, 1980: 52]; to medical conditions that may have been caused by exposure to a substance or condition in the workplace but may have been caused by another factor, such as lung cancers associated with smoking and asbestos; to medical conditions for which the cause is unknown, such as many back disorders.

The litigation over causation generally focuses on the following issues:

- *Aggravation of preexisting conditions*: In many instances, workers have preexisting health conditions or predispositions for particular health problems. The historical view in workers' compensation was that employers took employees as they found them. Aggravation of preexisting conditions would therefore have been compensable. The inquiry focused on whether the workplace contributed, or contributed significantly, to the condition. This often led to litigation, as workers' compensation programs drew boundaries around what constituted adequate contribution from work, responding to defense of claims by employers and insurers. But in the 1990s, several states moved more aggressively to limit compensation for conditions with complex causation.

Second injury funds historically provided some coverage for disabilities that resulted from the combined effects of current employment and past disabilities. Initially designed to encourage the employment of war veterans, these funds became the source of benefits for a wide range of conditions. Often, employers, insurers and workers' representatives all gained by "dumping" claims into funds which were not vigorously defended. The costs within these funds rose, while new accounting principles forced states to recognize the potential long-term liabilities in the funds—and no one was interested in providing the necessary financing. This led to the elimination or significant restrictions on the range of injuries covered by these funds in a number of states—resulting in limitations on the availability of benefits to workers who were forced to prove causation within the usual system.

In addition, state courts and legislatures moved to restrict compensation for injuries involving aggravation of preexisting conditions in a number of ways: excluding

injuries or disabilities if they are the effects of "the natural aging process"; requiring that work be the "major" or "predominant" cause or the "major contributing factor" of any disability; excluding injuries for which current work is merely the triggering factor; or requiring proof of a discrete injury if there is an underlying aging-related factor. Contributing to this in some jurisdictions are stricter rules and shorter time limits for reopening prior claims when progression occurs.

The results are, not surprisingly, denials of claims. This may be particularly troubling for aging workers, a growing proportion of the workforce. But it also affects large numbers of other workers with preexisting conditions who are exposed at work to conditions that injure or disable them.⁸

- *Occupational diseases*: There is no question that most occupational diseases are never compensated. A study of this problem published in 1980 [Barth and Hunt, 1980: 272] concluded that "Many states give lip service to the notion of broad coverage of occupational diseases, but there is little evidence that this exists." While some systems expanded the availability of occupational disease compensation during the 1980s, the problem persists. The roots of the failure to compensate are multi-dimensional: many workers with occupational diseases do not know their condition is work-related; some workers who know that their condition is work-related nevertheless do not file; and many who do file find that there is considerable resistance from employers, insurers, and adjudicatory bodies.

Proving work-relatedness is sometimes difficult, particularly when the disease also commonly occurs outside workplaces. Some occupational illness has been identified through epidemiological evidence, but it is sometimes difficult to conclude that a particular worker's condition was linked to work. When a disease is clearly linked to particular exposures that are not common outside workplaces,

⁸ Two examples involving lung diseases that we have previously cited still rankle: In Illinois, an appellate court ruled that a miner could not collect benefits for his lung disease, despite his 25 years in underground mines during which he was continually exposed to coal dust, because of his smoking history and conflicting medical testimony. *Freeman United Coal Mining Co. v. Industrial Commission*, 286 Ill. App. 3d 1098, 677 N.E.2d 1005 (1997). In Oregon, in a case involving a worker with a predisposition to airway irritation, the court found that an occupationally caused lung disease was not compensable, relying on new statutory language that worker must show that work was the predominant cause of the injury. *Errand v. Cascade Steel Rolling Mills*, 888 P.2d 544 (Ore. 1994). Although these are egregious examples, they are representative of trends across the country, resulting in significant restrictions on compensability of these claims. In the aftermath of the Errand case, there was a flurry of litigation and legislative action which we will not attempt to summarize here. See, for example, *Smothers v. Gresham Transfer*, 23 P.3d 333 (Ore. 2001).

then it is easier to obtain compensation. But when a disease is readily linked to both workplace exposures and nonwork exposures, and the only evidence is that there is increased risk in certain jobs, then it is much more difficult for claimants to prevail. This is particularly true when there are more stringent requirements for medical proof and the higher evidentiary standards, both discussed below.

The resistance to providing compensation for occupational diseases is rooted, also, in the concern about their prevalence and the cost that a system might face if these diseases were fully compensated. Take, for example, silicosis—an occupational disease for which there has been information regarding work-relatedness for centuries. Larson's treatise notes:

The original reason for these restrictions was the fear that the compensation system could not bear the financial impact of full liability for dust diseases simply because they were so widespread in particular industries. As investigators began to look around the granite works, mines, quarries, foundries, monument works, and other establishments where silica dust was prevalent, they were apt to discover, to their alarm, that almost everyone had silicosis in some stage or other. When a state introduced full silicosis coverage, it might discover, as Wisconsin did, that the insurance premium for monument workers, for example, promptly soared higher than the payroll itself, with the result that the entire industry was closed. [Larson 2010: §53-02]

Today, fewer than 40% of workers with silicosis ever file for workers' compensation benefits, even in states in which compensation may in fact be awarded if claims are filed [Stanbury et al., 1995; Rosenman et al., 1997].

In general, there continue to be significant barriers to occupational disease compensation. Claims are often not filed. Further, a subset of occupational diseases involves long latency periods, with the disabling medical condition developing years after the last exposure. Many occupational diseases also mirror diseases that are nonoccupational in nature, moving them into the gray area discussed in the next subsection. As occupational disease coverage expanded, most jurisdictions developed mechanisms within their workers' compensation programs to provide benefits for long latency diseases as well as diseases for which the cause might have been a mixture of work and nonwork causes. There are, however, still jurisdictions in which time limits on filing of claims run from date of exposure, rather than from date of diagnosis, thereby excluding these diseases from any compensation.

- “*Gray area*” cases: Many arguably work-related health conditions fall into “gray” areas, leading often to litigation, delays, battling experts, and confusion for the claimant. They are in a gray area because they involve exposures over time, preexisting dispositions, overlap with conditions that occur outside work, or they are conditions that are difficult to measure and diagnosis relies on self-reports from workers. Often recovery periods for these conditions are either uncertain or the condition may result in long-term disability. Gradual onset health conditions, particularly those in which the health condition is likely caused by both work and nonwork factors, often meet with resistance when workers file for benefits. There is ambiguity as to whether some of these conditions are injuries or diseases, so that workers' compensation agencies struggle with how to manage them under the differing statutory provisions for injuries and disease; sometimes, mere classification as a disease can lead to denials of compensability. Common conditions that often fall into this gray area include repetitive motion injuries, including carpal tunnel, other musculoskeletal injuries, hearing loss, lung diseases such as asthma or chronic obstructive pulmonary disease (COPD), stress disorders unrelated to physical harm, and heart attacks. We discuss back injuries separately in the next subsection. The workers' compensation adjudicatory systems have always had difficulty determining how to address these conditions, leading to extensive litigation—and confusion for the worker.

Starting in the 1990s, in part as a response to rising concerns about the costs of workers' compensation programs, several states enacted legislative changes that were designed to specifically limit the availability of benefits in these gray areas. For example, many states excluded availability of benefits for stress claims, following what was viewed as an explosion of these claims in California. Fifteen states simply made all of these claims noncompensable unless accompanied by physical injury. Colorado limited benefits to 12 weeks with a reduced maximum weekly benefit. Other states excluded stress claims related to personnel actions, or limited them to situations involving extraordinary or unusual circumstances. Sometimes, the burden of proof required for these claims was raised, requiring that employment be the predominant cause of injury or that claims be proved by a preponderance of evidence.

In another example, some states have created barriers to compensation for repetitive motion injuries. In a worst case example, the Virginia supreme court ruled that cumulative trauma disorders were not “as a matter of law” compensable under the workers' compensation act.

Steinrich Group v. Jemmott, 467 S.E.2d 795 (Va. 1996). The state legislature responded by providing nominal, but very narrow, coverage for these conditions. It must be noted, however, that most states do provide coverage for cumulative trauma disorders, though other barriers may make it challenging for workers to obtain benefits.

- *Back injury claims* are very common in workers' compensation systems, and certain types of medical conditions involving the back illustrate the problem of determining causation. From a medical standpoint, three types of back disorders can be identified: fractures and dislocations, which are relatively rare but for which causation is clear because they result from traumatic events; sprains and strains, which may result from less obvious but arguably sudden events, and so causation can usually be determined; and diseases of the back, in which damage results from a slowly developing condition. While back pain and neck pain are very common problems, a specific diagnosis cannot be made in many cases,⁹ and the contribution of the workplace to some of these disorders is difficult or even impossible to ascertain.

One consequence of the difficulties of identifying the causes of back diseases is that many workers with back disorders cannot establish eligibility for workers' compensation. On the other hand, many states have adopted legal rules for determining whether back conditions are work-related that rely on obsolete medical doctrines, such as the notion that external trauma is responsible for discal herniation, and therefore if an unusual exertion preceded the back disorder, the work-related test is satisfied. In these circumstances, workers can qualify for workers' compensation benefits even though their back diseases may not be

⁹ Kelsey [1982: 96–97] indicated that “in a large proportion of cases of low back and neck pain, no definite diagnosis can be made.” This is partly so because the symptoms are not uniquely associated with a particular disease; partly because radiographic evidence of a disorder is often not associated with any symptoms; and partly because a particular patient may have two or more disorders. Has the ability to diagnose low back pain improved in the last 30 years? Hadler [2009: 41] is a skeptic. “Health agencies in eleven countries have published evidence-based guidelines for the management of such patients: all agree that radiographs are not useful. Almost everything one can see on an X-ray is likely to be present in many people the same age who are not hurting, is likely to be present before the current episode of backache, and is likely to persist after the episode.” But surely we must have made great progress because of the introduction of CT and MRI scans in recent decades. Again, Hadler [2009: 44] is the doubter. “MRI scans are brilliant at defining the details of the soft tissues and CT scans of the bony anatomy. Imaging has a high false-positive rate, with the result that billions of dollars are spent annually in this pointless exercise. Furthermore, magnetic resonance imaging cannot be used to predict back pain. Magnetic resonance imaging is not even sensitive to anatomical changes that might correlate with new symptoms.”

due to work-related factors.¹⁰ Once approved from a compensability standpoint, many back injury cases continue to present significant issues regarding extent of disability and appropriate medical treatment.

Proving impairment or disability: the issue of medical evidence

It is the role of physicians in many cases to provide the causal link between work and the health condition, as well as to provide proof that the worker is suffering from a condition that requires medical treatment or absence from work. As states have raised the level of proof required for claims, they have also moved away from accepting lay testimony as adequate proof.

There has always been tension between legal and medical definitions, and there has always been some discomfort, even among doctors who are sympathetic to injured workers, regarding the nature of proof that is needed by injured workers in contested claims. But the problem has become worse in recent years.

These changes are sometimes subtle and difficult to track. For example:

- There has been a move away from relying on a worker's own physician in complex cases, looking instead to experts who are less familiar with the worker's history. This development parallels the shift in many states away from allowing workers free selection of physicians for treatment of their work-related conditions. Some states now require proof of the physician's expertise before a doctor's testimony can be admitted, further delaying the adjudication of a claim. The application of the technical standards for expert testimony (referred to by lawyers as the “Daubert” standard after the U.S. Supreme Court case of *Daubert v. Merrell Dow Pharmaceuticals*, 509 U.S. 579 (1993)) seems to be spreading; this is particularly ironic, since these standards were developed for complex civil litigation, and the workers' compensation systems were originally intended to be easy for workers to navigate.
- Politically appointed medical boards, whose membership is often a reflection of politics and the members' ideology, are now sometimes used to screen cases,

¹⁰ Burton [1985: 100]: “The conclusions from this review of the legal issues involved in determining eligibility for compensation cannot be too comforting for those who support workers' compensation. The current legal tests to distinguish specific and generalized results, and the roles assigned to discrete precipitants and evidence of diseases, seem to have little scientific basis.” More recently, Hadler [2009: 118] has opined on the ability to determine the cause or consequences of back pain. “Furthermore, there is no way to objectively quantify the pain and no pathoanatomical change that can be reliably ascribed to exposure at work or be considered the specific cause of the pain.”

particularly occupational disease or gray area cases, on issues of compensability.

- There has also been a movement to require “objective medical evidence” to establish the existence of a medical condition, resulting in exclusion of claims. This might, for example, include mental health conditions or complaints involving pain, including severe pain. There are also conditions that do have objective tests, but in which the medical literature suggests that the objective tests fail to identify some, sometimes a large number, of people suffering from the condition; that is, the test may be valid for some of the people identified, but it is inadequate to identify everyone with the disorder.
- There also appears to us to be a growing tendency to reject testimony that might be cautious or in which the physician states possibilities rather than offering definitive opinions, or suggests a workplace “could” or “might” have caused the condition.

This entire area is further complicated by the widespread adoption of the American Medical Association *Guides to the Evaluation of Permanent Impairment*, now in its Sixth Edition [Rondinelli, 2008]. The *AMA Guides* provide a measure of impairment, with chapters on each organ system, a mechanism for determining the degree of impairment for each organ system (stated in percentage of loss), and then a conversion from loss in the organ system to a whole person impairment. Many of the chapters base their analyses of the extent of loss on objective medical tests. The impairment ratings themselves have never been validated [Spieler et al., 2000] and are unlikely to be subject to validation. Although the use of the *AMA Guides* appears predominantly in the assessment of permanent impairment—a subject that is outside the scope of this article—we believe that it may also have insidious effects on the way in which many physicians view common occupational injuries, thereby affecting the way in which experts will approach the claims of injured workers.

Procedural hurdles

The process by which claims are considered can be opaque and confusing to claimants. This seems to be a universally reported phenomenon, across states, irrespective of the apparent generosity of benefit levels. At both the initial, relatively informal level (when insurers and employers have considerable control over outcome) and later during adjudication when there is a “neutral” fact finder, there are a wide array of barriers to compensability.

We mentioned above the problem of the application of statutes of limitation to occupational diseases with long latency periods. More recently, and most importantly, the standards for proof of claims have been raised in many

jurisdictions, and these standards can determine the outcome. For example, many jurisdictions have moved away from an approach to evidence that applied a relatively liberal standard, allowing claimants to prevail if the evidence was essentially equal on all sides. Now, quite a few states require a claimant to prove the case by “clear and convincing” evidence (e.g., Alabama) or by a preponderance of the evidence. In the federal system, the U.S. Supreme Court eliminated the Department of Labor’s “true doubt rule,” which had allowed claimants to win claims if the evidence was roughly equal on both sides of a black lung case. Instead, the court applied the standards of the federal Administrative Procedures Act, which requires that cases be proved by a “preponderance of the evidence.” *Director, OWCP v. Greenwich Collieries*, 512 U.S. 267 (1994). In one truly bizarre twist, workers with brain injuries in Virginia have had difficulty obtaining benefits due to a provision in the law that requires that there be a witness or that the claimant be able to recall the incident. In one now notorious case reported by the *Roanoke Times*, Zurich North America reportedly terminated the benefits of a severely brain damaged worker who had fallen at a residential site where he was working alone, installing a satellite TV dish [Casey, 2010].

The significance of this shift cannot be overstated. When combined with requirements for objective medical evidence, these higher standards of proof lead to denial of claims that are arguably in any of the gray areas described above. In occupational disease claims in which the only proof is based upon population-based studies, it is virtually impossible to meet the higher standard. When combined with the raised expectations regarding medical testimony, the ability of claimants to prevail in many cases involving common disorders is dramatically affected.

Studies indicate that restrictions in the availability of benefits, described more fully in Part II, have a negative effect on the availability of compensation for work-related injuries and illnesses. Thomason and Burton [2001] looked at a series of amendments to the Oregon workers’ compensation statute between 1987 and 1995 that constricted eligibility rules. They estimated that by 1996 these changes reduced the number of claims by 12–28% and the benefits for workers (and costs to employers) by 20–25% below what the amounts would have been if the laws had not been enacted. Boden and Ruser [2003] found that compensability restrictions accounted for 7.0–9.4% of the decline in injuries reported to the BLS involving days away from work in 1991–1997 when examining all states. In states passing these reforms, they accounted for 12.2–23.7% of the decline.

Guo and Burton [2010] identified several factors that help explain the decline in cash benefits in many states during the 1990s. They constructed a measure for the benefit allowance stringency (the BAS variable), which

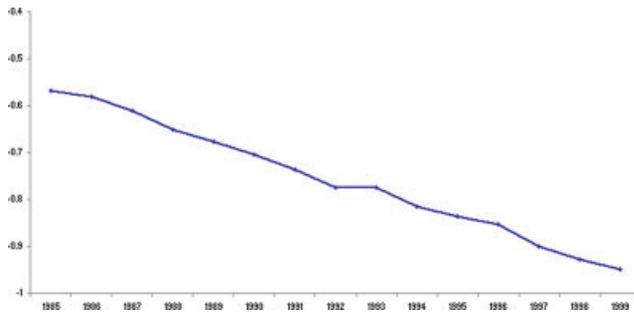


FIGURE 3. Workers' compensation compensability index, 1985–1999. [Color figure can be seen in the online version of this article, available at <http://wileyonlinelibrary.com/journal/ajim>]

looked at the proportion of injuries reported by employers to OSHA that resulted in workers' compensation claims, and found that the proportion declined between 1985 and 1999 as state workers' compensation programs became more stringent because of administrative practices, rules, or decisions by state agencies or courts. They also found that a portion of the decline in cash benefits was due to statutory changes in state compensability rules that involved tightening of eligibility standards, as shown in Figure 3. Together, changes in the BAS variable, in the compensability index, and in the declining share of workers' compensation cases that resulted in PPD benefits explained more of the decline of cash benefits paid by workers' compensation programs during the 1990s than did the decline in the BLS injury rate.

Taken together, these studies and the data in Part I corroborate three important concerns: disability caused by work is common; many workplace injuries and illnesses are not being compensated; and injured workers are encountering growing barriers to obtaining benefits.

PART III: WHAT IS TO BE DONE?

Injured workers are facing complex systems that are not providing benefits for all work-related conditions. The current system is irrational, at best, and unjust at worst.

As we consider alternatives, we want to stress at the outset that we make no comment with regard to the political feasibility of any of the recommendations or suggestions made in this section. Further, we limit our discussion here to the issues raised in this article, knowing full well that there are tremendously important issues in both the financing mechanisms and the adequacy of benefits that lie outside this article's scope. Finally, we want to make clear that we are not endorsing all of the recommendations: some are inconsistent with others, for example.

With these caveats in mind, here are a few initial thoughts.

First, coverage for work-related conditions should not be linked to the nature of the economic relationship

between the worker and the entity for which the work is performed, nor should it be linked to employer size or the industry of work. Thus, systems should be designed that include independent contractors, all size employers, and all industries, including agricultural and domestic work. How such an inclusive approach would be financed and administered presents a challenge.

Second, protection from retaliation and reduction of stigma for workers with work-related injuries and illnesses is critical. Are there ways to address the often legitimate anxiety felt by workers that leads them not to file for benefits? Can anti-retaliation provisions be effectively strengthened? We do not attempt to discuss the various legal and normative approaches that might increase workers' willingness to file claims. It is an issue worth pursuing, however.

Third, we wonder about the continuing appropriateness of the exclusive remedy provisions of most workers' compensation systems. As we have discussed, many occupational injuries and illnesses are not currently compensated. We also know from reported case law that there are examples of egregious employer malfeasance in which the employer is protected by the shield of workers' compensation. Is the balance the right one? In most states, exclusive remedy remains a hard rule. In Ohio, where the workers' compensation shield can be pierced in cases that involve intentional injury (interpreted broadly), there are anecdotal reports that there is more litigation against employers involving serious workplace injuries and there is no report that the system of compensation has been seriously damaged. There has not been any study of whether this development in Ohio has resulted in a higher regard for safety or substantially improved adequacy of compensation for the individual workers. However, some studies suggest that reliance on tort suits may not effectively promote safety [Burton, 2009: 245–249].

Fourth, the issue of causation seems to us to be a key pivot point. Failure to prove that a medical condition is compensable in a workers' compensation program means that healthcare, rehabilitation benefits, as well as cash benefits are withheld, often in situations in which these benefits are not otherwise available. With this in mind, the separation of healthcare for work-related injuries into the workers' compensation system should be eliminated where possible. There is no reason to link access to adequate healthcare to the cause of a medical condition. We recognize of course that the provision of healthcare for work-related injuries and diseases without consideration of the causes of the afflictions is dependent on the successful creation of a universal healthcare system in the U.S. Without such a system, a move away from the special protections of workers' compensation will leave workers who are without health insurance—often low paid more marginal workers—without any way to pay for

necessary medical care for work-related injuries and diseases.

The causation pivot point takes us much further, however. We wonder whether it is appropriate to have a social insurance system that is linked to proof of causation at work, given that the effect of work disability affects workers equally, irrespective of the etiology of the disability. This concern is, of course, heightened by the fact that many occupational injuries and illnesses are never compensated, and this is particularly true for cases that involve complex etiology. There is also a question as to whether experience rating, large deductibles, and self-insurance in workers' compensation systems create an effective incentive for workplace safety—a question on which the authors of this article disagree.

How might we imagine the design of an alternative system? There are many options, and international examples aid us in considering them. Some countries provide a social safety net for all disabled people, irrespective of causality. Sweden has adopted a system that separates back injuries and specifically removes them from the rest of the workers' compensation program, in order to avoid the endless arguments about whether an individual worker's condition meets the causation test.

In considering these design questions, the ultimate issue is the extent to which work-caused injuries and illnesses should be treated differently from other disabilities, what the boundaries around this special treatment should be, and whether the excluded conditions should be addressed through a single integrated social insurance program or through targeted programs that address particular disabilities.

Alternatively, if workers' compensation should cover all conditions, including back injuries and other conditions of complex etiology, how can the system be simplified to be fair, efficient, and get benefits to injured workers? This, of course, raises an almost endless list of subsidiary questions: What is the appropriate role for presumptions regarding causation, particularly for diseases? Should there be a "rule of liberality" that would decide cases in workers' favor if the evidence is reasonably equal? What is the appropriate role for treating physicians? What is the role for evidentiary rules? And should apportionment be used to only compensate the worker for the proportion of the disability that is work-related? We do not endorse this proposal, but California has recently adopted apportionment for permanent disability benefits and so this "solution" to disability resulting from multiple causes needs to be seriously debated.

Approaching these questions with a human rights lens thrusts the injured worker to the center of the debate and deemphasizes the effects on employers or insurers. While we acknowledge that stable funding for social insurance programs is critical and that the affordability of the

programs for employers and taxpayers is an important consideration, the more central question of fairness for injured workers requires a serious reexamination of the current framework for providing workers' compensation in the US.

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