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Ergonomics in the Workplace: Is it Time for An OSHA Standard?

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Summary

Improper ergonomic design of jobs is one of the leading causes of work-related illness, accounting for perhaps a third of employers' costs under state workers' compensation laws. Due to the wide variety of circumstances, however, any comprehensive standard would probably have to be complex and costly, while scientific understanding of the problem is not complete.

On November 14, 2000, the Occupational Safety and Health Administration (OSHA) promulgated an ergonomics standard. It would require employers to set up control programs for job categories where "work-related musculoskeletal disorders" are reported. These programs would include job hazard analysis and control, medical management of reported injuries, employee participation, training and evaluation.

After an earlier draft proposal was released in 1995, riders to the Labor Department appropriations bills were passed preventing OSHA from issuing a standard during most of fiscal years 1995 through 1998. Such a rider was also adopted by both chambers in their consideration of the FY2001 bill (H.R. 4577), but the issue was unresolved in negotiations with the White House when the Congress recessed for the elections. Since the final standard has now been released, that issue became moot and the rider was dropped from the bill. Opponents of the standard are pursuing other avenues, including litigation. (This report will be updated to reflect significant congressional actions.)

A Complex Phenomenon

Ergonomics is the science of designing worksystems taking into account the "human factors," so as to make them efficient as well as healthful. The philosophy is one of "fitting the job to the worker." A particular concern, and the source of increasing numbers of injuries, is the question of body position and motion ("*kinesiology*"). A wide variety of ailments can occur when jobs entail repetitive motion, forceful exertions or awkward postures. Indeed, according to OSHA, improper physical design of jobs is one of the

leading causes of work-related illness. But because of the wide variety of tasks, equipment, stresses and injuries involved, any comprehensive standard would probably have to be complex and costly.

Ergonomics is a difficult issue because, while there is substantial evidence of a problem, it is very complex and only partially understood. Cumulative trauma disorders can be aggravated by non-work activities and be complicated by work and non-work psychological factors such as stress. A host of new products and services have become popular – such as back braces and newly designed keyboards – but there is little in the way of scientific evidence about whether they do any good.[1] The state of scientific knowledge about ergonomics – and especially the role of non-work and psychological factors in producing observed syndromes – has become a key issue in the debate over how OSHA should proceed.

Even if the problem were fully understood, the wide variety of circumstances will bedevil efforts to frame simple, cost-effective rules. What are called "ergonomic" injuries are actually a range of distinct problems, much as "cancer" is not one but a family of diseases. The term may cover stresses as diverse as repetitive motion, awkward postures, contact stress (as from hammering), vibration and forceful muscular exertions.

In the debate over ergonomics, very large monetary estimates have been cited for both the benefits of a national standard and the costs thereof. Many businesses take the problem seriously and have extensive voluntary programs to deal with it.[2] OSHA estimates that ergonomic injuries and illnesses cost employers $20 billion in workers' compensation claims, or one-third of their total workers' compensation costs. Thus, the agency contends, savings on compensation costs could largely, if not fully, offset the employers' costs of the new ergonomics standard, which OSHA estimates to be about $5 billion per year. Industry estimates of the rule's costs range much higher – as high as $90 billion per year, according to the Employment Policy Foundation.[3]

The Bureau of Labor Statistics (BLS) reported 799 thousand lost-workday cases during 1997 due to sprains and strains (some of which might not be considered "ergonomic") and another 29 thousand due to carpal tunnel syndrome (CTS) or tendinitis, which together accounted for 45% of all lost workday injuries. While sprains and strains are similar in severity to other types of injury (a median of 6 days away from work), CTS

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[1] For example, back-support belts for lifting jobs became popular in the 1980s, but no well-controlled study of them was available until 1996. Rundle, Rhonda. Back Corsets Receive Support in UCLA Study. *Wall Street Journal*, October 9, 1996. p. B1,B8. See also Oldenburg, Don. The "Ergonomics" Boom. *Washington Post*, February 25, 1997. p. E5. Murphy, Kate. What's Correct Ergonomically? Good Question. *New York Times*, October 9, 1995. p. D3.

[2] For example, the automotive industry has ongoing programs in cooperation with the United Auto Workers. NUMMI, the California joint venture of General Motors and Toyota, reduced ergonomic injuries by 73% from 1993 to 1998, and the company believes product quality has benefited. Fernberg, Patricia. Ergonomics is Driving Quality. *Occupational Hazards*, May 1999. p. 79-83.

[3] Details of their estimation can be found at the website: [http://www.epfnet.org].

cases have a median loss of 25 workdays.[4] However, there is some question about whether the problem is already coming under control. While the number of reported cases of repeated trauma injuries more than tripled to 332 thousand in the decade ending in 1994, they then backed down to 255 thousand by 1998. Labor representatives attribute the drop to increased OSHA enforcement as well as labor-management programs in key industries. But an industry coalition commented that the figures show that repetitive stress injuries "are not an epidemic."

OSHA Rulemaking

As the number of reported cases increased rapidly in the 1980s, OSHA started paying more attention to ergonomics, relying on its general authority pending development of a formal standard. Notable cases were brought and remedial settlements reached in the meatpacking and automotive industries. In 1992, OSHA issued a notice of proposed rulemaking, in 1994 a draft proposal, and in 1995 a revised draft. The 1994 proposal received a negative reaction from major industry groups, and the National Association of Manufacturers helped form the National Coalition on Ergonomics to oppose its adoption. The 1995 draft was somewhat less extensive, particularly in coverage. Rather than requiring comprehensive action by all employers, the revised approach was to have employers first do an initial self-evaluation to identify whether certain "signal risk factors" were present.

Although OSHA was prohibited by appropriations riders (beginning in 1995) from issuing formal ergonomics proposals, the agency was able to continue development work, and issued its final standard on November 14, 2000. It applies to all employers in all industries (except construction, agriculture, railroads and maritime) and firms of all sizes. It takes effect formally as of January 16, 2001, but most of the employers' responsibilities do not begin until October, 2001.

The final regulation is a program standard, meaning that employers will be required to establish ergonomic programs in their workplaces under the general guidelines of the standard. The specific preventive and corrective measures to be taken will come out of those programs, rather than being mandated in detail by OSHA. Not all employers need to establish programs. The obligation to do so is triggered if and when a work-related "musculoskeletal disorder" (MSD) is reported, if it occurs in a job that has certain risk factors – forceful exertions, repetition, vibration and awkward postures – playing a significant part in each workday. (The risk factors are spelled out in a 2-page "Basic Screening Tool." The definition of MSDs is discussed further in this report *infra*.) Whether or not a program is required, all covered employers must furnish their employees with basic information about ergonomic injuries and how they are to be reported and dealt with under this standard.

Upon report of an MSD, the employer must either fully control the reported ergonomic hazard within 90 days (the "Quick Fix" option) or implement a full ergonomics

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[4] U.S. Department of Labor. Bureau of Labor Statistics. *Lost-Worktime Injuries and Illnesses: Characteristics, 1997*. Washington: the Bureau, 1999.

program. In either case, the employer must also take steps to prevent aggravation and promote healing of those injuries that were reported ("MSD management").

An ergonomics program consists of management leadership, employee participation and training, hazard analysis and control, medical management for those suffering injuries, and program evaluation. Hazard analysis means that problem jobs must be looked at closely by management in consultation with affected employees "to pinpoint the cause of the problem." Corrective actions include (in order of preference) physical redesign of the workstation or equipment, modification of work procedure or technique, reduction of exposure (e.g., through job rotation), and personal protective equipment. Medical management means referral to a qualified health care practitioner (at the employer's expense), compliance with the practitioner's recommendations, and continuation of pay and benefits during any necessary work restriction (for up to three months).

An ergonomics program may be discontinued when the risk factors for all jobs have been reduced below the levels described in the Basic Screening Tool. Unless and until that is achieved, the employer must continue trying to reduce the hazards to the extent feasible, with formal reviews of progress and options at least every three years.

In the initial response to the proposed standard, the most controversial of these provisions has been work restriction protection (WRP). This requires the employer to maintain employees' pay and benefits at their normal level for up to 90 days even though he or she has to be assigned to less productive work, and to maintain 90% of pay (and full benefits) if not able to work at all. Critics charge that WRP constitutes a substantial expansion of workers compensation benefits without legislative authority and that, indeed, workers compensation has always been a matter of state legislation. OSHA contends that it has sufficient authority and that a number of previous health standards have included such provisions. The agency says that WRP is especially needed for this standard because so much depends on employees reporting their injuries. Without WRP, they might fear being laid off without pay or with relatively meager workers compensation benefits.

The scope of the rule – which employers and which jobs require action – does depend to a great extent on the triggering event of a work-related MSD. Turning, then, to its definition, an MSD is a disorder of the soft tissues associated with the skeleton, and that is caused by cumulative trauma (also known as repetitive stress). The definition in OSHA's standard explicitly excludes injuries caused by single events, such as trips and falls. To constitute a "MSD incident," the injury must be serious enough to require medical treatment beyond first aid, or to have "signs or symptoms" that last more than seven consecutive days. Finally, "work-related" means that "exposure in the workplace caused or contributed to an MSD or significantly aggravated a pre-existing MSD." (Note also that action need not be taken unless the employee reporting the injury is in a job that routinely involves exposure to the risk factors spelled out in the Basic Screening Tool.)

Since key responsibilities under the rule are triggered by the reporting of one MSD, there is something of a stochastic (random) element to its scope. Large establishments with ergonomically problematic jobs will probably have to start corrective programs fairly soon after the rule goes into effect, while small establishments with less hazardous jobs may go years without such responsibilities. However, this is not a hard and fast rule, but will depend on when and where MSDs are reported. The stochastic element will play a further role in the case of the Quick Fix. The employer may use that option only if there

have been no more than one incident reported in a job, and two in the establishment, over the preceding 18 months. In short, smaller employers are more likely to "luck out" of some responsibilities, at least for periods, but this is not assured.

Opposition to the OSHA Standard

Riders to Labor Department appropriations bills prohibited OSHA from issuing a proposed or final standard on ergonomics during FY1995, 1996 and 1998. (In a close floor vote, the rider proposed for FY1997 was deleted.)

By 1997, the argument that scientific knowledge of ergonomics was inadequate for rulemaking had come to the fore. Specifically, many Members proposed that further work on the rulemaking should be suspended until independent research institutions could report on the state of scientific knowledge. It was argued that an independent, expert review was needed because OSHA had shown bias in its interpretation of available studies. Meanwhile, a couple of governmental reviews of the scientific literature were published. The National Institute for Occupational Safety and Health (NIOSH, a research agency in the Department of Health and Human Services) released its extensive review of the literature in July, 1997.[5] In October, 1998, the National Academy of Sciences (NAS) issued a report summarizing the results of a 2-day workshop.[6] Basically, both reports found a significant statistical link between workplace exposures and musculoskeletal disorders, but also noted that the exact causative factors and mechanisms are not understood. For example, it is recognized that non-work activities may interact with work exposures to aggravate symptoms, so that separating the effects of each is problematic.

The NAS workshop had been funded by a special appropriation of about $500 thousand. For FY1999, the Congress allocated another $890 thousand for a more thorough review of the literature by the NAS, although OSHA's rulemaking activity was allowed to proceed before the results are available (expected in early 2001). Stand-alone measures, H.R. 987 (Blunt) and S. 1070 (Bond), were introduced in the 106th Congress, to prohibit OSHA from issuing an ergonomics rule before the NAS completes its "peer-reviewed scientific study." H.R. 987 was passed by the House in August, 1999 by a vote of 217-209.[7] On November 23, 1999 – shortly after the Congress recessed without further action on these measures – OSHA issued its draft standard and expressed the intention of finalizing the rule by the end of 2000.

In June, 2000 opponents were able to get a restrictive rider attached to Labor's appropriation bill (H.R. 4577) in both chambers, which would prohibit issuance of a final

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[5] Bernard, Bruce, ed. *Musculoskeletal Disorders (MSDs) and Workplace Factors*. Available via World Wide Web at: [http://www.cdc.gov/niosh/ergosci1.html].

[6] Sandler, Howard. Evaluating the Science of Ergonomics. *Occupational Health*, November 1998. p. 73-74. The NAS report, *Work-Related Musculoskeletal Disorders: A Review of the Evidence*, is available at the Academy website: [www.nas.edu].

[7] Debate in *Congressional Record* of August 3, 1999. pp. H6901-H6927. The Senate took up a similar measure (a rider to an appropriation), but it was withdrawn in the face of a threatened filibuster. *Congressional Record*, October 7, 1999. pp. S12,159-12,176.

rule through FY2001.[8] The White House threatened to veto the bill because of this provision, among other issues, and the issue remained unresolved when Congress recessed for the elections. During that recess, on November 14, OSHA issued the final rule. (The provision was dropped when the conference report was filed in December, as issuance of the rule had occurred by then.)

Although the ergonomics rule may now appear to be a *fait accompli*, opponents could modify or overturn it in various forums, which happen to correspond to each of the three branches of government. The judicial branch became involved even before the final rule was issued, as two industry groups filed suit in the U.S. Court of Appeals for the District of Columbia. These suits argue variously that the standard exceeds OSHA's authority, that the agency did not follow proper procedure, and that the standard is vague, incomprehensible, and not based on sound medical science or economic analysis.

The Congress could revoke the standard through the Congressional Review Act (CRA). Although it takes effect on January 16, 2000, under the CRA, Congress has 60 **days of session** (probably extending, in this case, through February, 2001) in which to consider passing a joint resolution of disapproval.[9]

Finally, the new Administration could revise or revoke the standard. However, revoking a rule would probably necessitate a new rulemaking, complete with a new record of evidence and analysis at least as thorough as that required to issue a rule. According to principles spelled out by the Supreme Court in the airbag case (*Motor Vehicle Manufacturers v. State Farm*, 463 U.S. 29 (1983)), an agency "changing its course by rescinding a rule is obligated to supply a reasoned analysis for the change beyond that which may be required when the agency does not act in the first instance."

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[8] The House provision, authored by Ms. Northup, was adopted by the Appropriations Committee and upheld in a floor vote June 8, 2000 on Mr. Traficant's motion to strike (debate at *Congressional Record* pages H4094-4104). The Senate amendment, authored by Mr. Enzi, was added on the floor on June 22 (debate at pages S5590-5609, 5629-35 and 5641-5646).

[9] The time constraints are actually more complicated than described here. The CRA is codified at 5 U.S.C. Sections 801-808.