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Workers' Compensation Claims From Latex Glove Use

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To the Editor:

The article by Horwitz and Arvey 1 in the September 2000 issue of the *Journal* reports data on workers' compensation claims from health care occupations obtained from the Minnesota program. The authors, from the University of Minnesota's Carlson School of Management, sought to draw conclusions regarding the prevalence and monetary costs of allergy to natural rubber latex (NRL) among health care workers. They were supported in this work by Allegiance Healthcare Corporation. (Although not mentioned in the article, Allegiance is one of the world's largest suppliers of NRL medical gloves.)

The report is deficient in a number of areas. The methods are not adequately described. The authors report the Standard Industrial Classification codes that were included in the study but not the International Classification of Diseases, 9th Revision, codes. They indicate that claims that were filed but not awarded were excluded from the analysis; pending claims were also apparently excluded, but this is not defined. All other claims were also excluded unless they were deemed consistent with what would be expected from a latex-allergy claim. The basis for the judgments implied by consistent with what would be expected is not fully defined, particularly the source of the expertise used in these determinations, inasmuch as neither author is a medical professional. The reader does not know how NRL allergy claims were identified or how cases were excluded. Also missing are aspects of the description of the administration of the Minnesota Workers' Compensation system, including the general criteria for acceptance of claims related to occupational asthma or allergy, the proportion of such claims that have been rejected, and the time course, number, and type of pending claims.

The descriptions of the overall financial burden of the claims and the costs of protective measures are (1) insufficient to determine the assumptions about the data entering the calculation, (2) do not include costs of

claims from most workers with only medical expenses, and (3) fail to use accepted methods of cost-benefit analysis (eg, sensitivity analysis). When calculating compensation costs, the authors include low-risk workers (eg, secretaries, office managers), which reduces the apparent per capita cost. Although there seems to be a marked variation in claims during the time period, the authors do not report the significance of trends in the data. If the number of claims is increasing, the use of averaged data over the period for cost calculations would be misleading. In addition, when discussing the cost of interventions, the authors only mention a facility becoming latex glove-free as a change from using powdered NRL gloves. However, other preventive approaches can decrease exposure (eg, using low-protein, powder-free NRL gloves) and may also reduce or eliminate the occurrence of sensitization and allergic manifestations. [2,3]

The authors do not discuss the difficulty in determining disability from allergies and asthma, [4,5] nor do they attempt to develop and use an estimate of the proportion of affected individuals whose illnesses were not reflected in the workers' compensation data system. This is particularly important to this analysis, because hospital employees with occupational health problems may be treated and managed medically within the facility; costs for these employees are unlikely to be apparent in workers' compensation claims data. Also, interventions for workers allergic to NRL, including the use of non-latex gloves and modified work, are readily available; again, these costs would not generally be reflected in workers' compensation claims.

In the Results section, despite multiple exclusions, the data are referred to in terms of claims filed. The authors state that there are few data on the actual prevalence of latex asthma among health care workers, but they fail to discuss what is generally recognized as the most rigorous and reliable data available, which documented 2.5% of health care workers as having latex-induced occupational asthma, as confirmed with specific inhalation challenge. [6] The authors attempt to support the validity of their work by referring to a review of the uses of workers' compensation data in research. [7] The Goldsmith review lends support to the utility of workers' compensation data, particularly for proportional occupational morbidity studies, or to investigate the association of a disease with other health outcomes (eg, silicosis claims and lung cancer mortality). However, the review also highlights some of the complexities and biases that affect the completeness and reliability of workers' compensation data for etiologic investigations and for determining the overall prevalence of occupational illnesses, caveats that relate directly to the focus of the current article.

Probably the most troubling conclusion in the article relates to the role of glove powder. The findings are interpreted as representing evidence against the involvement of glove powder in the pathogenesis of NRL allergy (at most, glove powder acted as a very minor source of allergen transmission in health care settings), although no data were presented about glove-powder exposure, policies, or trends in its use. In the mid-1990s, a number of interventions occurred that might have affected exposures. For example, in 1996, the compensation board for the province of Ontario (Canada), as part of its initiative to assist the accommodation of sensitized workers, recommended that hospital facilities use powder-free, low-protein or non-latex gloves. In addition, individual hospitals instituted latex policies and glove changes at various times, many of which were during the mid-1990s. Subsequently, many health care workers were no longer exposed to high-allergen, powdered NRL. Allowable Ontario compensation claims for occupational asthma attributed to NRL increased from 0 to 1 per year in 1989 to 1990, from 9 to 11 per year in 1993 to 1996, and then declined to 2 to 4 per year, quite consistent with a temporal change associated with these policies and/or interventions. [8] Before interpreting their results in relation to glove powder, the authors should have reported when (or if) comparable changes in glove policies or other interventions were under way in Minnesota and to have included data for the years 1997 to 1999 to check for any declines in outcomes.

Because of the potential for conflict of interest and bias in analysis and interpretation of results, investigators who receive support from entities with a commercial and financial stake in the outcome of an investigation must be held to high scientific and ethical standards. [9] Methods and results of such work must be carefully presented and accompanied by a balanced discussion of the strengths and weaknesses of the data and the relationship of current results to previous work. To avoid the appearance of inappropriate influence by the sponsors, conclusions must be conservatively drawn and firmly based on the data presented. The report by Horwitz and Arvey fails to meet these standards.

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References

1. Horwitz IB, Arvey RD. Workers' compensation claims from latex glove use: a longitudinal analysis of Minnesota data from 1988 to 1997. J Occup Environ Med. 2000; 42: 932-938.
[Fulltext Link] [Medline Link] [CrossRef] [Context Link]

2. Allmers H, Brehler R, Chen Z, Raulf-Heimsoth M, Fels H, Baur X. Reduction of latex aeroallegens and latex-specific IgE antibodies in sensitized workers after removal of powdered natural rubber latex gloves in a hospital. J Allergy Clin Immunol. 1998; 102: 841-846.
[Context Link]

3. Levy D, Allouache S, Chabane MH, Leynadier F, Burney P. Powder-free protein-poor natural rubber latex gloves and latex sensitization. [letter] JAMA. 1999; 281: 988.
[Medline Link] [Context Link]

4. Harber P. Assessing occupational disability from asthma. J Occup Med. 1992; 34: 120-128.
[Medline Link] [Context Link]

5. Blanc PD, Cisternas M, Smith S, Yelin EH. Asthma, employment status, and disability among adults treated by pulmonary and allergy specialists. Chest. 1996; 109: 688-696.
[Medline Link] [Context Link]

6. Vandenplas O, Delwiche JP, Evrard G, et al. Prevalence of occupational asthma due to latex among hospital personnel. Am J Respir Crit Care Med. 1995; 151: 54-60.
[Medline Link] [Context Link]

7. Goldsmith DF. Uses of workers' compensation data in epidemiology research. Occup Med State of Art Rev. 1998; 13: 389-415.
[Context Link]

8. Liss GM, Tarlo SM. Temporal changes in workers' compensation claims for occupational asthma due to latex, Ontario, Canada. Am J Respir Crit Care Med. 2000; 161 (3, part 2): A167.
[Context Link]

9. Angell M. Is academic medicine for sale? N Engl J Med. 2000; 342: 1516-1518.
[Medline Link] [CrossRef] [Context Link]