Letters to the Editor

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California's Lead-Poisoning Prevention Efforts among Radiator-Repair Workers

We commend the Journal for publishing Bellows and Rudolph's "The Initial Impact of a Workplace Lead-Poisoning Prevention Project,"[1] which describes California's efforts to ensure its automobile radiator–repair industry's compliance with the Occupational Safety and Health Administration's (OSHA) lead standard. While others have decried the persistent problem of lead poisoning among radiator-repair workers, Bellows and Rudolph (who are with the California Department of Health Services) have tackled the problem head-on in a creative and inexpensive manner. So that others may follow the authors' lead, we would appreciate the clarification of a few points in the article.

Given OSHA's involvement with the project, how did the California Department of Health Services negotiate the cooperation of the industry's trade association? Specifically, what permitted the association to actively support the program without fearing the wrath of its members?

The California Department of Health Services used the state's Heavy Metal Registry to validate employer claims of blood lead testing. It is our understanding that the registry only requires reporting of blood lead levels exceeding 1.21 micromoles/deciliter (25 μg/dL). Table 1 of Bellows and Rudolph's article indicates that, of the 141 shops with employees, only 100 reported blood lead levels exceeding this value. Is it not possible that many of the 41 shops reporting levels below this value actually never carried out the claimed blood lead testing? In the same vein, do the authors have ideas as to how employer claims of blood lead testing might be confirmed in states without heavy metal registries? □

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Reference

1. Bellows J, Rudolph L. The initial impact of a workplace lead-poisoning prevention project. *Am J Public Health.* 1993;83:406–410.

Bellows and Rudolph Respond

Maalouf and colleagues raise several important points that affect the applicability, to other settings, of our approach to the prevention of occupational lead poisoning.

The support of the trade association for the project can perhaps only be fully explained by the association itself. However, several factors were probably involved. First, the project was based on the proposition that most industry noncompliance resulted from simple ignorance of standards and not maliciousness. This dictated a strong focus on simplifying and prioritizing hazard control recommendations and on balancing enforcement actions for a tiny minority of companies, with an unprecedented degree of support and technical assistance for the majority. The association chose to position itself as a champion of responsible environmental management rather than face the possibility of more aggressive government action later. Strict limitations on lead use were then being considered in Congress. The association drew mainly on the industry's larger companies for its membership, so it likely appreciated the redirection of Occupational Safety and Health Administration (OSHA) enforcement away from large companies (which previously had the highest risk of complaint-driven inspections) and towards companies with serious hazards. Finally, the association saw opportunities to highlight the value of membership by providing useful services related to the project.

Maalouf and colleagues' concerns about the validity of company-reported data miss our main point: that the data that could be checked were in remarkably good agreement (93%) with laboratory data. However, the hypothesis raised by Maalouf et al. was addressed by an aspect of the project not described in the article. Each physician who was named in one or more companies' progress reports was mailed an information packet, including a list of companies who identified him or her as their medical supervisor. The physicians were advised

to inform the California Department of Health Services of any situation in which they were not, in fact, supervising blood lead testing for a listed company. None did.

Maalouf et al. solicit ideas on verifying blood lead testing in the absence of a registry. The company-reported data in our study were apparently highly accurate, so perhaps all that is needed is any plausible method for validating a sample of reported data. For example, employers could be asked to send in photocopies of the actual laboratory report for each employee tested. In fact, many companies in our project submitted these voluntarily.

Unfortunately, the full impact of this intervention project remains unknown. Before the project was completed, the California Department of Health Services withdrew much of its support, staff were removed from the program, and follow-up efforts were sharply curtailed. We would be delighted to see this model implemented elsewhere, including an evaluation of lasting impact. □

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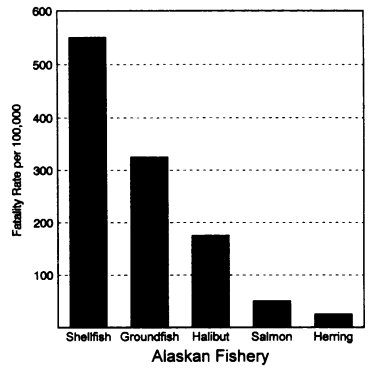
Fishing Deaths in Alaska Vary by Fishery

The occupational fatality rates presented by Schnitzer et al. provide further evidence that the Alaska commercial fishing industry is indeed among the most hazardous industries in the nation.[1] In their article, the authors hypothesize that some types of fishing (i.e., fishing for certain species and with certain types of gear) may be more dangerous than others. To address this research question, the Division of Safety Research, National Institute for Occupational Safety and Health (NIOSH), initiated a project in 1990 to determine how best to characterize type of fishing. Fishery classification was chosen to best represent the differences between types of fishing. Fisheries differ in several important ways, including species of fish caught, geographic location, length and time of year of fishing season, type of fishing gear, and management system. Alaska has five major fisheries (salmon, shellfish, herring, halibut, and groundfish) that represent nearly 100% of the total harvest.



Source. Alaska Activity, Division of Safety Research, National Institute for Occupational Safety and Health.

FIGURE 1—Annual fisher fatality rates by fishery, Alaska commercial fishing industry, 1980 through 1988.

A follow-up search was done for all fisher fatalities for 1980 through 1988 to determine fishery classification. Sources for the search included US Coast Guard marine casualty reports, newspaper and trade paper articles, harbormaster and vessel license records, and expert opinion from fishing and marine safety organizations. Type of fishery was obtained for 204 (74%) of 278 fatalities. Over three quarters (78%) of the cases for which type of fishery was not available were single-fatality incidents; the majority (55%) of fatalities for which fishery was unknown took place during the months of May through August.

Employment by fishery for the 9-year period was obtained by combining 1980 through 1984 information from the Alaska Department of Labor[2] (corrected for underreporting of employment in the groundfish fishery) with 1985 through 1988 employment estimates based on a 1989 Alaska seafood industry study.[3]

The mean annual fisher fatality rate for the period 1980 through 1988 was 300 per 100 000 workers. Calculated fisher fatality rates by fishery for 1980 through 1988 appear in Figure 1. Fatality rates are substantially higher for the shellfish (primarily king and tanner crab) and groundfish (primarily sablefish and pollock) fisheries than for the other three fisheries.

Risk factors contributing to elevated fatality rates in the Alaska commercial fishing industry (especially the shellfish and halibut fisheries) are well covered in a May 1993 *Morbidity and Mortality Weekly Report* article.[4] □

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1. Schnitzer PG, Landen DD, Russell JC. Occupational injury deaths in Alaska's fishing industry, 1980 through 1988. *Am J Public Health.* 1993;83:685–688.
2. *Alaska Seafood Industry Employment, 1980–1984.* Juneau, Alaska: Alaska Department of Labor, Research and Analysis Section.
3. McDowell E, Calvin J, Gilbertsen N. *The Alaska Seafood Industry Study: A Technical Report.* Prepared for the Alaska Seafood Industry Study Commission, Anchorage, Alaska, May 1989.
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Occupational Injury Deaths in Norway's Fishing Industry

In the May 1993 issue of the Journal, Schnitzer et al. reported the results from an interesting study on occupational injury deaths in the Alaskan fishing industry.[1] By combining data from multiple sources, the authors found a 5-year annual fishing-related fatality rate of 414.6 per 100 000 fishermen. This is a very high rate compared with rates previously reported from studies in Europe.[2,3]

The Norwegian fishing fleet operates under similar extreme conditions, especially during winter, in the Arctic sea up to 75° north latitude. Having had the opportunity to study the Norwegian fishing industry, we would like to comment on some factors that could have influenced the estimates made by Schnitzer et al. in their important study.

It is known that seamen have a higher risk than other workers for accidental deaths outside their work, perhaps reflecting more risky behavior among seamen than among other workers.[4] Deaths that were not related to