



INFRASTRUCTURE, SAFETY,
AND ENVIRONMENT

***Thirty-five Years of Enforcement at OSHA:
What Has Been Learned?***

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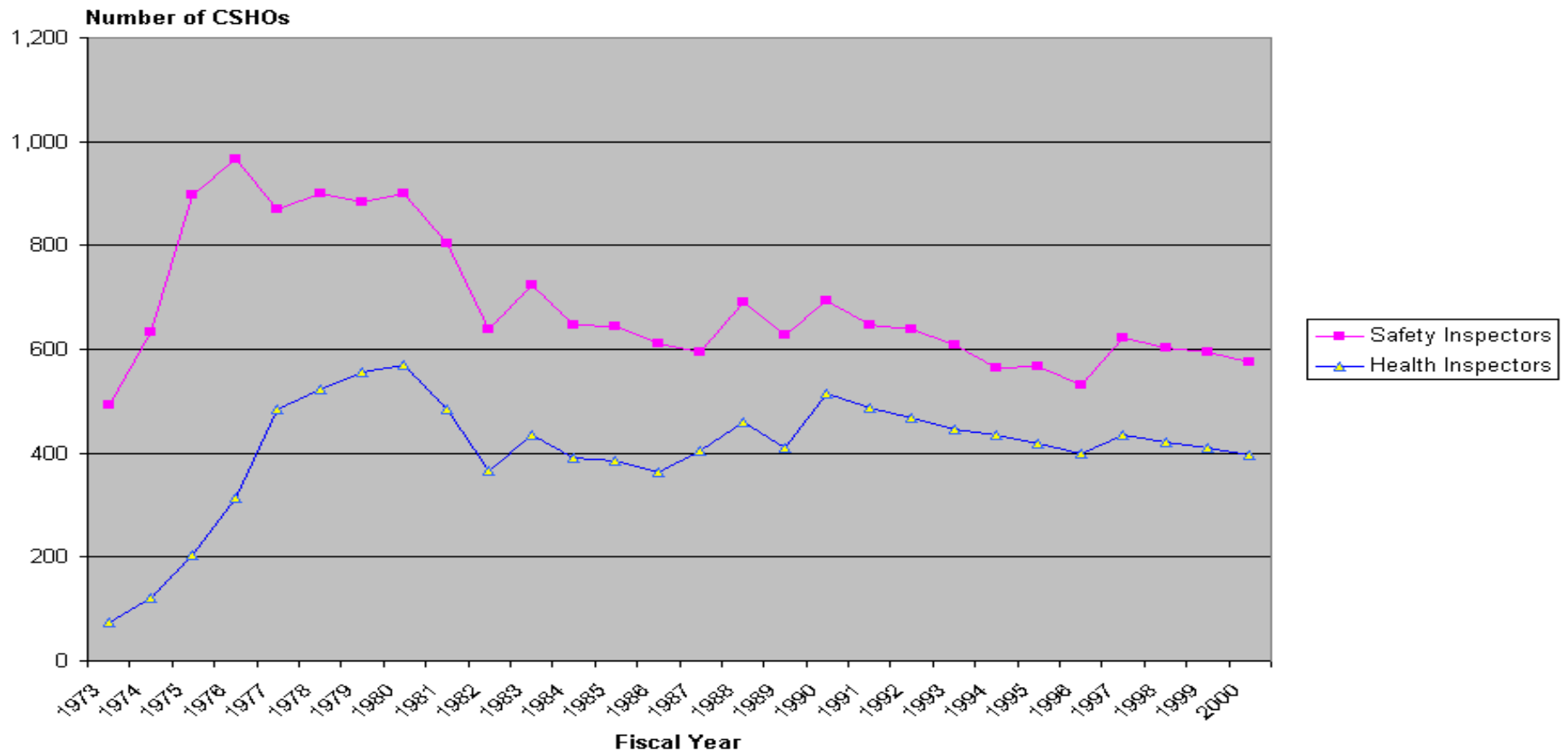
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Many Changes, Little Learning

- Many changes in enforcement policy have occurred over 35 years since OSHA began work in 1971. The reasons for the changes have varied.
- Some occurred as a result of changes in political direction, as when a new President takes office.
- Others occurred in response to disasters, in an attempt to a) prevent their reoccurrence or b) ward off political criticism.
- Still others represented efforts to ensure more uniformity in enforcement.
- We will briefly review some of these changes. However, little has been learned about whether the changes have made OSHA more effective in preventing injuries and illnesses because OSHA itself has rarely tried to assess the effects of these policies.
- However, some independent studies have been carried out and I will review some of their findings.

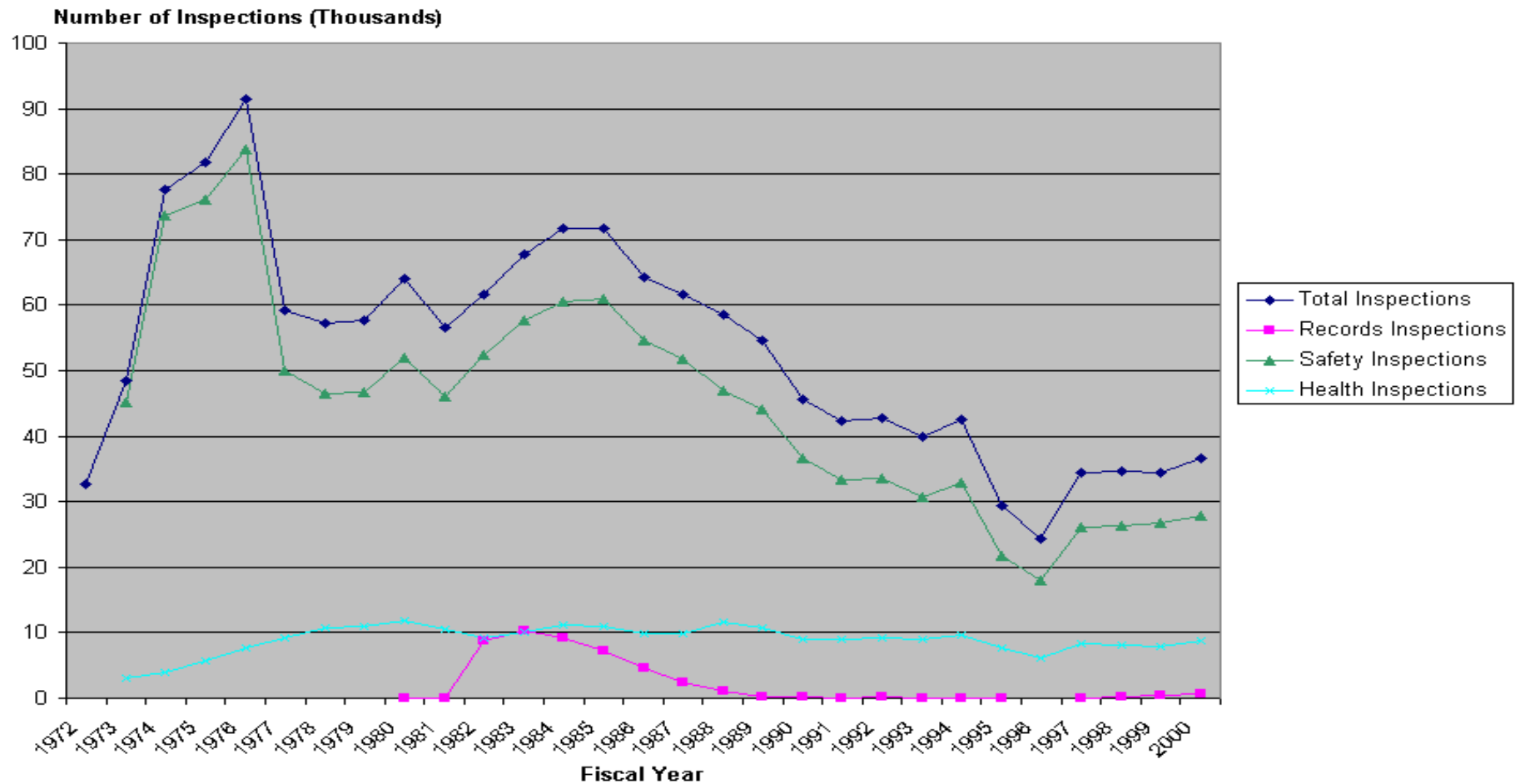
20th Century OSHA Enforcement Data

CHART 2
COMPLIANCE SAFETY AND HEALTH OFFICERS



20th Century OSHA Enforcement Data

CHART 1
OSHA INSPECTIONS

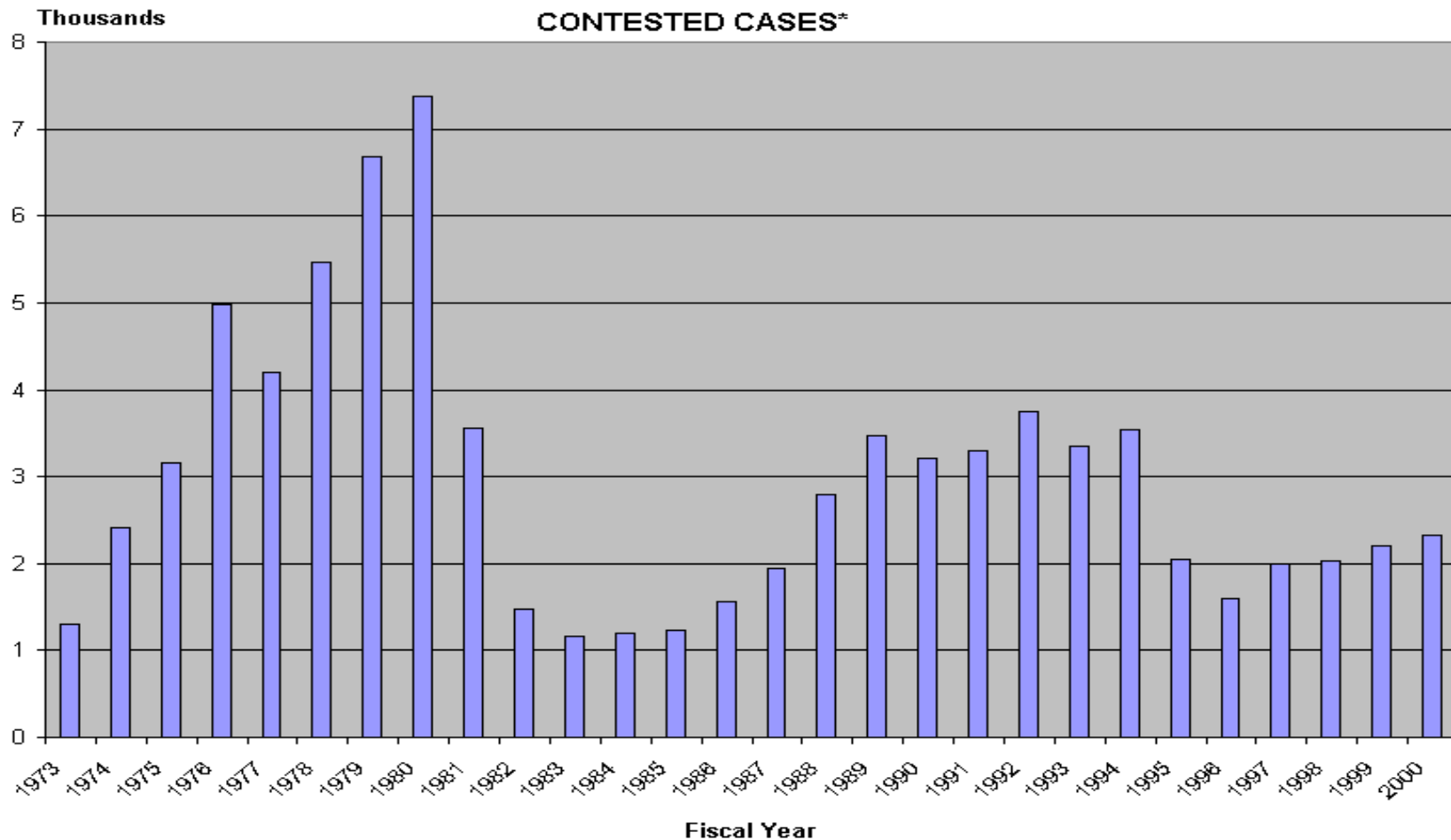


Comparison to Canada

- For Federal OSHA, the 1,000 compliance officers are responsible for about 78 million workers (60% of the US total), or 1 per 78,000. In Canada, the 9 largest provinces range from 1 per 10,000 to 1 per 20,000.
- In Canada, there are more inspections per inspector. Ontario conducts as many as Federal OSHA despite covering less than 1/10 as many workers. However, penalties per inspection are considerably higher in the US (which is one reason inspectors are more time-consuming here).
- However, I am not aware of any adequate study comparing fatalities in the two countries. So we don't know whether the difference in staffing and inspections translates into safety benefits (or, of course, what costs were incurred to achieve them).

20th Century OSHA Enforcement Data

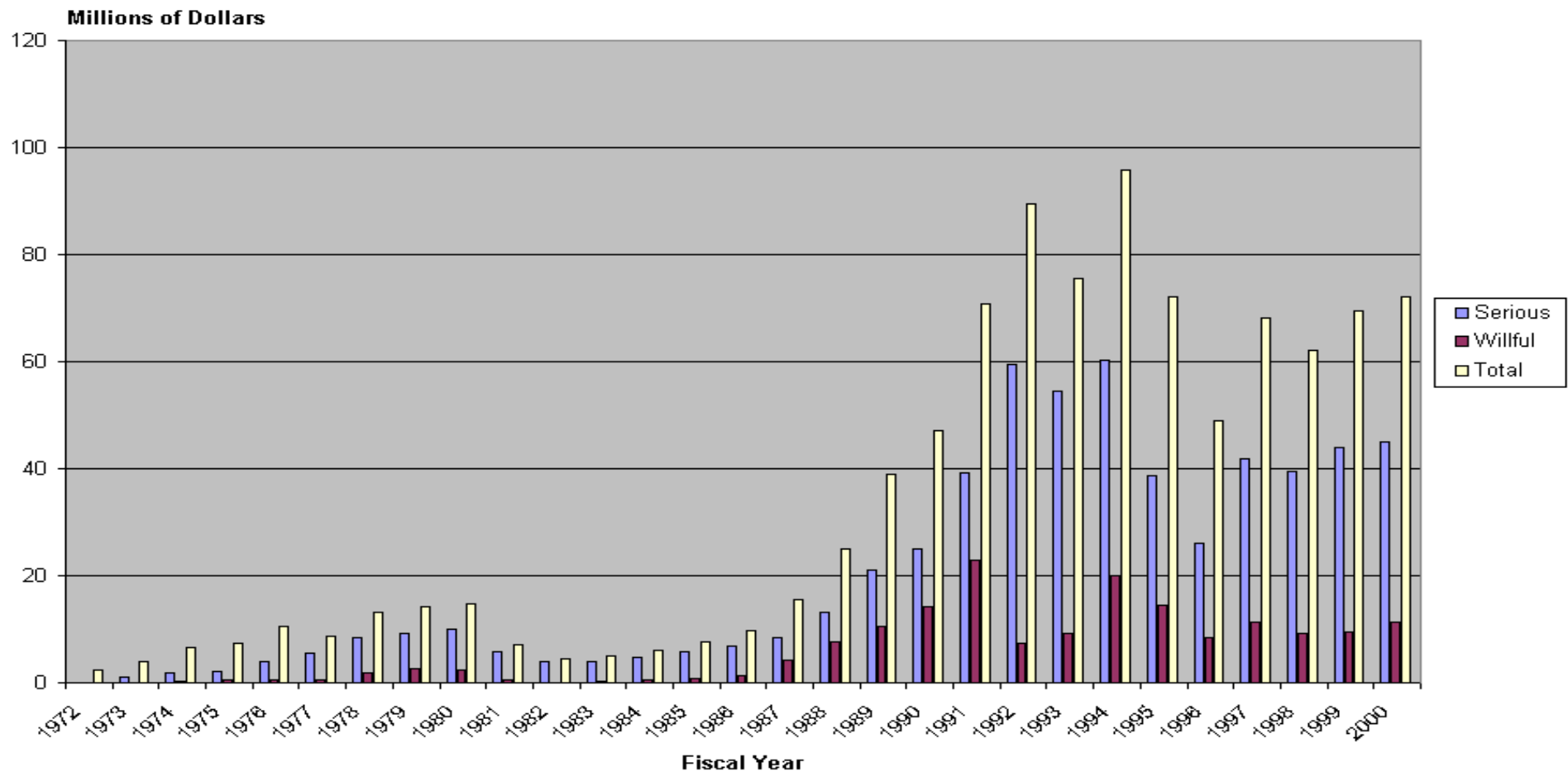
CHART 6
CONTESTED CASES*



*Number of Inspections with One or More Contested Violations

20th Century OSHA Enforcement Data

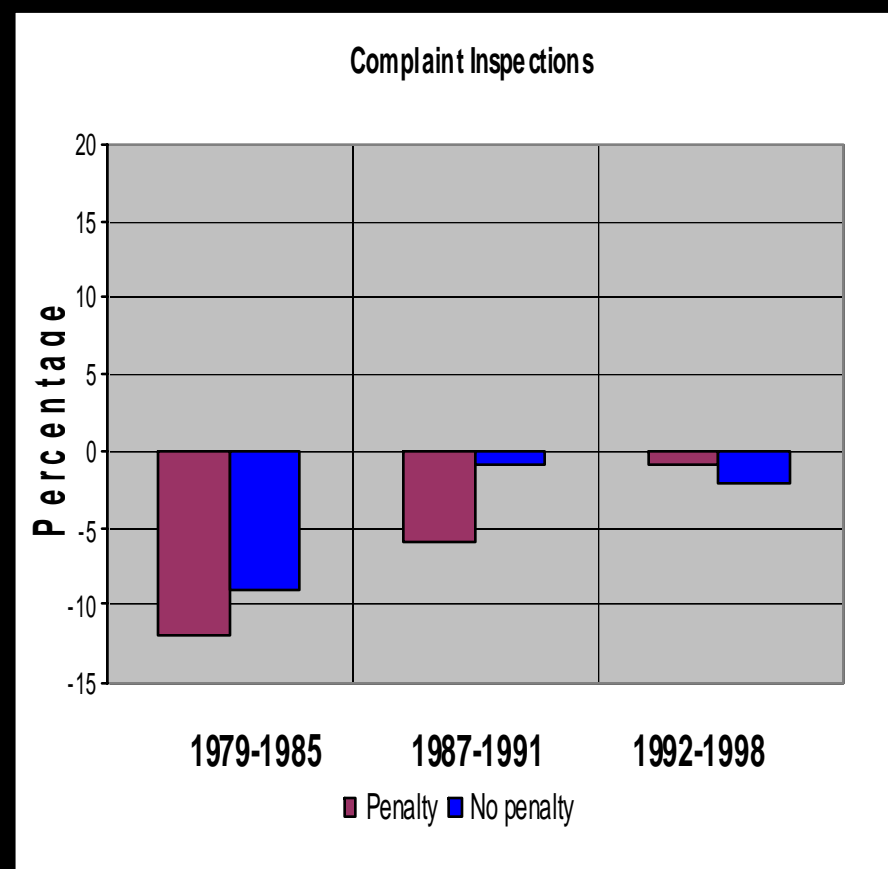
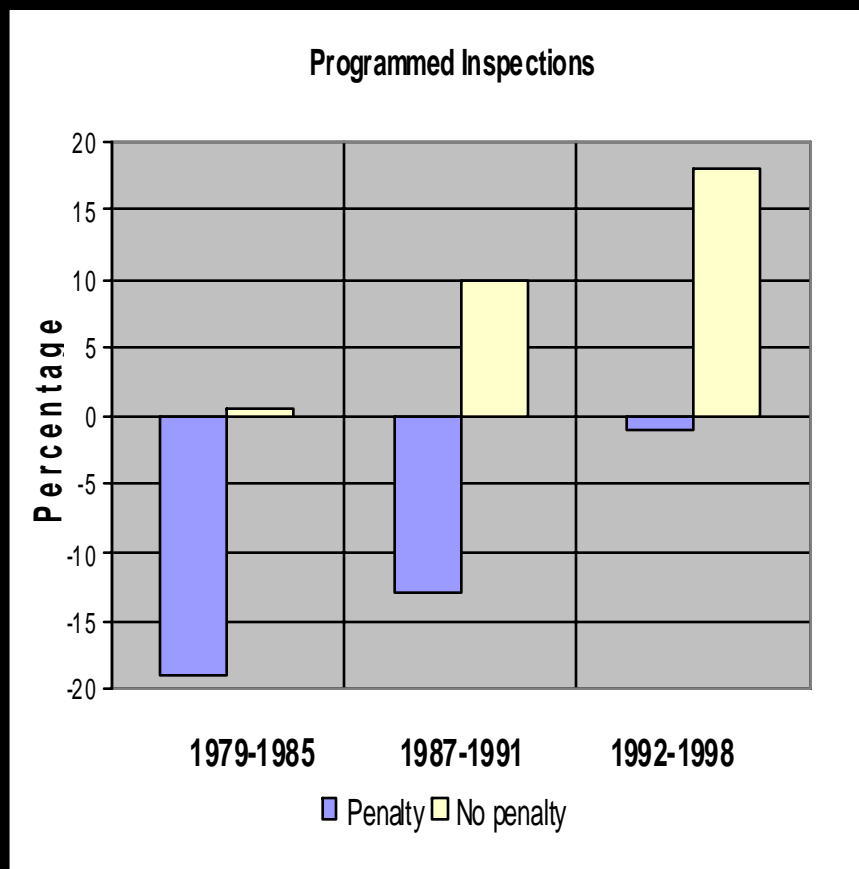
CHART 8A
PROPOSED PENALTIES, BY TYPE OF VIOLATION



What's Been Learned About How to Make Enforcement More Effective in Prevention?

- **Inspecting workplaces and punishing them for violations can help to reduce injuries and illnesses—But the results may not be generalizable to all places and times.**
- **The best evidence for the effects was Gray/Scholz study that found that inspections in manufacturing that fined firms for serious violations led to reductions in injuries of about 20% over the next 2 or 3 years. (Gray&Scholz, 1991)**
- **However, this study looked at inspections from 1979-85. When we examined more recent periods, the results were much less satisfying. (Gray & Mendeloff 2005)**

Graph 1. Changes in Lost Workday Injuries in Manufacturing Following Inspections With and Without Penalties

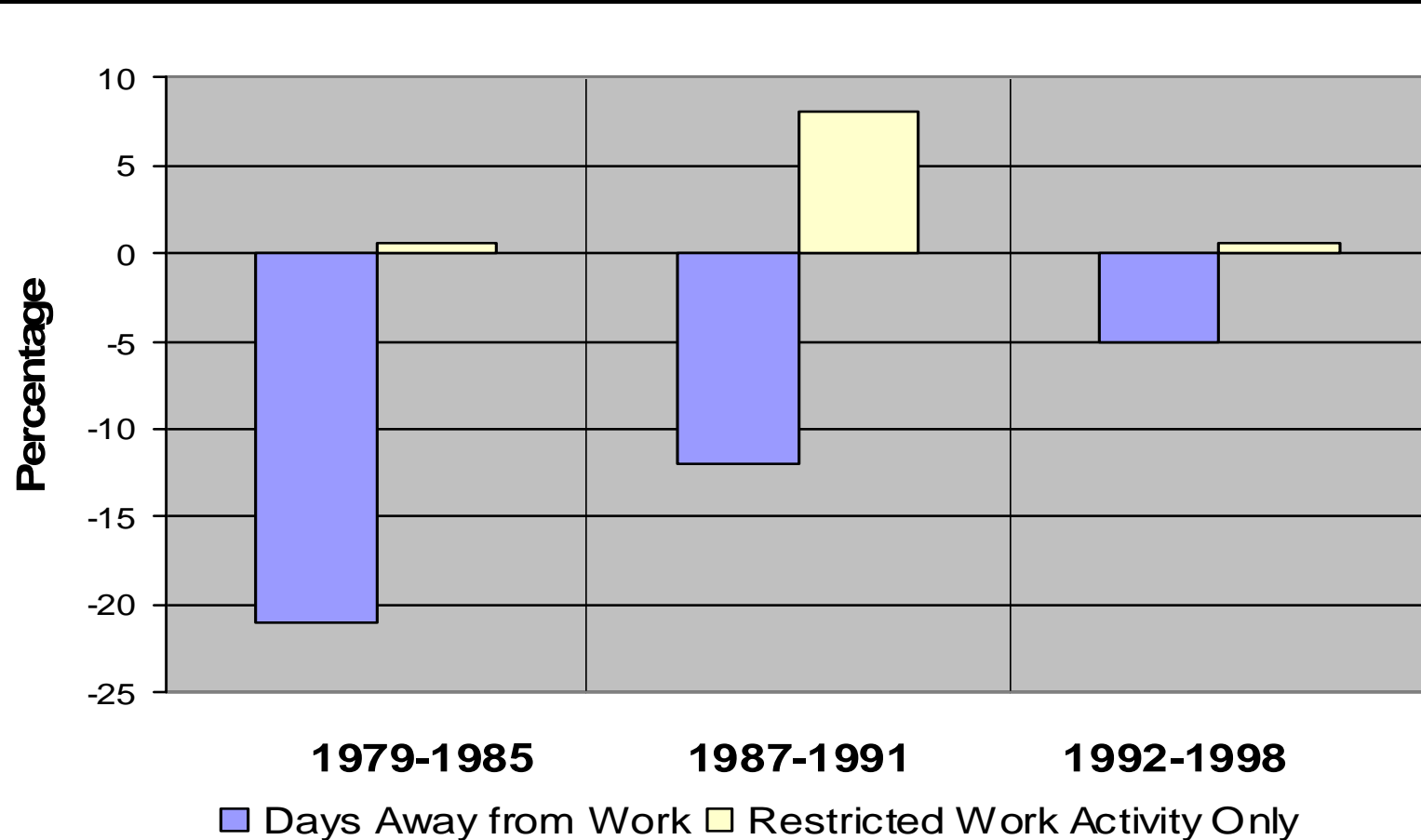


These effects were estimated controlling for changes in employees and hours worked at each establishment and controlling for year and 2 digit industry.

These tables show the impact of inspections on the percentage change in lost workday injuries over the 3 years after the inspection.

Unless noted, the data are for the 29 states where Federal OSHA operates the enforcement programs.

Graph 2. Effects of Inspections with Penalties on Lost Workday Injuries With and Without Days Away from Work



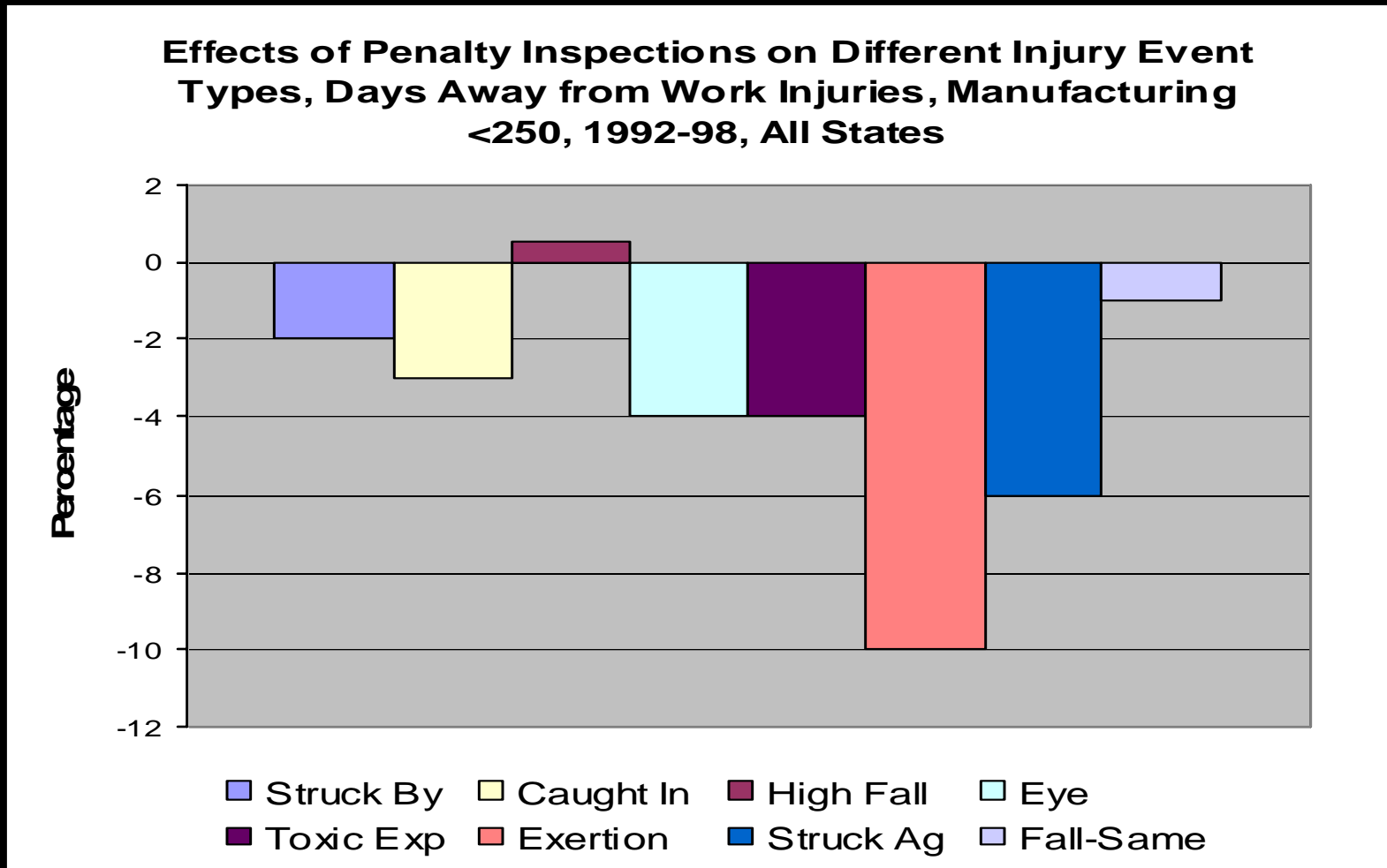
More Learning

- **In the 1992-98 period, the average effect of penalty inspections was preventive only for workplaces with under 250 employees.** (Gray & Mendeloff 2005)
- **Worker complaints take inspectors to workplaces with, on average, high injury rates within their industries. The higher the *relative injury rate*, the more serious violations are cited.**
- **When a worker accompanies the inspector on a programmed inspection, the number of violations cited goes up substantially.** (Huber, *The Craft of Bureaucratic Neutrality*)

More Learning

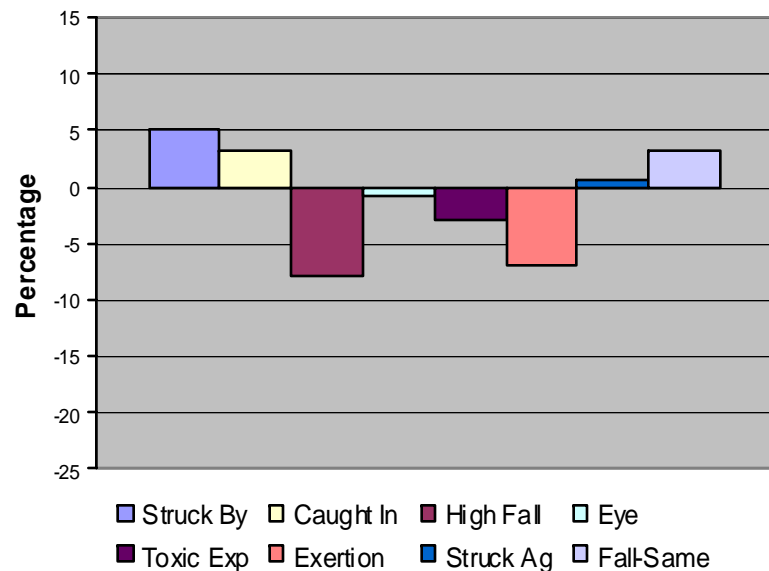
- **When penalty inspections in manufacturing were effective during the 1992-98 period, their impact was not limited to injuries related to existing OSHA standards. This finding suggests that employers often interpret the penalties as a general message to do better on safety.** (Mendeloff & Gray 2005)
- **However, there are some standards which, when cited and penalized, appear to have much greater effects than others in preventing future injuries.** (Mendeloff & Gray 2005)

Graph 3. Effects of Penalty Inspections on Different Injury Event Types, Days Away from Work Injuries, Manufacturing <250, 1992-1998, All States

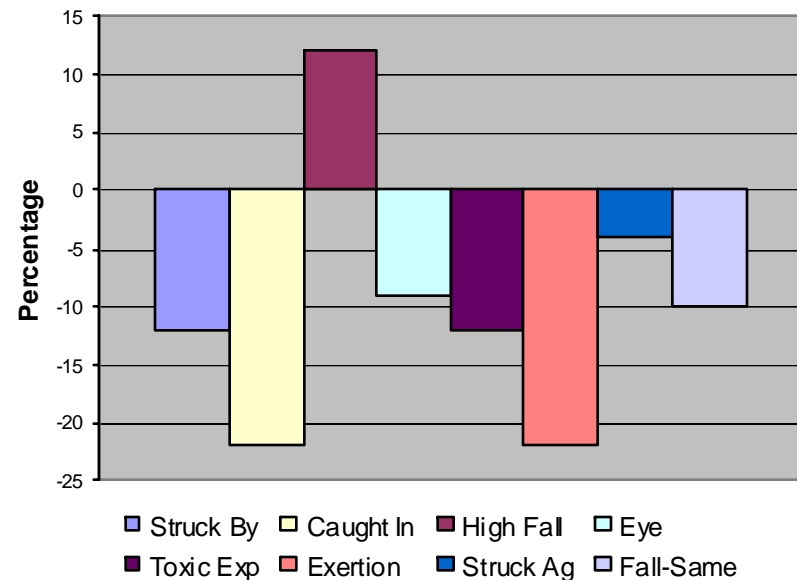


Graph 4. Effects of Citing Particular Standards on Different Injury Event Types, Days Away from Work Injuries, Manufacturing, 1992-98, Federal OSHA States

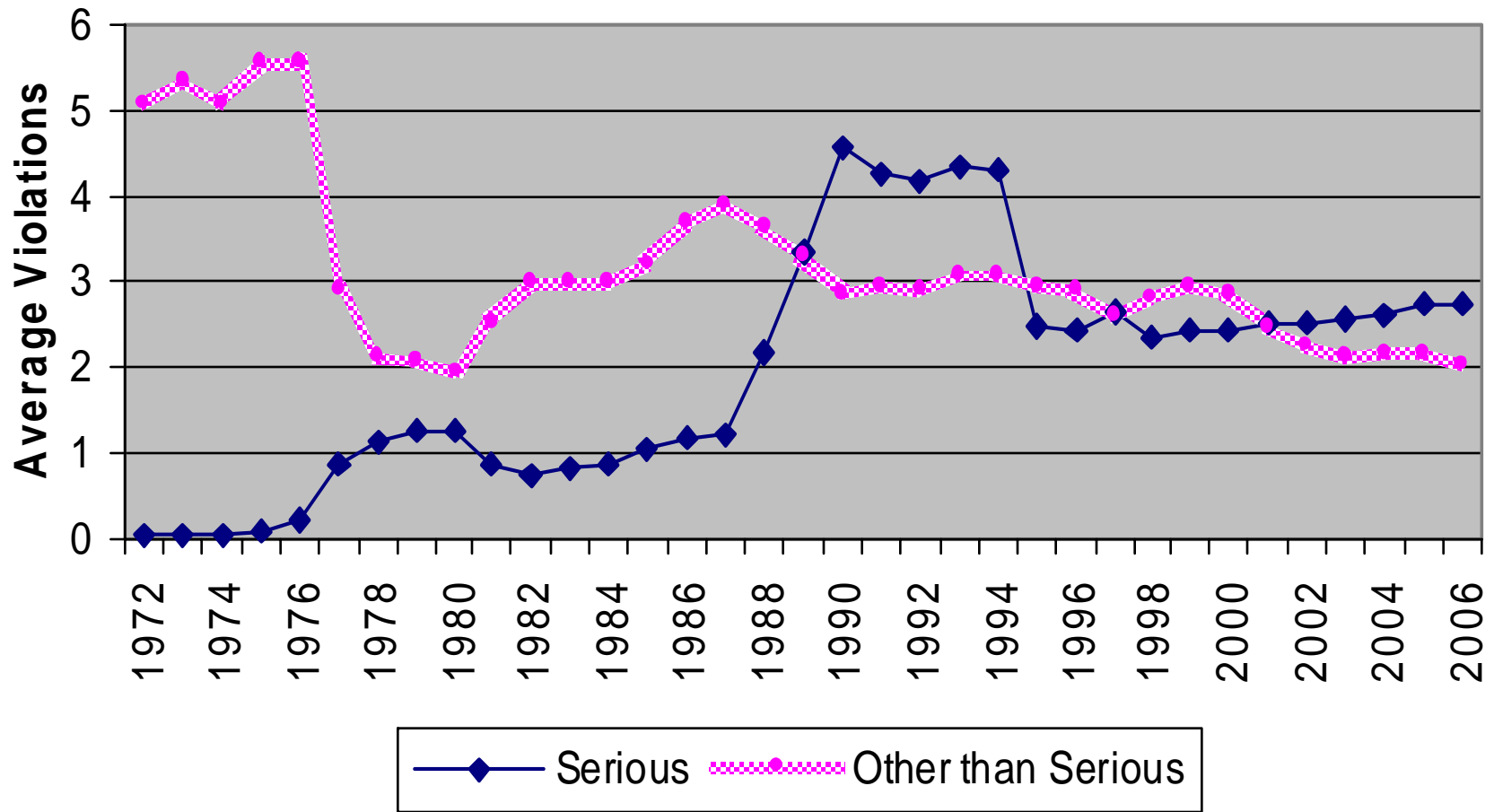
Machine Guarding



Personal Protective Equipment



Graph 5. Average Number of Violations Cited Per Inspection in Manufacturing Federal States, 1972-2006



Learning about Compliance

- **As the previous slide shows, counts of violations do not provide a pure measure of trends in non-compliance over time.**
- **However, earlier work by Gray and Jones (1991) and some ongoing work indicates that by far the biggest improvement in compliance occurs between the first and second inspection. This is true for toxic exposures as well as safety violations.**
- **These findings may support efforts to focus more on never or rarely-inspected establishments.**

Why So Little Learning?

- **Injury and illness data are often not trustworthy. Compare with motor vehicle deaths or serious crashes.**
- **Injuries occur in private facilities. Learning often requires their cooperation.**
- **In the U.S., OSHA has little analytic capacity and argues that it is “an enforcement agency, not a research agency.”**
- **Neither labor nor industry have made stronger analysis a priority for OSHA.**

What's Needed?

- **But if an enforcement agency takes that view, no one else can learn for it. Only the agency has the regulatory authority to collect data from firms.**
- **To carry out good evaluations of whether its interventions work, the agency must be willing to try things out in a somewhat experimental fashion. It must be willing to conduct sound studies and not to suppress results it doesn't like.**
- **In this era of performance measurement, enforcement agencies sometimes have a difficult time demonstrating their value. However, one of the most important measures of performance may be whether the agency is learning how to do its job better—more effectively and efficiently. Without that learning, we may be in the same place in 20 years that we are now.**

A Few Priority Questions for OSHA

- **Is compliance improving in general, and with specific standards, among various categories of firms? What is the relation between compliance and injury and illness reduction?**
- **What is the effectiveness of site-specific targeting in preventing injuries?**
- **Where are the effects of consultations, alliances, the VPP program and other non-enforcement efforts?**
- **Why are some firms improving more than others? Does that knowledge offer insights for public action?**
- **Most of these questions have been addressed, but none through studies that stand up to real scrutiny.**