To the Editor:
The Needlestick Safety and Prevention Act (NSPA) (HR.5178) was signed into law on November 6, 2000. It required employers to provide safety-engineered devices to employees who are at risk for exposure to bloodborne pathogens, to include frontline workers in selecting these devices, to review exposure-control plans at least annually to ensure that they reflect advances in sharps-safety technology, and to maintain sharps-injury logs that specify required details about the injury. The NSPA also mandated that the Occupational Safety and Health Administration (OSHA) revise the Bloodborne Pathogens Standard in 2001, incorporating these requirements.

To determine whether the NSPA has had an effect on the rate of percutaneous injuries among hospital employees, we used a historical, prospective design, with the use of a multihospital sharps-injury database maintained by the International Healthcare Worker Safety Center at the University of Virginia. Since 1993, a group of U.S. hospitals voluntarily contributed sharps-injury surveillance data. We selected the period from 1995 through 2005, which included 23,908 injuries that occurred in 85 hospitals in 10 states.

We calculated the annual rates of percutaneous injuries per 100 full-time–equivalent hospital employees, as reported by the American Hospital Association. We estimated these rates with the use of a change-point Poisson regression model and calculated confidence intervals according to the bootstrap method. As shown in Figure 1, there was a trend toward increasing rates of injuries before the legislation was enacted, which was followed by a drop of about 38% (95% confidence interval, 35 to 41) in 2001 when the NSPA took effect. Subsequent injury rates, through 2005, remained well below pre-NSPA rates.

Prelegislation safety conditions may have resulted in reductions in the rates of percutaneous injuries before the patterns that we observed took place. For example, OSHA’s Bloodborne Pathogens Standard, which required safer practices, had been in effect since 1991, and the
early adoption of safety-engineered sharp devices also occurred before the passage of the NSPA. However, the significant decrease in these rates did not occur until the year after its passage, suggesting that this particular legislation had an independent effect. This reduction in percutaneous injuries was concomitant with a steep market shift from conventional to safety-engineered devices and an increase in the number of OSHA citations for violation of the revised standard for handling bloodborne pathogens — two factors directly linked to the legislation.5

Since percutaneous injuries are the most frequent route of transmission in occupationally acquired infections due to bloodborne pathogens, a reduction in such injuries could be expected to result in a proportional decrease in occupational morbidity and mortality from these pathogens, although at present there are no national postexposure surveillance data to confirm this assumption.

Our findings provide evidence that the NSPA contributed to the decline in percutaneous injuries among U.S. hospital workers. They also support the concept that well-crafted legislation bolstered by effective enforcement can be a motivating factor in the transition to injury-control practices and technologies, resulting in a safer work environment and workforce.

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