

# Workplace Violence Prevention Programs in Hospital Emergency Departments

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**Objective:** Hospital violence is a growing concern, yet little is known about existing programs. This study compared workplace violence programs in high-risk emergency departments among a representative sample of 116 hospitals in California and 50 hospitals in New Jersey. **Methods:** Information was collected through interviews, a facility walk-through, and review of written policies, procedures, and training material. Programs were scored on the components of training, policies and procedures, security, and environmental approaches. **Results:** California had significantly higher scores for training and policies and procedures, but there was no difference for security and environmental approaches. Program component scores were not highly correlated. For example, hospitals with a strong training program were not more likely to have strong policies and procedures. **Conclusions:** Most hospitals in California and New Jersey had implemented a workplace violence prevention program, but important gaps were found. (J Occup Environ Med. 2007;49:756–763)

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This project was funded by the CDC/National Institute for Occupational Safety and Health (R01 OH007934).

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DOI: 10.1097/JOM.0b013e318076b7eb

Health care has been consistently identified as having high rates of workplace violence.<sup>1,2,3</sup> Among health care workers, nurses have the highest rate of violent victimization, and nurses providing emergency care are particularly vulnerable.<sup>4,5</sup> In one study of Minnesota nurses, emergency nurses were over four times more likely to report that they had been physically assaulted compared with nurses in other units.<sup>5</sup> Despite this risk, very little is known about hospital efforts to reduce violence in emergency departments.

This study compared workplace violence programs in a randomly selected and representative sample of emergency departments in California and New Jersey. These states were chosen because they have several different requirements for the development of workplace violence prevention programs.

In 1993, California was the first state to enact legislation that required acute care and psychiatric facilities to implement comprehensive workplace violence programs. The California Hospital Safety and Security Act (Assembly Bill 508) required programs to be implemented by July 1, 1995. Although New Jersey is currently considering legislation to require hospitals to develop violence prevention programs, no such legislation currently exists.

California was also the first state to release specific guidelines for the establishment of a comprehensive hospital workplace violence program through the 1993 California Occupational Safety and Health Associa-

tion's (Cal/OSHA) "Guidelines for Security and Safety of Health Care and Community Service Workers" ([http://www.dir.ca.gov/DOSH/dosh\\_publications/hcworker.html](http://www.dir.ca.gov/DOSH/dosh_publications/hcworker.html)). These Guidelines provide a comprehensive list of approaches to reduce workplace violence and offer a strategy to design and implement a comprehensive security program. New Jersey is under the jurisdiction of the Federal OSHA. The Federal OSHA had general workplace violence guidelines in 1993, and introduced specific hospital guidelines in 1994 (<http://www.osha.gov/Publications/OSHA3148/osha3148.html>).

The goal of this study was to compare the components of workplace violence programs in emergency departments in these two states, to identify the most commonly implemented program elements, and to identify gaps in existing programs. Programs were measured based on recommendations made through the California Hospital Security Act, the Cal/OSHA Guidelines, and the Federal OSHA Guidelines.

## Materials and Methods

### Study Design

This study was a cross-sectional survey of a representative sample of hospitals in California and New Jersey.

### Study Population

A complete census of licensed acute care facilities was obtained from the California Office of Statewide Health Planning and Development (OSHPD) and the New Jersey Department of Health and Senior Services, Division of Health Care Quality and Oversight. Acute care hospitals were divided into the categories of Level I and II trauma centers, Level III and IV trauma centers, and acute care hospitals without a designated trauma status. Acute care hospitals without a trauma designation were categorized into those with 300 beds or more, and those with fewer than 300 beds. In New Jersey, hospitals were randomly selected within each of these categories to represent the statewide distribution. The size of California made it difficult to collect a random sample from the entire state. The sample was selected from 25 of the 58 counties, representing both urban and rural areas of the state. These counties covered approximately 68% of the California population and 65% of the state's hospitals. Within categories, hospitals were assigned a number, and then chosen based on a list of random numbers generated in SAS (SAS Institute, Inc., Cary, NC).

### Selection of Participants

From a total of 364 licensed acute care hospitals in California, 125 hospitals were invited to participate and 116 agreed, for a response rate of 93% (Table 1). Level I and II trauma centers had the lowest response at 83%, whereas Level III and IV trauma centers and large acute care hospitals had a response rate of 100%. From a total of 85 licensed acute care hospitals in New Jersey, as of 2000, 71 were invited to participate and 50 agreed, for a response rate of 70.4%. Response was lowest for acute care hospitals and highest for trauma centers. The original goal was to enroll 100 hospitals in California and 50 in New Jersey, which would have provided 80% power to show a difference in response to the California Hospital Security Act. This power calculation was based on a pilot study conducted with 16 California hospitals to identify the prevalence of different safety features. The final sample size met or exceeded the original goal. These 16 pilot hospitals were included in this analysis. A comparison of the pilot and non-pilot hospitals found no significant differences.

For both states, the distribution of participating hospitals did not differ significantly from the distribution of

**TABLE 1**

Distribution of Licensed Hospitals and Emergency Department Participation Rate, by Hospital Type in California and New Jersey

Hospitals	California†				New Jersey†			
	Statewide Licensed Hospitals, N (%)	Hospitals Randomly Selected to Participate	Participating Hospitals, N (%)	Participation Rate Among Sampled Hospitals, %*	Licensed Hospitals, N (%)	Hospitals Randomly Selected to Participate	Participating Hospitals, N (%)	Participation Rate Among Sampled Hospitals, %*
Total	364	125	116	92.8	85	71	50	70.4
Trauma I and II	41 (11.3)	18	15 (12.9)	83.3	11 (12.9)	11	10 (20)	90.9
Trauma III and IV	7 (1.9)	2	2 (1.7)	100	0	0	0	
Acute care with >300 beds	60 (16.5)	23	23 (19.8)	100	18 (21.4)	15	10 (20)	66.7
Acute care with <300 beds	221 (60.7)	71	65 (56.0)	91.5	56 (66.7)	45	30 (60)	66.7
Rural acute care (all <300 beds)	30 (8.2)	9	9 (7.8)	100	0	n/a	n/a	n/a
Rural trauma III and IV	5 (1.4)	2	2 (1.7)	100	0	n/a	n/a	n/a

\*Participation rate = (number of hospitals that agreed to participate)/(number of hospitals that were invited to participate) × 100.

†Licensed acute care facilities as of 2002.

licensed hospitals, indicating that the participating hospitals represented the statewide distribution of hospital type. Because this study collected information about the facility and not about individuals, it was ruled exempt by the human subject protection committees of all agencies involved.

### Data Collection and Processing

Data collection was conducted through on-site facility visits from 2002 through 2005. Prior to arrival, hospitals were requested to prepare copies of all workplace violence training materials and policies for study review. During the visit, study researchers interviewed the emergency department nurse manager and took a tour of the unit to examine environmental components of the workplace violence program. In addition, an in-person or telephone interview was conducted with the security director or risk manager of each hospital. Security directors in three hospitals, all in New Jersey, declined to be interviewed.

Trained employees of the California Department of Health Services and the New Jersey Department of Health and Senior Services conducted on-site interviews. Interviewers were trained together by the study researchers, and four hospital interviews were conducted by the California and New Jersey teams together to ensure similar interview methods.

Interviews included information about the emergency department's workplace violence training program, violence prevention policies, reporting systems for violent events, and security personnel and equipment. Specific questions were developed based on recommendations in the Cal/OSHA Guidelines, the Federal OSHA Guidelines, and the CA Hospital Security Act. Based on information from the 16 pilot hospitals, the interview form was re-designed to add additional questions. These 16 hospitals were omitted from analysis of the additional questions.

A scoring system was developed to identify the presence of specific approaches mentioned in the guidelines or required in the act. Points were assigned in the workplace violence prevention program components of training (14 points), administrative policies and procedures (21 points), security (4 points), and environment (6 points). When there were discrepancies between the interviews and the written material provided, responses from the written material were used. The specific approaches measured are presented in Tables 2, 3, and 4. Scores reflect the average number of approaches that were implemented in each program component.

Of the 166 participating hospitals, 160 were linked to hospital informa-

tion provided by the American Hospital Association (AHA) for the year 2002. Five California hospitals and one New Jersey hospital could not be linked. The AHA data were used to describe hospital ownership type (government: non-federal, non-government: not for profit, investor-owned: for profit) and metropolitan statistical size in which the hospital was located.

### Data Analysis

The presence of individual workplace security program components was compared between California and New Jersey using Pearson chi-square tests. Scores for the four program components were compared using Mann-Whitney *U* tests, and

**TABLE 2**

Emergency Department Workplace Violence Training Programs, California and New Jersey

Training Component	CA (116)		NJ (50)		P Value†‡
	N	%	N	%	
Workplace violence training program	106	91.4	36	72	0.001
WPV training is required for all employees regularly assigned to the ED*	8	7.5	2	5.6	0.68
Training includes the following topics*					
Hospital safety policies and procedures	66	62.3	27	75	0.16
Aggression and violence predicting factors	88	83	29	80.6	0.73
Characteristics of aggressive and violent patients	90	84.9	30	83.3	0.82
Verbal methods to diffuse aggressive behavior	88	83	32	88.9	0.40
Physical methods to diffuse or avoid aggressive behavior	77	72.6	28	77.8	0.54
Obtaining a history from a patient with violent behavior	85	80.2	31	86.1	0.42
Techniques for restraining violent patients	63	59.4	22	61.1	0.86
Self-defense if preventive action does not work	77	72.6	31	86.1	0.10
Appropriate use of medications to subdue aggressive patients	69	65.1	22	61.1	0.66
Resources available for victims of workplace violence	62	58.5	27	75	0.08
How to report a violent event	73	68.9	25	69.4	0.94
Training program lasts more than one hour*	57	53.8	16	44.4	0.33
WPV training program designed to protect personnel, patients, and visitors from violent and aggressive behavior*	79	74.5	28	77.8	0.69
	Mean	SD	Mean	SD	P Value†‡
WPV training program score	9.35	5	7.72	5.52	0.02

\*Question applicable only if there is a workplace violence training program.

†Pearson  $\chi^2$  test.

‡Mann-Whitney *U* Test.

**TABLE 3**

Emergency Department Administrative Procedures and Policies to Prevent Workplace Violence, California and New Jersey

Administrative Component	CA (n = 116)		NJ (n = 50)		P Value <sup>  </sup>
	N	%	N	%	
Hospital has written WPV policies	108	93.1	34	68	<0.001
Policies address violence against personnel, patients, and visitors*†	53	55.2	18	52.9	0.82
Hospital has a written security plan‡§	114	98.3	47	100	0.36
Security plan is based on Cal/OSHA or OSHA Guidelines	74	64.9	13	27.7	<0.001
Security plan includes safety for personnel, patients, and visitors	99	86.8	44	93.6	0.21
Security plan includes ongoing assessment of					
Physical layout	96	84.2	41	87.2	0.62
Staffing	91	79.8	43	91.5	0.07
Security personnel availability	90	78.9	47	100	0.001
Policy and training related to violence	95	83.3	46	97.9	0.011
Individuals in charge of the security plan are trained in					
Role of security in hospital operations	99	86.8	47	100	0.009
Hospital organization	97	85.1	47	100	0.005
Security equipment and procedures	98	86	47	100	0.007
Handling disturbed patients, visitors, and employees	97	85.1	45	95.7	0.06
Emergency preparedness	100	87.7	47	100	0.01
Reporting	92	80.7	43	91.5	0.09
Hospital has a safety committee that includes ED staff‡	99	85.3	45	95.7	0.06
ED has procedures for communicating patient risk for violence	34	29.3	7	14	0.036
Hospital has policy requiring reporting of violent events†	77	75.5	14	28	<0.001
Hospital tracks violent events to include in security plan‡	96	82.8	40	85.1	0.71
Reporting of assaults and batteries to law enforcement within 72 hr‡	90	77.6	11	23.4	<0.001
	Mean	SD	Mean	SD	P Value¶
WPV Administrative Policies and Procedures Score	17.23	2.49	15.36	1.87	<0.001

\*Question applicable only if the hospital has written WPV policies.

†Question was added after 16 hospitals in CA had been interviewed; these were excluded.

‡Information not available for 3 hospitals that did not respond to the security director interview.

§Question applicable only if hospital had a written security plan.

||Pearson  $\chi^2$  test.¶Mann-Whitney *U* Test.

correlations were calculated with Spearman's Correlation Coefficients. Scores were compared based on hospital characteristics including size, type, ownership, and emergency department volume. Changes in scores over the project period were examined. One-way analysis of variance (ANOVA) tests were used to compare scores between hospital types

within each state. In order to adjust for multiple comparisons and minimize type 1 errors, Bonferroni corrections were used. Workplace violence prevention program scores did not change over the study period overall or for three of the four components; there was a statistically significant increase in the score for security components. We examined

the distribution of hospital enrollments and found them to be similar in both states, and thus we did not control for year of enrollment in the analysis.

## Results

### Workplace Violence Training

California hospital emergency departments were significantly more likely than were New Jersey emergency departments to provide workplace violence training to employees ( $P = 0.001$ ). Over 91% of California (CA) hospital emergency departments provided workplace violence training to emergency department employees, which is a requirement of the CA Hospital Security Act (Table 2). Although New Jersey (NJ) has no legislative training requirements, 72.0% of hospitals provided workplace violence training.

The act requires that all employees who regularly work in the emergency department (ED) participate in workplace violence (WPV) training. This level of training was extremely rare, found in only 7.5% of CA and 5.6% of NJ hospitals. Physicians were the most likely employee category to be excluded from required training and were not required to attend training in 59% of CA and 70.7% of NJ hospitals. Clerical staff was excluded from 43.9% of NJ programs, but only 8.3% of CA programs.

No workplace violence training program included all of the topics specifically required in the act or guidelines, and there were no significant differences between CA and NJ in the presence of specific topics among hospitals that had training programs. The most common topic in CA was the identification of characteristics of aggressive and violent patients (84.9% of hospitals with a program), whereas in NJ the most common topic was the use of verbal methods to diffuse aggressive behavior (88.9%). Training in specific hospital safety policies and procedures was included in only 75% of NJ and



**TABLE 4**

Emergency Department Environmental and Security Measures to Prevent Workplace Violence, California and New Jersey

	CA (n = 116)		NJ (n = 50)		P Value§
	N	%	N	%	
Environmental components					
Hospital has surveillance cameras and/or mirrors	103	88.8	45	90	0.81
ED has eliminated areas where employees work alone*	9	8.8	0	0	0.03
ED has an individual alarm system	89	76.7	35	70	0.36
ED has good lighting and visibility	20	17.2	6	12	0.39
ED uses procedures to control entry and exit	47	40.5	11	22	0.02
ED has eliminated areas where staff can become isolated and overcome	24	20.7	9	18	0.69
	Mean	SD	Mean	SD	P Value
WPV environmental components score (N = 152)	2.37	1.10	2.12	1.00	0.15
	N	%	N	%	P Value§
Security Components					
Hospital has security personnel†	105	90.5	47	100	0.03
Security personnel are trained in‡					
Hospital operations	58	50	25	53.2	0.71
Violence and aggression predicting factors	90	77.6	42	89.4	0.08
Management of violent disturbances	8	6.9	5	10.6	0.42
	Mean	SD	Mean	SD	P Value
WPV security components score (N = 163)‡	2.25	0.99	2.53	0.80	0.16

\*Question was added after 16 hospitals in CA had been interviewed; these were excluded.

†Information not available for 3 hospitals that did not respond to the security director interview.

‡Question applicable only if hospital has security personnel.

§Pearson  $\chi^2$  test.

||Mann-Whitney U Test.

62% of CA hospitals. Over half of the training programs in CA and 44.4% of training programs in NJ lasted more than 1 hour.

Out of a total of 14 components of a workplace violence prevention training program, CA had implemented an average of 9.4 and NJ had implemented an average of 7.7 ( $P = 0.02$ ).

### Administrative Procedures and Policies

CA hospitals were significantly more likely than were those in NJ to have written workplace violence policies ( $P < 0.001$ ) (Table 3). The CA Hospital Security Act requires that policies address violence against personnel, patients, and visitors, but

only 55.2% of CA and 52.9% of NJ hospitals met this requirement. Most policies addressed only violence against personnel by patients.

Most hospitals had a written security plan and a safety committee, both of which are required for accreditation by the Joint Commission on Accreditation of Health Care Organizations. Only 64.9% of CA hospitals based their security plan on Cal/OSHA Guidelines, which is specifically required by the CA Hospital Security Act. However, only 27.7% of NJ hospitals based their plans on Federal OSHA Guidelines, which included general workplace violence guidelines prior to 2004 and health care guidelines after 2004. Slightly over half of written workplace vio-

lence policies in both states specifically mentioned violence against personnel, patients, and visitors; however, the majority of hospital security plans in both states did address all types of violence.

Security plans in NJ were more likely to include ongoing assessments of security personnel availability as well as assessments of policies and training related to violence. Personnel in charge of the security plan in NJ were more likely to be trained in the appropriate role of security in hospital operations, hospital organization, and security equipment and procedures than were those in CA.

The CA Hospital Security Act requires that all violent events be reported to local law enforcement within 72 hours, and 77.6% of CA hospitals required such reporting. In NJ, which has no specific requirements for law enforcement reporting, 23.4% of hospitals required reporting to law enforcement. Only 29.3% of the CA hospitals had procedures in place for communicating risk for violence, although such communication protocols are also required by the act. In NJ, 14% of hospitals had protocols for communicating patient risk for violence.

Out of a total of 21 workplace violence policies and procedures, CA had implemented an average of 17.2 and NJ had implemented an average of 15.4 ( $P < 0.01$ ).

### Environment

The average number of environmental approaches was similar in CA (mean = 2.4) and NJ (mean = 2.1) (Table 4). Surveillance cameras were the most common environmental feature, implemented by 88.8% of CA and 90% of NJ hospitals. Alarm systems were also common. However, less than one fifth of emergency departments in either state met all OSHA criteria for adequate lighting and visibility or for eliminating areas where staff can become isolated. Only 8.8% of hospitals in CA and no hospitals in NJ had eliminated areas where employees work

alone, which may be an impractical expectation in the emergency department setting. Only 40.5% of CA and 22% of NJ emergency departments had procedures to control for visitor and patient entry and exit. Many emergency departments had an open entrance for the public with check-in procedures only for patients, and many others had back entrances that did not have any controls (eg, locks, cameras, check-in procedures).

## Security

Security personnel were present in the majority of hospitals in both states (Table 4), but were less common in the smaller and rural hospitals in CA. More than half of the CA hospitals (56.8%), compared with 29.4% of NJ hospitals, had contract versus in-house security. Only half of the hospitals in each state trained security personnel in hospital operations, and this training was much more frequent for in-house security. The majority of hospitals in both states provided training in violence and aggression predicting factors, although this represents a serious gap for the hospitals that do not provide such training. Very few hospitals in either state trained security in the management of violent disturbances, which the guards are probably presumed to already know. Anecdotal reports from some hospitals indicated that security did not routinely try to de-escalate or diffuse a situation, but rather used force to control the situation. The average number of security approaches did not differ between states. Over the study period, security scores increased in both states.

## Overall Workplace Violence Programs

Correlations of scores among the different components of a comprehensive WPV program (training, policies, environment, and security) were low (Table 5), which indicated that the presence of a strong program in one category was largely independent of a strong program in a different category. The strongest

correlation was between administrative policies and procedures and security in both CA ( $r^2 = 0.24$ ,  $P < 0.05$ ) and NJ ( $r^2 = 0.44$ ,  $P < 0.01$ ). Some correlations were negative, indicating that the presence of a strong program in one category was negatively associated with a strong program in another. In CA, for example, a higher score in WPV training was associated with a lower score in security components ( $r^2 = -0.10$ ). In NJ, a higher score in environmental components was associated with a lower score in administrative and policy components ( $r^2 = -0.09$ ).

## Hospital Factors Associated With WPV Program Scores

Hospital size, type, and ED volume were not related significantly to any of the WPV program scores in New Jersey (Table 6). In California, administrative policies ( $P = 0.011$ ) and security component scores ( $P = 0.002$ ) were lower in government, non-federal hospitals as compared with non-government, not for profit and investor-owned, for profit hospitals. Scores for the environment program were lower in hospitals with a lower patient volume (0–75 patients seen on a weekend day) than were scores for those with higher patient volumes (76–150 patients or >150 patients) ( $P = 0.029$ ). Scores for workplace violence training, administrative policies, and security com-

ponents tended to increase with greater metropolitan size ( $P < 0.03$ ).

## Discussion

Hospitals in both states had implemented a variety of methods to reduce workplace violence. The California Hospital Security Act, in conjunction with the Cal/OSHA Hospital Security Guidelines, may have led to improved programs, especially with regard to the training and policies and procedures components. The states showed no differences in security or environmental approaches.

Despite the presence of many types of workplace violence prevention program approaches, there were several noteworthy gaps found in both states. Nearly half of the training programs lasted 1 hour or less, which is insufficient to cover all the necessary material. It was common for hospitals to use existing packaged training programs, which do not include information about the hospital's specific policies, procedures, and potential risk factors. Hospitals also failed to include many employees in the required training. Most notably, physicians were often excluded from training despite the high frequency of verbal threats and physical assaults that they report.<sup>6</sup> Physicians are the most expensive time resource in the ED. However, most patients are in the ED to receive

**TABLE 5**  
Correlations (Spearman's rho) of Points for Components of a Workplace Violence Prevention Program, California and New Jersey

	Training	Administrative/Policy	Environment	Security
California				
Training				
Administrative	0.21*			
Environment	0.13	0.18		
Security	-0.10	0.24*	0.09	
New Jersey				
Training				
Administrative	0.24			
Environment	0.03	-0.09		
Security	0.18	0.44**	0.13	

\*Significant at  $P < 0.05$ .

\*\*Significant at  $P < 0.01$ .

TABLE 6

Workplace Violence Program Component Scores by Hospital Characteristics, by State

	N	Training, Mean (SD)	Administrative/ Policy, Mean (SD)	Environment, Mean (SD)	Security, Mean (SD)
California					
Hospital size					
Trauma	19	8.68 (5.0)	16.86 (2.2)	2.43 (1.2)	2.05 (1.0)
Acute care with >300 beds	23	10.15 (5.0)	18.31 (0.9)	2.69 (1.1)	2.09 (1.0)
Acute care with <300 beds	74	9.28 (5.0)	17.06 (2.7)	2.29 (1.1)	2.35 (1.0)
Hospital control <sup>a</sup>					
Government, non-federal	23	8.61 (5.8)	15.61 (3.2)**	2.11 (1.07)	1.61 (1.23)*
Non-government, not for profit	76	9.59 (4.8)	17.47 (2.4)*	2.46 (1.08)	2.37 (0.9)*
Investor-owned, for profit	12	10.92 (3.4)	18.0 (0.6)**	2.00 (1.34)	2.67 (0.65)*
Emergency department weekend volume <sup>b</sup>					
0–75	49	9.42 (4.84)	16.77 (3.23)	2.11 (1.18) <sup>b</sup>	2.14 (1.06)
76–150	53	9.35 (5.04)	17.89 (1.14)	2.68 (0.90) <sup>b</sup>	2.34 (0.89)
>150	12	10.65 (4.60)	17.00 (2.29)	2.67 (1.00) <sup>b</sup>	2.42 (0.99)
Metropolitan statistical size					
Non-metropolitan to 250,000	19	8.58 (5.23)*	15.37 (4.55)*	1.89 (1.15)	1.63 (1.25)**
250,000–1 million	22	6.00 (5.63)*	17.18 (1.53)*	2.32 (0.99)	2.32 (0.89)**
1 million–2.5 million	51	10.44 (4.29)*	17.93 (1.31)*	2.42 (1.03)	2.45 (0.85)**
≥2.5 million	19	12.09 (2.24)*	17.38 (1.85)*	2.77 (1.42)	2.21 (1.08)**
New Jersey					
Hospital size					
Trauma	10	7.6 (6.38)	16.11 (1.53)	2.30 (0.82)	2.78 (0.66)
Acute care with >300 beds	10	8.2 (5.80)	15.22 (1.98)	2.30 (1.41)	2.33 (0.86)
Acute care with <300 beds	30	7.6 (5.33)	15.17 (1.92)	2.00 (0.91)	2.52 (0.82)
Hospital control <sup>a</sup>					
Government, non-federal	1	13.00	15.00	2.00	2.00
Non-government, not for profit	47	7.91 (5.4)	15.32 (1.9)	2.17 (1.0)	2.55 (0.8)
Investor-owned, for profit	1	0	17.00	0	3.00
Emergency department weekend volume <sup>b</sup>					
0–75	12	5.25 (5.57)	14.67 (1.96)	2.25 (0.96)	2.33 (0.88)
76–150	29	8.27 (5.49)	15.37 (1.75)	1.97 (0.98)	2.52 (0.80)
>150	9	9.22 (5.09)	16.38 (1.84)	2.44 (1.13)	2.88 (0.64)
Metropolitan statistical size					
Non-metropolitan to 250,000	0	—	—	—	—
250,000–1 million	17	6.17 (6.16)	15.53 (1.46)	2.41 (1.00)	2.65 (0.86)
1 million–2.5 million	24	9.29 (4.65)	15.64 (2.10)	1.96 (1.08)	2.55 (0.86)
≥2.5 million	8	7.12 (5.89)	14.00 (1.73)	2.00 (0.75)	2.29 (0.49)

<sup>a</sup>Excludes 5 hospitals in CA and 1 hospital in NJ that could not be linked to data from the American Hospital Association data (year 2002).<sup>b</sup>ED volume is defined as average number of patients per weekend day.\* $P < 0.01$ .\*\* $P > 0.01$ ,  $P < 0.03$ .

physician services, and a physician who does not adequately identify and respond to a potentially aggressive patient may exacerbate the situation. Effective and efficient methods to provide WPV training for physicians are needed.

Nearly one quarter of training programs and nearly half of all written policies and procedures focused exclusively on violence by patients against employees. These hospitals lacked a focus on employee-on-employee or employee-on-patient violence, robbery and theft (such as theft

of drugs or hospital or employee property), and domestic violence.

Correlations in the scores in the four workplace violence prevention program components indicated that having a high score in one component was largely unrelated to having high scores for other components. In this sample of hospitals, the overall workplace violence prevention programs were often uncoordinated. Anecdotal evidence from visits with these hospitals indicated that programs largely emerged from the efforts of relatively few individuals,

and were often led by one champion within the hospital. These individuals most often effected change of the components under their jurisdiction. For example, nurses who oversaw patient care championed training programs, security and risk assessment personnel supported physical security, and human resources and administrators focused on policies and procedures.

This study has several limitations. Much of the information was collected through self-report, which could lead to reporting bias and mis-

classification of the presence of workplace violence program components. However, this bias and resulting misclassification was reduced as much as possible by collecting data from a number of sources, including emergency department nurse managers, security and risk management personnel, as well as an on-site walk-through and review of written training programs and policies. Study information was collected over a 4-year period, and trends in workplace violence prevention program components could be different over this time period. No differences in the program scores were found between the study years, but the sample of hospitals for each year may be too small to show annual changes. Although the hospital samples represented all hospitals in their respective states, the two states included in this study may not be representative of hospitals throughout the nation. In addition, the hospitals in CA and NJ are not necessarily comparable to each other. For example, NJ had no licensed rural hospitals, whereas approximately 10% of eligible hospitals in CA were rural.

The study collected information about the presence of different workplace violence prevention components but did not assess the quality of these components. For example, we measured the existence of certain policies but not the level of awareness or enforcement of the policy.

Many factors may have influenced workplace violence prevention programs in both states. For example, all hospitals are required to have written security policies for accreditation by the Joint Council on Accreditation of Health Care Organizations. In addition, many hospitals have received funding through the Health Research

and Services Administration (HRSA) National Bioterrorism Hospital Preparedness Program (NBHPP, <http://www.hrsa.gov/bioterrorism/>) to improve bioterrorism response following the September 11, 2001 terrorist attacks in New York City and Washington, DC. These programs were likely to influence the hospital's security program, and we found no differences between the two states in regard to the number of security or environmental approaches implemented. These programs would be less likely to influence workplace violence training or policies, components for which we did find statistically significant differences between the states. We did find a statistically significant increase over the study period in the scores for the security component, but no other components. This may indicate that improved security resulted from sources unrelated to workplace violence.

Although legislation is one method of requiring hospitals to implement workplace violence programs, legislation is often ineffective in the absence of enforcement. To date, no California hospitals have been cited for violations of the Hospital Security Act (Dr Robert Harrison, Director, Occupational Health Branch, California Department of Health Services, personal communication, September 2006). Although NJ does not have specific workplace violence legislation, the Department of Health and Senior Services employs two staff members to monitor hospital security in response to terrorist threats. No NJ hospitals have been identified as having poor performance (Dr James Blando, Research Scientist, New Jersey Department of Health and Senior Services, personal communication, June 2006). States

that are interested in enacting security legislation should acknowledge the variance in hospital environments and require that hospitals design programs that are specific to their needs. Such legislation is likely to have a much greater impact when enforced. A growing evidence base of effective strategies should prove to be helpful for hospital safety committees, management, security and risk assessment personnel, and interested employees in making the best decisions regarding cost-effective security components for their specific hospital environments.

## Acknowledgment

This project was funded by the CDC/National Institute for Occupational Safety and Health (R01 OH007934). The authors would like to acknowledge Eddy A. Bresnitz for his efforts on this project.

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