Workplace Violence Prevention Programs in Psychiatric Units and Facilities

Corinne Peek-Asa, Carri Casteel, Veerasathpurush Allareddy, Maryalice Nocera, Suzi Goldmacher, Emily OHagan, James Blando, David Valiante, Marion Gillen, and Robert Harrison

Psychiatric health care providers have high rates of workplace violence victimization, yet little is known about the strategies used by facilities to reduce violence. This study compared workplace violence prevention (WVP) programs in psychiatric units and facilities in California and New Jersey. Information was collected through interviews, a facility walk-through, and a review of written policies and training material. A similar proportion of hospitals in both states had WVP training programs. A higher proportion of hospitals in California had written WVP policies, and a higher proportion of New Jersey hospitals had implemented environmental and security modifications to reduce violence. Legislation is one of many potential approaches to increase workplace violence prevention programs in health care settings.
© 2009 Elsevier Inc. All rights reserved.

NURSES HAVE AMONG the highest rates of nonfatal workplace assault and violent victimization found in the health care setting (Duhart, 2001; Lanza, Zeiss, & Rierdan, 2006; Winstanley & Whittington, 2004). The Department of Justice

From the Department of Occupational and Environmental Health, University of Iowa, Iowa City, IA, USA; Injury Prevention Research Center, University of North Carolina, Chapel Hill, NC, USA; California Department of Health Services, San Francisco, CA, USA; School of Nursing, University of California, San Francisco, CA, USA; New Jersey Department of Health and Senior Services, Trenton, NJ, USA.

Corresponding Author: Corinne Peek-Asa, MPH, PhD, University of Iowa, Department of Occupational and Environmental Health, 100 Oakdale Blvd. #114 IREH, Iowa City, IA 52242.
E-mail address: corinne-peek-asa@uiowa.edu

reports 21.9 violent victimizations per 1,000 nurses per year between 1993 and 1999, which is twice the rate reported by other medical professionals (Duhart, 2001). In a 2001 survey of 4,826 nurses conducted by the American Nurses Association, 17% reported that they had been physically assaulted, and 57% reported that they had been threatened or verbally abused within the past year (Gilmore-Hall & Worthington, 2001). Furthermore, fewer than 20% of the nurses surveyed reported that they felt safe in their current work environments. Safety is an important priority for the nursing industry.

Psychiatric nurses report among the highest violent victimization rates of all types of nurses (Islam, Edla, Mujuru, Doyle, & Ducatman, 2003; Peek-Asa, Howard, Vargas & Kraus, 1997). A multiregional study of 557 nursing staff members from various acute psychiatric settings showed that 76% of the respondents reported that they were assaulted at least once (Poster & Ryan, 1994). According to the National Crime Victimization Survey, mental health

workers experienced the highest rate of simple assaults in the health care sector, with 43.2 assaults per 1,000 workers. A study of Minnesota nurses found that nurses working in psychiatric departments had nearly a twofold increase in risk of assault when compared with nurses in other in-house specialties (Gerberich et al., 2005).

In response to a growing awareness of violence against health care workers, the State of California implemented two initiatives to reduce workplace violence in health care facilities. The first initiative was the 1993 release of the California Occupational Safety and Health Administration's (Cal/OSHA's) "Guidelines for Security and Safety of Health Care and Community Service Workers (Cal/OSHA, 1993)." The Cal/OSHA's guidelines provide a comprehensive list of intervention approaches to reduce workplace violence and offer a strategy to design, implement, and evaluate a comprehensive workplace violence prevention (WVP) program. Federal Occupational Safety and Health Administration (OSHA) implemented similar guidelines in 1994 (OSHA, 1994). The second state-based initiative was the passage of the California Hospital Safety and Security Act (Assembly Bill 508) in 1993. The Hospital Security Act required licensed acute care and psychiatric facilities to implement a comprehensive program by July 1, 1995. The combination of these two initiatives is unique to California. Both initiatives include components of training, policies and procedures, environmental control, and security.

No systematic studies of psychiatric WVP programs have been conducted to examine compliance to these initiatives. This study compares WVP measures in a randomly selected and representative sample of psychiatric units and facilities (PU/Fs) in California and New Jersey. New Jersey was chosen as a comparison state because it does not have specific workplace violence legislation for hospitals and most of the state's hospitals are the jurisdiction of the Federal OSHA.

METHODS

Study Design

This study was a cross-sectional survey of WVP programs in PU/Fs. The purpose of the study was to compare the WVP programs in a sample of PU/Fs in New Jersey and California. The units and facilities were compared on four components: training, policies and procedures, environmental safeguards, and security.

Study Population

Psychiatric units within acute care hospitals and psychiatric facilities were included in this analysis. To generally represent hospitals by level of care and size, acute care hospitals with a general psychiatric unit were stratified into the categories of trauma centers, acute care hospitals with 300 beds or more, and acute care hospitals with fewer than 300 beds (Peek-Asa et al., 2007). Hospitals within these categories were randomly selected from a complete census of acute care and psychiatric facilities obtained from the California Office of Statewide Health Planning and Development and the New Jersey Department of Health and Senior Services.

Data Collection of Acute Care and Psychiatric Facilities

Data of acute care and psychiatric facilities were obtained from the California Office of Statewide Health Planning and Development and the New Jersey Department of Health and Senior Services.

Data Collection of Each Facility

Information from each facility was collected through a review of written WVP training materials, policies, and procedures; semistructured interviews with the unit's nurse manager and two unit staff members; and an on-site environmental assessment. The semistructured interviews included specific questions on existing program components, with many open-ended questions to identify additional components and strategies. Responses to open-ended questions were double coded based on the most frequently listed responses. Additional information, either through an in-person or telephone semistructured interview, was collected from the individual in charge of the security program, which in most hospitals was either the risk manager or security director.

If the hospital had more than one psychiatric unit, information about the unit that served a general psychiatric population was collected. In some cases, information regarding specialized services was collected when this specialized care was provided within the general psychiatric unit.

Interviews included information about the unit's or facility's WVP training program, violence prevention policies, reporting systems for violent events, security personnel, and security equipment.

Specific questions were developed based on recommendations in the Cal/OSHA's guidelines and requirements for programs as defined in the California Hospital Safety and Security Act (Peek-Asa et al., 2007). Specific elements for training included whether or not the unit provided workplace violence training, who was required to attend the training, if the training occurred on a recurring basis, length of the training, the types of violence included in the training, and whether or not the training included the topics identified in the two initiatives. Elements of the administrative policies and procedures component included whether or not the unit had written workplace violence policies and procedures, the types of violence covered by these policies and procedures, if psychiatric unit staff members were included in a hospital safety committee, if there were written guidelines about communicating risk of violence, if the unit required reporting and tracking of violent events, and whether or not the written policies and procedures addressed specific topics identified in the two initiatives. In addition, we asked if units were

required to report violent events to law enforcement, which is a specific requirement of the California Hospital Safety and Security Act. Environmental components included the presence of surveillance cameras, alarm systems, good lighting and visibility, and monitoring of hallways and entrances and exits and whether or not the unit had eliminated areas where staff could be isolated and assaulted. Security component elements included whether or not the unit had security guards and, if so, if these guards were trained in hospital operations; identification of predicting factors for violence; and management strategies for potential aggressors.

To determine if hospital characteristics were related to WVP programs, the investigators linked participating hospitals to a database maintained by the American Hospital Association. The American Hospital Association database includes information on hospital ownership, patient volume, and metropolitan size. Of the 83 hospitals that participated in the study, 72 participating hospitals were identified in the American Hospital Association data. Six

Table 1. Psychiatric Department Workplace Violence Training Programs, California and New Jersey

Training component	California ($n = 53$)		New Jersey ($n = 30$)		
	n	%	N	%	P value*
WVP training program [†]	51	96.2	28	93.3	.55
WVP training was required for all employees regularly assigned to the psychiatric unit or facility	2	3.9	8	28.6	.002
Among departments with training programs, training included the following topics:					
Hospital safety policies and procedure	42	82.4	22	78.6	.68
Identification of predicting factors for aggression and violence	48	94.1	26	92.9	.82
Characteristics of aggressive and violent patients	47	92.2	26	92.9	.61
Verbal methods to diffuse aggressive behavior	48	94.1	24	85.7	.20
Physical methods to diffuse or avoid aggressive behavior	48	94.1	24	85.7	.20
Obtainment of history from a patient with violent behavior	37	72.6	19	67.9	.66
Techniques for restraining violent patients	47	92.2	25	89.3	.66
Self-defense if preventive action does not work	45	88.3	23	82.1	.45
Appropriate use of medications to subdue aggressive patients	43	84.4	24	85.7	.86
Resources available for victims of workplace violence	39	76.5	16	57.1	.07
Reporting of a violent event	45	88.2	24	85.7	.74
Recurring training program that lasted more than 1 hour	48	94.1	24	85.7	.20
WVP training program designed to protect personnel, patients, and visitors from violent and aggressive behavior	44	86.3	23	82.1	.62

	California ($n = 53$)		New Jersey ($n = 30$)		
	M	SD	M	SD	P value[‡]
WVP training program score ($n = 83$)	11.93	3.86	11.20	4.55	.41

* Pearson chi-square test.
[†] All subsequent proportions are reported for those departments that had a WVP training program.
[‡] Mann–Whitney U test.

hospitals in California and 5 hospitals in New Jersey could not be found in this database.

Analytic Approach

A scoring system was developed to identify the presence of specific WVP program elements found in the California Hospital Safety and Security Act, Cal/OSHA's guidelines, and Federal OSHA's guidelines. The research team developed the scoring system by itemizing all required elements of the California Hospital Safety and Security Act and specific elements mentioned in both the Cal/OSHA's and Federal OSHA's guidelines. Elements were assigned a score of 0 if not present and 1 if present. WVP programs

were assessed in four categories: workplace violence training (15 points), administrative approaches and policies (20 points), security personnel (4 points), and environmental approaches (5 points). Each program element contributed 1 point to the score. Equal weights were assigned because each element was required or recommended in the statewide initiatives. The specific categories for which points were assigned are included in the tables that address training, policies and procedures, environmental control, and security. New Jersey hospitals would have no specific requirement to enact workplace security measures as specified by the California Hospital Safety and Security Act. However, they have

Table 2. Psychiatric Department Administrative Procedures and Policies to Prevent Workplace Violence, California and New Jersey

Administrative component	California (n = 53)		New Jersey (n = 30)		
	n	%	n	%	P value*
Psychiatric department has written WVP policies	52	98.1	24	80	.004
Among departments with policies, policies addressed violence against personnel, patients, and visitors[†]	25	61	17	70.8	.42
Psychiatric department has a written security plan[‡,§]	52	98.1	26	96.3	.62
Security plan was based on Cal/OSHA's or OSHA's guidelines	37	71.2	9	34.6	.002
Security plan included safety for personnel, patients, and visitors	40	76.9	25	96.2	.03
Security plan included ongoing assessment of the following:					
Physical layout	39	75	23	88.5	.16
Staffing	39	75	23	88.5	.16
Security personnel availability	37	71.2	26	100	.002
Policy and training related to violence	36	69.2	25	96.2	.007
Individuals in charge of the security plan were trained in the following:					
Role of security in hospital operations	38	73.1	26	100	.003
Hospital organization	39	75	26	100	.005
Security equipment and procedures	40	76.9	26	100	.008
Handling of disturbed patients, visitors, and employees	39	75	26	100	.005
Emergency preparedness	41	78.8	26	100	.01
Reporting of incidents of violence	35	67.3	25	96.2	.004
Hospital had a safety committee that includes psychiatric department staff[‡]	25	47.2	21	77.8	.009
Psychiatric department had procedures for communicating patient risk of violence	23	43.4	4	13.3	.005
Hospital had policy requiring reporting of violent events[†]	25	59.5	6	20	.001
Hospital tracked violent events[‡]	38	71.7	23	85.2	.18
Hospital reported assaults and batteries to law enforcement within 72 hours[‡]	32	60.4	6	22.2	.001

	California (n = 53)		New Jersey (n = 30)		
	M	SD	M	SD	P value[‖]
WVP administrative policies and procedures score (n = 69)	16.57	3.06	15.15	3.61	.017

* Pearson chi-square test.
[†] Question not applicable to pilot hospital.
[‡] Security Information not available for 3 hospitals.
[§] Subsequent proportions are reported for those hospitals that had written security plan.
[‖] Mann–Whitney U test.

Table 3. Psychiatric Department Environmental and Security Measures to Prevent Workplace Violence, California and New Jersey

Environmental components	California (n = 53)		New Jersey (n = 30)		P value*
	n	%	n	%	
Psychiatric department had surveillance cameras and/or mirrors	48	90.6	30	100	.08
Psychiatric department had an alarm system	33	62.3	22	73.3	.30
Psychiatric department had good lighting and visibility	2	3.8	5	16.7	.09
Psychiatric department had monitoring of hallways[†]	22	52.4	24	80	.016
Psychiatric department had eliminated areas where staff can become isolated and overcome	5	9.4	8	26.7	.038

	California (n = 53)		New Jersey (n = 30)		P value[‡]
	M	SD	M	SD	
WVP program environmental components score (n = 83)	2.12	0.67	2.97	0.66	<.001

Security components	California (n = 53)		New Jersey (n = 30)		P value*
	n	%	n	%	
Psychiatric department had security personnel[†]	35	66	22	81.5	.14
Security personnel were trained in the following:[†]					
Hospital operations	20	37.7	16	59.3	.06
Identification of predicting factors of violence and aggression	38	71.7	23	85.2	.18
Management of violent disturbances	7	13.2	4	14.8	.84

	California (n = 53)		New Jersey (n = 30)		P value[‡]
	M	SD	M	SD	
WVP security components score (n = 80)[†]	1.89	0.99	2.41	0.93	.036

*Pearson chi-square test.
[†] Security Information not available for 3 hospitals.
[‡] Mann–Whitney U test.

other incentives to implement workplace violence policies, such as for hospital accreditation through The Joint Commission. New Jersey serves as an indicator of what hospitals are likely to implement in the absence of specific statewide legislation.

The presence of individual WVP program components was compared between California and New Jersey using Pearson chi-square tests. Scores for each WVP program category were compared using Mann–Whitney U tests, and correlations of scores by category were examined using Spearman correlation coefficients. Scores were compared based on hospital characteristics, including type (trauma, acute care with 300 beds or more, acute care with less than 300 beds, and psychiatric facilities), ownership (government, nonfederal; nongovernment, not for profit; and investor owned, for profit), psychiatric department volume (based on the number of beds), and metropolitan location (<1 million, 1 million to <2.5 million, and 2.5 million and over). One-way analysis of variance tests were used to compare scores between the different hospital categories within each state. To adjust for multiple comparisons and minimize Type 1 errors, the investigators employed Bonferroni corrections. A P value of .05 was set to be statistically significant. All tests were two sided.

RESULTS

Study Sample

From a total of 163 eligible hospitals in California, the investigators invited 60 hospitals to participate and 53 agreed, for a response rate of 94.6% (Table 4). Trauma centers had the lowest response rate at 85.7%, whereas large (those with ≥300 beds) and small (<300 beds) acute care hospitals had a response rate of 100%. The response rate for stand-alone psychiatric facilities was 94.7%.

From a total of 54 licensed hospitals in New Jersey, the investigators invited 45 hospitals to participate and 30 agreed, for a response rate of 66.7%. Response rate was lowest for stand-alone psychiatric facilities (45.5%) and highest for trauma centers (87.5%).

Table 4. Distribution of Licensed Hospitals and PU/Fs' Participation Rates by Hospital Type, 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*	Statewide licensed hospitals, n (%)	Hospitals randomly selected to participate	Participating hospitals, n (%)	Participation rate among sampled hospitals*
Total	163	56	53	94.6	54	45	30	66.7
Psychiatric unit in trauma hospital	26	14	12 (22.6)	85.7	8	8	7 (23.3)	87.5
Psychiatric unit in general acute care facility with more than 300 beds	29	11	11 (20.8)	100	14	11	7 (23.3)	63.6
Psychiatric unit in a general acute care facility with 300 or fewer beds	48	12	12 (22.6)	100	21	15	11 (36.7)	73.3
Psychiatric facilities	60	19	18 (34.0)	94.7	11	11	5 (16.7)	45.5

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

Workplace Violence Training

Over 96% of California hospital PU/Fs provided WVP training to employees, which is a requirement of the California law (Table 1). Although New Jersey has no legislated training requirements, 93.3% of hospitals provided WVP training.

Only 3.9% of California and 28.6% of New Jersey hospitals required all employees regularly assigned to the PU/Fs to undergo WVP training. Physicians were the most common occupational title to be excluded from required training and were not required to attend training in 75% of California and 55% of New Jersey PU/Fs. Clerical staff was excluded from 20% of California and 27% of New Jersey PU/Fs.

No WVP training programs in either state included all of the training components specified in the law, and there were no significant differences in the presence of different training program components between states. The most common training components in California were the identification of aggression and violent prediction factors, verbal methods to diffuse aggressive behavior, and physical methods to diffuse or avoid aggressive behavior (94.1% of hospitals with a program). In New Jersey, the most common training components (92.9%) were the identification of characteristics of aggressive and violent patients and factors that were predictive of aggression and violence. Training about resources available for victims of workplace violence was included in only 76% of California and 57% of New Jersey hospitals. In addition, fewer than 75% of California and New Jersey hospitals included training for obtaining histories from patients exhibiting violent behavior.

Out of a total of 15 possible points, the mean score for the presence of WVP training components was 11.93 for California and 11.20 for New Jersey, which showed no statistical difference ($P = .41$).

Administrative Procedures and Policies

California PU/Fs were significantly more likely than New Jersey PU/Fs to have written workplace violence policies ($P = .004$; Table 2). Among those hospitals with policies, however, a higher proportion in New Jersey (70.8%) than that in California (61%) included policies to address violence against personnel, patients, and visitors, which is a specific

requirement of the California Hospital Safety and Security Act.

Most hospitals had a written security plan and a safety committee, both of which are required for accreditation by The Joint Commission. Only 71.2% of California hospitals based their security plan on Cal/OSHA's guidelines, which is specifically required by the California Hospital Safety and Security Act. However, only 34.6% of New Jersey hospitals based their plans on Federal OSHA's guidelines. Security plans in California hospitals were less likely than those in New Jersey hospitals to include ongoing assessments of security personnel availability and policies and training related to violence, despite the requirement of these assessments in the California Hospital Safety and Security Act. Personnel in charge of the security plan in New Jersey were more likely to be trained in the role of security in hospital operations, hospital organization, and security equipment and procedures than personnel in California. California PU/Fs were significantly more likely to have policies that required reporting violent events than New Jersey PU/Fs. Although required by the California Hospital Safety and Security Act, only 60.4% of hospitals in California reported incidents of assault and battery to police within 72 hours.

Fewer than half of the California hospitals included psychiatric department staff on the safety committee, which was significantly lower than that in New Jersey (78.8%). Although a significantly higher proportion of hospitals in California reported having written policies for communicating patient risk of violence, fewer than half of the hospitals in either state reported such policies. Although these hospitals may have used methods to communicate risk, such as alerting new shifts of patients that had exhibited violent or threatening behavior during the previous shifts, these activities were not addressed through policy.

Although New Jersey had a significantly higher proportion of PU/Fs with specific policy components, the overall scores for California (16.57) were significantly higher than those for New Jersey (15.15; $P = .017$). This difference is driven by the increased number of California PU/Fs that had written policies, which is not required by law in New Jersey.

Environmental Components

Surveillance cameras were the most common environmental feature, implemented by 90.6% of California and 100% of New Jersey PU/Fs. Alarm systems were also common, reported by 62.3% of California and 73.3% of New Jersey PU/Fs. However, only 3.8% of California and 16.7% of New Jersey hospitals met all Cal/OSHA's or Federal OSHA's guidelines for adequate lighting and visibility, and only 9.4% of California hospitals and 26.7% of New Jersey hospitals eliminated areas where staff can become isolated. Just over half (52.4%) of California PU/Fs and 80% of New Jersey PU/Fs had appropriate monitoring of hallways (i.e., surveillance cameras and cameras to enable visibility). The total WVP environmental component scores were significantly higher for New Jersey ($M = 2.97$) than those for California ($M = 2.12$; $P < .001$).

Security Components

Although 81.5% of New Jersey hospitals had security personnel in the PU/F, only 66% of California hospitals did. In addition, more New Jersey hospitals trained their security personnel in hospital operations, identification of predicting factors for violence and aggression, and management of violent disturbances when compared with California hospitals. The mean WVP security component scores were significantly higher for New Jersey hospitals (2.41) compared with those for California hospitals (1.89; $P = .036$).

Hospital Factors Associated With WVP Program Scores

Hospital type, ownership, psychiatric department volume, and metropolitan size were not related significantly to any of the WVP program scores in New Jersey, with the exception of large acute care hospitals that had higher policy and environmental scores than the stand-alone psychiatric facilities (Table 5). In California, policy ($P = .02$) and environment component scores ($P = .006$) were significantly different between hospital types. In particular, large acute care hospitals tended to have significantly higher scores when compared with stand-alone psychiatric facilities. Stand-alone psychiatric facilities had the lowest scores for all components in California.

DISCUSSION

Most hospitals in this representative sample from California and New Jersey had implemented many WVP program components in their PU/F. However,

Table 5. Workplace Violence Prevention Program Scores by Hospital Characteristics by State

	n	Training M (SD)	Administrative/Policy M (SD)	Environment M (SD)	Security M (SD)
California					
Hospital type					
Trauma	12	12.23 (3.59)	17.38 (1.99)*	2.13 (0.35)†	2.17 (0.93)
Acute care with 300 beds or more	11	13.00 (1.94)	18.71 (1.38)*	2.71 (0.48)†	2.00 (0.89)
Acute care with fewer than 300 beds	12	12.00 (4.15)	17.40 (1.95)*	2.30 (0.48)†	2.17 (0.71)
Psychiatric	18	11.05 (4.70)	14.82 (3.67)*	1.76 (0.75)†	1.44 (1.14)
Hospital ownership					
Government, nonfederal	9	13.20 (1.80)	16.40 (2.30)	2.40 (0.54)	1.78 (0.83)
Nongovernment, not for profit	29	11.72 (4.16)	16.96 (3.64)	2.21 (0.51)	1.97 (0.98)
Investor owned, for profit	9	13.00 (1.00)	15.75 (1.58)	1.75 (0.88)	2.11 (0.92)
Psychiatric department volume‡					
0–17	19	11.57 (4.14)	16.00 (4.45)	2.13 (0.64)	1.63 (0.89)
18–25	16	10.80 (5.12)	16.79 (2.35)	2.07 (0.73)	1.88 (1.20)
>25	18	13.33 (0.90)	17.00 (1.52)	2.15 (0.68)	2.17 (0.85)
Metropolitan statistical size					
Nonmetropolitan–1 million	7	12.85 (2.26)	17.43 (1.61)	1.86 (0.90)	2.14 (1.21)
1 million–2.5 million	24	11.20 (4.40)	16.63 (4.04)	2.26 (0.65)	1.79 (0.93)
2.5 million +	16	13.56 (0.72)	16.09 (1.86)	2.09 (0.30)	2.13 (0.80)
New Jersey					
Hospital type					
Trauma	7	11.42 (5.28)	16.50 (1.51)	2.86 (0.37)	2.67 (0.81)
Acute care with 300 beds or more	7	9.57 (6.24)	15.00 (2.36)	2.86 (0.90)	2.00 (0.89)
Acute care with fewer than 300 beds	11	11.00 (3.84)	15.70 (2.45)	2.82 (0.60)	2.80 (0.78)
Psychiatric	5	13.60 (0.89)	12.60 (7.05)	3.60 (0.54)	1.80 (1.09)
Hospital ownership					
Government, nonfederal	1	15.00	17.00	3.00	2.00
Nongovernment, not for profit	23	10.47 (4.98)	15.60 (2.25)	2.87 (0.69)	2.50 (0.94)
Investor owned, for profit	1	13.00	17.00	3.00	3.00
Psychiatric department volume‡					
0–17	7	10.28 (4.68)	14.43 (1.61)	2.57 (0.53)	2.29 (0.75)
18–25	11	9.18 (5.84)	15.63 (2.44)	3.00 (0.77)	2.38 (0.91)
>25	12	13.58 (0.90)	15.25 (5.01)	3.17 (0.57)	2.50 (1.08)
Metropolitan statistical size					
Nonmetropolitan–1 million	5	11.40 (3.13)	15.40 (1.95)	2.80 (0.44)	2.80 (1.09)
1 million–2.5 million	17	10.53 (5.66)	15.87 (2.38)	2.88 (0.69)	2.40 (0.91)
2.5 million +	3	11.00 (2.64)	15.50 (2.12)	3.00 (1.00)	2.50 (0.70)

* Statistically significant differences in administrative and policy scores between hospital size in California (P = .012). Acute care hospitals with 300 beds or more had higher scores compared with psychiatric facilities (P = .02).

† Statistically significant differences in environmental component scores between hospital size in California (P = .007). Acute care hospitals with 300 beds or more had higher scores compared with psychiatric facilities (P = .006).

‡ Psychiatric department volume is defined on the basis of the number of beds.

there was wide variation in the components that were implemented. This variation was also found in a study of over 100 London hospitals that studied policies for patient screening, alarms, entry and exit control, and use of security personnel (Bowers et al., 2002). The results of this study point to several trends that could help hospital facilities evaluate WVP programs.

Although most hospitals did have formal training programs, several important gaps were found. Very few PU/Fs provided WVP training for all staff, and physicians and clerical staff were the least likely to be included. Developing appropriate training modules for all staff will help ensure uniform knowledge and consistent response.

Training topics were inconsistent across hospitals in both states, even though California hospitals have training requirements stated in the legislation. Previous research to evaluate training curricula identified that the most common training components were identification of causes of aggression, communicating aggression, and physical techni-

ques for protection (Farrell and Cubit, 2005; Morrison & Love, 2003). The least common training components included review of policies, protocols, and the environment; pharmacological management of aggression; and the use of restraints. This study found similar trends in the topics included in WVP training. The three topics identified in the California Hospital Safety and Security Act and the Cal/OSHA's and OSHA's guidelines that were least likely to be included in training were resources available for victims of workplace violence, obtainment of history from a patient with violent behavior, and a review of hospital policies and procedures. Although these skills may be taught informally on the job, formal training programs did not include these important topics. Training programs should be augmented to include these important topics as they are essential for successful programs. For example, Whittington and Wykes (1992) examined the level of support provided for English psychiatric nurses who were assaulted by clients while working. Fifty-four percent of the victims were not satisfied with the support they received.

A higher proportion of California hospitals, in comparison with that of New Jersey hospitals, had written WVP policies, although all hospitals should have written policies and procedures. A study of Minnesota nurses found that the presence of WVP policies was associated with reduced odds of violent victimization (Nachreiner et al., 2005). This study of Minnesota nurses also identified increased risk of workplace assault in environments that were not brightly lit and decreased risk when a personal alarm was present (Gerberich et al., 2005).

A higher proportion of New Jersey hospitals, in comparison with that of California hospitals, had incorporated environmental interventions, although gaps in environmental approaches were found in both states. This study found uniformly good lighting and visibility in only 3.8% of California and 16.7% of New Jersey PU/Fs. Most PU/Fs had areas in which staff could become isolated with aggressive patients. Integrating environmental controls to increase lighting and visibility and to better manage entrance, exits, and vulnerable areas might be an important avenue to augment a heavy reliance on security equipment (e.g., cameras). The California legislation may have provided an effective incentive for hospitals to develop written policies, but other factors may

have more influence on training, security, and environmental approaches to WVP. For example, many hospitals received funding through the Health Research and Services Administration National Bioterrorism Hospital Preparedness Program (NBHPP, http://www.hrsa.gov/bioterrorism/) to improve bioterrorism preparedness and response after the September 11, 2001 terrorist attacks. This funding may have differentially affected the purchasing of security equipment over training and policy development. Currently, several states, including New Jersey and New York, have either just enacted or are considering legislation that addresses violence in health care facilities. Such legislation may be one of many types of approaches that increase WVP program components in hospitals but is unlikely to work in isolation and without efforts to ensure compliance.

The legislation may have had a stronger influence on larger hospitals, which were the most likely to have written policies and procedures and environmental components. Stand-alone facilities had the lowest scores for all components. Larger hospitals may have higher rates of violence for many reasons: (a) increased employee and patient numbers, (b) a higher risk patient population, or (c) location in neighborhoods with a higher rate of crime. It is not clear why stand-alone facilities have lower scores. If the strongest influence for implementing a WVP program comes from a central hospital administration, their lack of physical association with a larger hospital may hinder the development of a comprehensive program.

This study had a number of strengths. First, it was one of the first studies to examine a sample of WVP programs in PU/Fs. This is especially significant because PU/Fs have been shown to have some of the highest rates of workplace violence in the health care industry (Islam et al., 2003; Peek-Asa et al., 1997). Second, multiple methods were used to collect a wealth of data from each participating hospital, ensuring that the WVP programs were thoroughly examined. Last, the distribution of hospitals studied was representative of other hospitals within their respective states, thereby contributing to the generalizability of the study findings.

This study also had several limitations. Much of the information was collected through self-report, which could lead to reporting bias and misclassification of the presence of WVP program compo-

nents. However, this potential bias and resulting misclassification were reduced as much as possible by collecting data from a number of sources, including nurse managers, security and risk management personnel, and an on-site walk-through and review of written training programs and policies. Bias could also be introduced through the differential response rates between the two states. Sampling was conducted so that both state samples were representative of the overall state hospital distribution, but there may be systematic differences between participating and nonparticipating hospitals. Study information was collected over a 4-year period, and trends in WVP 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. The study collected information about the presence of different WVP components but did not assess the quality of these components. For example, the presence of certain policies was measured, although the level of awareness or enforcement of the policy was not.

CONCLUSION

These findings indicate that PU/Fs have addressed the issue of violence by implementing WVP programs. However, addressing gaps in these programs may have promise in reducing violence and its consequences to employees and the organization. In particular, gaps should be addressed to balance and integrate different components of the WVP. Hospitals that were strong in one area, such as training, were not more likely to be strong in another area, such as policies and procedures. A comprehensive approach that coordinates the components of training, policies and procedures, environmental approaches, and security is likely to be achieved only through multidisciplinary and representative input from the staff and management. Legislation may be one approach to increase implementation of WVP program components, but it is unlikely to be successful without enforcement. Other approaches, such as licensing requirements through agencies such as The Joint Commission and Centers for Medicare and Medicaid Services; better information about best practices; encouragement from upper administration; and access to resources are also important.

REFERENCES

Bowers, L., Crowhurst, N., Alexander, J., Callaghan, P., Eales, S, Guy, S., et al. (2002). Safety and security policies on psychiatric acute admission wards: Results from a London-wide survey. *Journal of Psychiatric and Mental Health Nursing*, *9*, 427−433.

California Occupational Safety and Health Administration (Cal/ OSHA). (1993). *Guidelines for security and safety of health care and community service workers*. San Francisco, California: California Department of Industrial Relations. Retrieved March 25, 2008 from *http://www. dir.ca.gov/DOSH/dosh_publications/hcworker.html*.

Duhart, D. T. (2001). *Violence in the workplace, 1993-1999. Bureau of Justice statistics. Special report 190076*. Washington, DC: U.S. Department of Justice.

Farrell, G., & Cubit, K. (2005). Nurses under threat: A comparison of content of 28 aggression management programs. *International Journal of Mental Health Nursing, Mar*, *14*(1), 44−53.

Gerberich, S. G., Church, T. R., McGovern, P. M., Hansen, H., Nachreiner, N. M., Geisser, M. S., et al. (2005, Sept). Risk factors for work-related assaults on nurses. *Epidemiology*, *16*(5), 704−709.

Gilmore-Hall, A., & Worthington, K. (2001). Online health and safety survey. American Nurses Association. September. Retrieved March 25, 2008 from *NursingWorld.org*.

Islam, S. S., Edla, S. R., Mujuru, P., Doyle, E. J., & Ducatman, E. M. (2003). Risk factors for physical assault: State-managed worker's compensation experience. *American Journal of Preventive Medicine*, *25*(2), 31−37.

Lanza, M. L., Zeiss, R., & Rierdan, J. (2006, Feb-Mar). Violence against psychiatric nurses: Sensitive research as science and intervention. *Contemporary Nurse*, *21*(1), 71−84.

Morrison, E. F., & Love, C. C. (2003). An evaluation of four programs for the management of aggression in psychiatric settings. *Archives of Psychiatric Nursing*, *17*(4), 146−155.

Nachreiner, N. M., Gerberich, S. G., McGovern, P. M., Church, T., Hansen, H. E., Geisser, M. S., et al. (2005, Oct). Relation between policies and work related assault: Minnesota nurses' study. *Occupational and Environmental Medicine*, *62*(10), 675−681.

Occupational Safety and Health Administration. (1994). *Guidelines for prevention workplace violence among health care and social service workers*. Washington, DC: Department of Labor. Retrieved March 25, 2008 from *http://www.osha.gov/Publications/OSHA3148/ osha3148.html*.

Poster, E. C., & Ryan, J. (1994). A multiregional study of nurses' beliefs about work safety and patient assault. *Hospital and Community Psychiatry*, *45*, 1104−1109.

Peek-Asa, C., Casteel, C., Allareddy, V., Nocera, M., Goldmacher, S., Ohagan, E., et al. (2007). Workplace violence prevention programs in hospital emergency departments.

Journal of Occupational and Environmental Medicine, *49*(7), 756−763.

Peek-Asa, C., Howard, J., Vargas, L., & Kraus, J. F. (1997). Incidence of non-fatal workplace assault injuries determined from employer's reports in California. *Journal of Occupational and Environmental Medicine*, *39*(1), 44−50.

Whittington, R., & Wykes, T. (1992). Staff strain and social support in a psychiatric hospital following assault by a patient. *Journal of Advanced Nursing*, *17*, 480−486.

Winstanley, S., & Whittington, R. (2004). Aggression towards health care staff in a UK general hospital: Variation among professions and departments. *Journal of Clinical Nursing*, *13*, 3−10.