The Journal of Emergency Medicine, Vol. 42, No. 3, pp. 329–338, 2012

0736-4679/$–see front matter

ELSEVIER

doi:10.1016/j.jemermed.2008.06.026

Violence: Recognition, Management, and Prevention

EMERGENCY DEPARTMENT SECURITY PROGRAMS, COMMUNITY CRIME, AND EMPLOYEE ASSAULTS

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□ **Abstract—Background: Violence against health care workers is a serious occupational health hazard, especially for emergency department (ED) employees. A significant degree of variability in security programs among hospital EDs is present in part due to the absence of federal legislation requiring baseline security features. Nationally, only voluntary guidelines from the Occupational Safety and Health Administration (OSHA) for the protection of health care workers exist. Objectives: The purpose of this study was to examine ED security programs and employee assault rates among EDs with different financial resources, size, and background community crime rates. Methods: This cross-sectional survey was conducted among large and small hospitals located in communities with low or high rates of community crime. Hospital financial data were collected through the state health department, and employee assault data were abstracted from hospital OSHA logs. Comparisons were made using a chi-squared or Wilcoxon test. Results: Small hospitals located in towns with low community crime rates implemented the fewest security program features despite having the second highest rate of assault-related OSHA-recordable injuries among ED employees (0.66 per 100,000 staff hours). Conclusion: Due to the highly stressful workplace characteristics of EDs, the risk of employee assault is universal among all hospital sizes in all types of communities.** © 2012 Elsevier Inc.

Keywords—violence; assault; crime; security; OSHA

This project was funded by the Centers for Disease Control and Prevention/National Institute for Occupational Safety and Health (R01 OH007934).

INTRODUCTION

Violence in the workplace is a serious occupational and public health problem. In the United States, at least one worker is killed every week and nearly 2 million are assaulted every year (1,2). Several industry sectors are at particularly high risk for violence, including the retail trade and service industries. Within the service industry, employees in the health care sector experience high rates of non-fatal assaults, with the number of non-fatal violent incidents per 1000 workers estimated at 16.2 for physicians, 21.9 for nurses, and 69.0 for mental health employees compared to a rate of 12.6 for all occupations (2–5). Injuries from non-fatal assaults are estimated to be 4 to 12 times higher among health care and social service workers when compared to the overall rate for all private sector employers in the United States (5). The Bureau of Labor Statistics Annual Survey of Occupational Injuries and Illnesses in 2000 demonstrated that the percentage of injuries from violence requiring time away from work

RECEIVED: 7 March 2008; FINAL SUBMISSION RECEIVED: 9 May 2008;
ACCEPTED: 19 June 2008

was highest in nursing homes (20%), social services (18%), and hospitals (15%) (6).

Health care workers in EDs and psychiatric departments are at higher risk of workplace assault than workers in other hospital departments (7). However, hospital security programs for EDs and psychiatric units have been found to have significant gaps. Hospital size and patient volume have been found to be related to the implementation of certain security program elements (8,9). In addition, it has been shown that state-mandated hospital security programs reduce rates of assault to ED and psychiatric department workers, but it is unclear how the comprehensive nature of these programs impacts those rates (10).

Although effective interventions to reduce workplace crime and related injury in the retail sector have been identified, few evidence-based programs have been evaluated for the health care setting (11). One factor that has been consistently identified as increasing the risk of workplace assaults in the retail sector is working in high crime areas (11). Although hospitals may serve a wide catchment area, the facility itself may be vulnerable to spillover crime from the local community. If this were the case, hospitals located in towns with high crime rates would expect to have a greater number of workplace assaults. In New Jersey, hospitals exist among a diverse set of communities that may differ 10-fold or more in their rate of violent community crime. Little is known about the influence of community crime rates on employee assaults in the health care industry.

The first goal of this project was to describe security characteristics and programs in hospital EDs in New Jersey and to describe the hospital budget for security. The second goal was to examine how these security features vary by the size of the hospital and by the hospital's background community crime rate. We hypothesized that large hospitals in communities with high crime rates would have more comprehensive security programs, more and better trained security staff, higher budgets for security, and a history of violence against ED employees when compared to small hospitals in high crime areas and hospitals of any size located in low crime areas. Institutional Review Board approval was granted for this study.

METHODS

Sample

In 2000, all 85 licensed acute care hospitals and trauma centers in New Jersey were identified through the New Jersey Department of Health and Senior Services (NJDHSS) Division of Health Care Quality and Oversight (HCQO) (8). Of these 85 hospitals, one had closed before the initiation of this study, resulting in a total of 84 eligible hospitals. These hospitals were grouped into categories of Trauma hospitals, General Acute Care facilities with 300 beds or more, and General Acute Care facilities with fewer than 300 beds. Hospitals were randomly selected from these strata to maintain a representative distribution of hospital types in New Jersey. A total of 71 hospitals were invited to participate in this study. Of those invited to participate, 50 EDs (70%) agreed to participate and are included in this analysis.

Data Collection

Hospital workplace violence prevention programs. A cross-sectional survey of security programs was conducted among New Jersey hospitals from 2003 through 2005. Two separate surveys were developed and used in this analysis, one for use with hospital security directors and the other for use with ED nurse managers. Security directors were either interviewed in person (74%) or over the phone (26%), and all nurse managers were interviewed in person. During the in-person interview, a walk-through inventory of the security program was conducted. The security director's interview was extensive and took approximately 1 h to complete, whereas the nurse manager's interview and ED walk-through each took approximately 20 min to complete. Interviews included questions about the hospital's policies, training, administrative involvement, and the presence of environmental controls. The security director interview also included questions regarding the approval of security department funding requests, the perceived importance of security to management, and the frequency of security meetings with senior managers. The walk-through inspection focused on the environmental design of the ED, specifically the presence of environmental deterrents to violence, such as access control procedures (e.g., locks, metal detectors), adequate lighting, and the elimination of areas where staff can become isolated with an aggressive patient.

Patient service revenue. Annual hospital net patient service revenue in 2004 was collected from NJDHSS, HCQO Division. The annual net patient service revenue represents the total annual revenue successfully collected by the hospital for inpatient and outpatient services. The total annual net patient service revenue was divided by the total number of licensed beds in each hospital. The majority of beds licensed were for acute care; however, several hospitals did have a small number of rehabilitation and long-term care beds included in their license and therefore were included in this analysis. This calculation provided the total net patient service revenue per bed and was used as a proxy for the financial health of each hospital.

Community crime rates. The New Jersey State Police Uniform Crime Code reports were used to identify index

and violent crime rates by town throughout New Jersey for the year 2004. In New Jersey, index crimes included murder, rape, robbery, aggravated assault, larceny theft, and motor vehicle theft. Violent crime included murder, rape, robbery, and aggravated assault. The year 2004 was selected because the majority of interviews and inspections were conducted in 2004, and the town rates were selected because this was the smallest geographic unit available and the most representative of the community crime in close proximity to the hospital. The Uniform Crime Code also included the town population sizes for 2004, which were derived from Census 2000 data (12). The population size was used as the denominator in the calculation of community crime rates.

The assignment of hospitals to a town allowed for the linkage of a particular hospital to its town's crime rates. The town location of each hospital was confirmed through the use of mailing addresses, road maps, and telephone calls to the hospital and town clerk to verify specific town boundaries. In two cases, hospitals were located on their towns' official geographic border and therefore, each hospital was assigned to the town that contained the majority of the hospital's property.

Employee assault rates. Incidents of violence against ED staff were obtained from Occupational Safety and Health Administration (OSHA) 200 logs for a 10-year period covering 1992 through 2001. In several cases, OSHA logs were available only from 1993 to 2001. In addition, assault data were not available for eight of the hospitals in the study. These logs document OSHA-reportable injuries of hospital employees, defined as death, an injury requiring medical treatment beyond routine first aid, loss of consciousness, or lost or restricted work time. Only OSHA recordable injuries that could be confirmed as resulting from a violent event and occurring in the ED were used in the analysis.

To calculate assault rates, denominator data were abstracted from the NJDHSS HCQO Division. NJDHSS HCQO requires that each hospital operating in the state submit financial data, which include data on employee hours. Employee hour data of ED staff from 1992 through 2001 were abstracted for each enrolled hospital. The total number of ED employee person hours worked served as a proxy for the risk of exposure to violence and was used as the denominator to calculate annual average assault rates for each hospital ED from 1992 through 2001.

Data Analysis

The 50 hospitals were categorized by size and community crime rate into four categories: 1) large hospitals in high crime areas (n = 15), 2) large hospitals in low crime areas (n = 10); 3) small hospitals in high crime areas (n = 10); and, 4) small hospitals in low crime areas (n = 15). Hospital size was categorized as large if the bed size exceeded 266 beds, which was the median hospital size in the sample. Index and violent crimes were considered separately. Towns were categorized as high for index crimes if the crime rate exceeded the median of 31 index offenses per 1000 town residents per year. Towns were categorized as high for violent crime if the crime rate exceeded the median of three violent offenses per 1000 town residents per year. Towns that were equal or below these medians were considered low crime. The hospitals in each of these four categories differed slightly when using index crime vs. violent crime, so separate analyses for each crime type were conducted.

Next, the proportion of hospitals in each of the four hospital categories that had implemented selected security program elements was determined. A chi-squared or Fisher's exact test (if there were fewer than five observations per cell) was utilized to determine if the proportion of hospitals reporting the implementation of security program elements, reporting approval of security budgets, and reporting of revenue significantly differed by hospital size and community crime rate ($\alpha = 0.05$). The net patient service revenue per bed and ED employee assault rates were also compared among hospital categories using a Wilcoxon test.

RESULTS

Hospital Security Programs, Size and Community Crime

Small hospitals located in towns with low index and low violent crime consistently implemented fewer security program features when compared to the other types of hospitals (Tables 1, 2, 3). In particular, having a security director with a law enforcement background was more prevalent in large hospitals than in small hospitals (Table 1). Fewer small hospitals in towns with low index crime had security directors with a law enforcement background, compared to small hospitals in towns with high index crime ($p = 0.03$) (Table 1). This was also true for small hospitals located in towns with low violent crime rates vs. hospitals located in towns with high violent crime rates ($p = 0.08$), whereas fewer small hospitals in towns with low violent crime had security directors with a law enforcement background.

Small hospitals in towns with low index crime less frequently stationed guards in the ED at all times (i.e., 24 hours a day, 7 days a week) when compared to large hospitals in low or high index crime areas and small hospitals in high index crime areas (Table 1). In addition,

Table 1. Comparison of Hospital Security Characteristics between Hospitals Located in Low Index Crime and High Index Crime Areas, by Hospital Size*

Hospital Security Characteristics	Large Hospitals†				Small Hospitals†			
	Total n = 25 (%)	Low Index Crime‡ n = 10 (%)	High Index Crime‡ n = 15 (%)	*p*-Value‖	Total n = 25 (%)	Low Index Crime‡ n = 15 (%)	High Index Crime‡ n = 10 (%)	*p*-Value‖
Security director has a law enforcement background				0.63				0.03
Yes	14	5 (56%)	9 (69%)		8	2 (13%)	6 (60%)	
No	8	4 (44%)	4 (31%)		17	13 (87%)	4 (40%)	
Unknown/missing§	3							
Security guards are hospital employees				0.61				0.35
Yes	18	8 (89%)	10 (77%)		19	10 (67%)	9 (90%)	
No	4	1 (11%)	3 (23%)		6	5 (33%)	1 (10%)	
Unknown/missing§	3							
Security guards are stationed in the ED 24 h a day/7 days a week				0.54				0.69
Yes	19	7 (78%)	12 (92%)		13	7 (47%)	6 (60%)	
No	3	2 (22%)	1 (8%)		12	8 (53%)	4 (40%)	
Unknown/missing§	3							
Security guards are certified through training				0.18				1.0
Yes	6	4 (44%)	2 (15%)		4	2 (14%)	2 (20%)	
No	16	5 (56%)	11 (85%)		20	12 (86%)	8 (80%)	
Unknown/missing§	3				1			
Security guard training is repeated regularly				1.0				1.0
Yes	20	8 (89%)	12 (92%)		21	13 (93%)	8 (89%)	
No	2	1 (11%)	1 (8%)		2	1 (7%)	1 (11%)	
Unknown/missing§	3				2			
Security has policies to reduce tension in the waiting room				0.41				0.66
Yes	21	8 (89%)	13 (100%)		18	10 (67%)	8 (80%)	
No	1	1 (11%)	0 (0%)		7	5 (33%)	2 (20%)	
Unknown/missing§	3							
Security maintains a system for reporting violent events				1.0				1.0
Yes	22	9 (100%)	13 (100%)		24	14 (93%)	10 (100%)	
No	0	0 (0%)	0 (0%)		1	1 (7%)	0 (0%)	
Unknown/missing§	3							

* Percent (%) values represent percentages of yes and no answers among each individual security characteristic within each hospital size and community crime category.
† Hospital size categorized as above (large) or below (small) the median sample bed size of 266 beds.
‡ Index crime rate categorized as above (high) or below (low) the median of 31 index offenses per 1000 population in 2004.
§ Unknown or missing values were excluded from statistical analysis.
‖ Compares hospital security characteristic across levels of community crime, chi-squared or Fisher's Exact test.

small hospitals in towns with low index crime also less frequently required certification of guards, and less frequently had in-house security guards, policies to reduce tension in the ED waiting room, and stationary panic alarms in the ED (Tables 1, 3).

Hospital Budget, Size and Community Crime

Small hospitals located in towns with low index crime rates had the highest rate of refusal for security funding requests (21%) and the highest rate of security budget decreases (36%) among all hospital categories (Table 4). Despite these funding refusals and decreases, small hospitals located in towns with low index crime had the second highest median net patient service revenue per bed of $604,472. In contrast, small hospitals located in towns with high index crime rates had significantly less revenue per bed at $402,813 ($p = 0.03$) (Table 4). Large hospitals in high index crime areas had the highest median net patient revenue per bed at $665,610 when compared to large hospitals in low crime areas, but this difference was not statistically significant ($p = 0.06$).

Table 2. Comparison of Hospital ED Design and Environment between Hospitals Located in Low Index Crime and High Index Crime Areas, by Hospital Size*

Design and Environment Characteristics	Large Hospitals†				Small Hospitals†			
	Total n = 25 (%)	Low Index Crime‡ n = 10 (%)	High Index Crime‡ n = 15 (%)	*p*-Value‖	Total n = 25 (%)	Low Index Crime‡ n = 15 (%)	High Index Crime‡ n = 10 (%)	*p*-Value‖
Areas within the ED where there is limited visibility or isolation				0.65				1.0
Yes	19	7 (70%)	12 (80%)		23	13 (93%)	10 (100%)	
No	6	3 (30%)	3 (20%)		1	1 (7%)	0 (0%)	
Unknown/missing§	0				1			
Are there areas in which patients who have become aggressive can be placed to calm down?				0.66				0.24
Yes	18	8 (80%)	10 (67%)		14	10 (67%)	4 (40%)	
No	7	2 (20%)	5 (33%)		11	5 (33%)	6 (60%)	
Are there areas within the ED in which employees can become isolated and are unable to communicate?				1.0				0.61
Yes	20	8 (80%)	12 (86%)		18	10 (71%)	8 (89%)	
No	4	2 (20%)	2 (14%)		5	4 (29%)	1 (11%)	
Unknown/missing§	1				2			
Are mirrors used to enhance visibility?				1.0				0.04
Yes	12	4 (44%)	8 (53%)		10	3 (21%)	7 (70%)	
No	12	5 (56%)	7 (47%)		14	11 (79%)	3 (30%)	
Unknown/missing§	1				1			
Other than the main entrance, are there any areas where the public can enter unrestricted?				1.0				0.39
Yes	17	7 (70%)	10 (67%)		16	11 (33%)	5 (50%)	
No	8	3 (30%)	5 (33%)		9	4 (27%)	5 (50%)	
Are there any areas that do NOT have adequate lighting?				0.54				1.0
Yes	3	2 (20%)	1 (7%)		1	1 (7%)	0	
No	22	8 (80%)	14 (93%)		23	13 (93%)	10	
Unknown/missing§					1			

* Percent (%) values represent percentages of yes and no answers among each individual security characteristic within each hospital size and community crime category.
† Hospital size categorized as above (large) or below (small) the median sample bed size of 266 beds.
‡ Index crime rate categorized as above (high) or below (low) the median of 31 index offenses per 1000 population in 2004.
§ Unknown or missing values were excluded from statistical analysis.
‖ Compares hospital security characteristic across levels of community crime, chi-squared or Fisher's Exact test.

Assaults of ED Employees, Hospital Size and Community Crime

The rate of assaults against ED staff over the 10-year period from 1992 through 2001 was highest in small hospitals, specifically small hospitals located in areas with high violent crime (1.1 assaults per 100,000 ED employee hours per year) (Table 5). Small hospitals located in towns with low community crime rates had the second highest employee assault rates (by index crime, 0.66 assaults per 100,000 ED staff hours per year; by violent crime, 0.55 assaults per 100,000 ED staff hours per year) when compared to the other hospital groups. The median assault rate in small hospitals was two to five times higher in small vs. large hospitals (Table 5).

DISCUSSION

This study demonstrates that there are variations in security programs based on where the hospital is located with respect to community crime and with respect to the

Table 3. Comparison of Hospital ED Staff Personal Protection Devices and Procedures between Hospitals Located in Low Index Crime and High Index Crime Areas, by Hospital Size*

Hospital ED Staff Personal Protection	Large Hospitals†				Small Hospitals†			
	Total n = 25 (%)	Low Index Crime‡ n = 10 (%)	High Index Crime‡ n = 15 (%)	*p*-Value‖	Total n = 25 (%)	Low Index Crime‡ n = 15 (%)	High Index Crime‡ n = 10 (%)	*p*-Value‖
Do staff carry noise-making devices, such as whistles, to alert other staff of problems?				1.0				1.0
Yes	0	0	0		0	0	0	
No	25	10	15 (100%)		25	15 (100%)	10	
Do any staff carry portable panic alarms?				1.0				1.0
Yes	2	1 (10%)	1 (7%)		0	0	0	
No	23	9 (90%)	14 (93%)		25	15	10	
Does your ED have stationary panic alarms?				0.61				0.69
Yes	19	8 (89%)	11 (73%)		16	9 (60%)	7 (70%)	
No	5	1 (11%)	4 (27%)		9	6 (40%)	3 (30%)	
Unknown/missing§	1				0			
Are visitors required to check in?				0.23				1.0
Yes	13	7 (70%)	6 (40%)		15	9 (60%)	6 (60%)	
No	12	3 (30%)	9 (60%)		10	6 (40%)	4 (40%)	
Are code lights used in bathroom or treatment rooms to warn others of a violent/aggressive patient?				1.0				0.5
Yes	0	0	0		2	2 (13%)	0	
No	25	10	15		23	13 (87%)	10	
Are security cameras in use?				0.25				0.63
Yes	19	8 (100%)	11 (73%)		21	12 (80%)	9 (90%)	
No	4	0 (0%)	4 (27%)		4	3 (20%)	1 (10%)	
Unknown/missing§	2							

* Percent (%) values represent percentages of yes and no answers among each individual security characteristic within each hospital size and community crime category.
† Hospital size categorized as above (large) or below (small) the median sample bed size of 266 beds.
‡ Index crime rate categorized as above (high) or below (low) the median of 31 index offenses per 1000 population in 2004.
§ Unknown or missing values were excluded from statistical analysis.
‖ Compares hospital security characteristic across levels of community crime, chi-squared or Fisher's Exact test.

size of the hospital. Small hospitals in towns with low index or low violent crime rates have implemented fewer security features within the ED. This was measured through the presence of specific security program features known to act as a deterrent to criminal activity. These small hospitals located in towns with low community crime had implemented fewer security program elements, provided less funding for security, and less frequently approved requests for additional security program funding, while at the same time, they had the second highest rate of serious assaults against ED staff among all hospital categories. A possible explanation for this contrast is that the presence or lack of community crime impacts the perception of the risk for violence among hospital decision-makers, which is then reflected in the comprehensiveness of hospital security programs. Other explanations related to this perception that were suggested during security director interviews include: senior management feels that extensive security features are not practical, there is strong interest among senior management to make their hospitals customer friendly, and there is a lack of resources for security programs. Interestingly, the financial data indicate that small hospitals in towns with low index and violent crime had the second highest annual net patient service revenue per bed, at $604,472, when compared to other types of hospitals. The financial data suggest that a lack of resources among small hospitals in towns with low index and violent crime does not explain less implementation of security features.

This study also found distinct differences in the incidence of serious employee assaults among the different hospital types, with small hospitals having much higher rates of employee assaults than large hospitals. Small hospitals located in high crime areas had the highest employee assault rates, small hospitals located in communities with low crime rates had the second highest rate of employee assaults, and large hospitals had substantially lower employee assault rates irrespective of where they were located.

Table 4. Comparison of Hospital Revenue and Security Budget between Hospitals Located in Low Index Crime and High Index Crime Areas, by Hospital Size*

Hospital Revenue and Security Budget Characteristics	Large Hospitals† Total n = 25 (%)	Large Hospitals† Low Index Crime‡ n = 10 (%)	Large Hospitals† High Index Crime‡ n = 15 (%)	Large Hospitals† p-Value‖	Small Hospitals† Total n = 25 (%)	Small Hospitals† Low Index Crime‡ n = 15 (%)	Small Hospitals† High Index Crime‡ n = 10 (%)	Small Hospitals† p-Value‖
Median Net Patient Service Revenue (dollars per bed)¶		464,197	665,610	0.06		604,472	402,813	0.03
When requests are made for security funding, how often are they approved?				1.0				0.61
Rarely	1	0 (0%)	1 (8%)		4	3 (21%)	1 (10%)	
Often	20	9 (100%)	11 (92%)		20	11 (79%)	9 (90%)	
Unknown/missing§	4	1	3		1	1	0	
Does security have regularly scheduled meetings with senior hospital administrators?				1.0				1.0
Yes	22	9 (100%)	13 (100%)		20	12 (80%)	8 (80%)	
No	0	0 (0%)	0 (0%)		5	3 (20%)	2 (20%)	
Unknown/missing§	3	1	2		0			
How high a priority is security to senior hospital administrators?				0.61				0.44
Yes	17	6 (67%)	11 (85%)		15	10 (67%)	5 (50%)	
No	5	3 (33%)	2 (15%)		10	5 (33%)	5 (50%)	
Unknown/missing§	3	1	2					
Has the budget for security increased, decreased, or stayed the same over the last two years?				0.55				0.66
Decreased	3	2 (22%)	1 (8%)		7	5 (36%)	2 (22%)	
No change	18	7 (78%)	11 (92%)		16	9 (64%)	7 (78%)	
Increased	4	1	3		2	1	1	

* Percent (%) values represent percentages of yes and no answers among each individual security characteristic within each hospital size and community crime category.
† Hospital size categorized as above (large) or below (small) the median sample bed size of 266 beds.
‡ Index crime rate categorized as above (high) or below (low) the median of 31 index offenses per 1000 population in 2004.
§ Unknown or missing values were excluded from statistical analysis.
‖ Compares hospital security characteristic across levels of community crime, chi-squared or Fisher's Exact test.
¶ Because data were significantly non-normal, non-parametric Wilcoxon test was used to compare hospital financial data across levels of community crime.

Staff in all hospitals commonly recounted violent incidents among all types of patients and visitors due to the high stress and emotionally challenging experience of an emergency medical visit. The environment and high stress associated with emergency medical care may make the risk of assault or violent behavior independent of the community crime rates, and therefore this warrants strong security programs in all hospitals. As demonstrated by this study, small hospitals located in towns with low community crime rates implemented the least amount of security features despite the fact that the assault rate of ED employees is greater in small hospitals

Table 5. ED Staff Assault Rates by Hospital Category within Community Crime Comparison

	High Community Crime Rates			Low Community Crime Rates		
	Large Hospitals	Small Hospitals	p-Value	Large Hospitals	Small Hospitals	p-Value
Index crimes						
n	14	6		9	13	
Median assault rate per 100,000 ED employee hours	0.33	0.55	0.93	0.22	0.66	0.13
Violent crimes						
n	15	6		8	13	
Median assault rate per 100,000 ED employee hours	0.22	1.1	0.3	0.28	0.55	0.69

Wilcoxon test used for comparison within community crime rate across hospital sizes; two-tailed test used.

than in large hospitals, and the employee assault rate is high even among small hospitals located in towns with low community crime. Although it may be premature to draw the conclusion that a lower level of security implementation in small hospitals located in towns with low crime rates could have contributed to increased assault risk in these hospitals, this issue certainly warrants further study.

Several states, including California, have passed legislation regarding security in hospitals. New Jersey recently passed legislation in the form of the Violence Prevention in Healthcare Facilities Act (S1761), which was signed by the Governor in January of 2008. The variability in hospital security programs found in this study argues for the need to assure some consistency and implementation of important security program features, such as those in the OSHA guidelines (5). This is particularly true for hospitals that have a self-perception of having a low risk of assaults against employees because this may lead to decision-makers not instituting sufficient procedures to protect their employees. This study suggests that ED employees in small hospitals are at risk of assault, even if the hospital is located in a town with low community crime.

Limitations

Although the 50 hospitals that participated in this study represent 61% of all the licensed hospitals in New Jersey, the relatively small sample size reduced the power necessary to reach statistical significance. Despite the low power, some statistically significant findings were found and some clear patterns emerged from the data. One important limitation of this study is that reporting bias may have occurred, with smaller hospitals having fewer resources to record and track employee assaults and thus artificially lowering the assault rate among these hospitals. In addition, only OSHA recordable injuries were analyzed, and therefore, the assault rates used in this study were likely an underestimate of the total number of violent acts against ED employees. As a result of these two limitations, the assault rate among small hospitals reported in this study would be an underestimate of the true rate. The surveys and interviews were also done in 2004, whereas the assault data were collected for the time period of 1992 through 2001. Although the two time periods differ, the strength of assault data is that they provide a historic picture of the experience at individual hospitals over many successive years. This is important because physical assaults resulting in an OSHA recordable injury are relatively rare occurrences. The limitation is that the information collected by interview may not fully reflect the security program over a long period of time because changes may have been made to security over time. Changes likely did occur within security programs over time, hopefully in response to the past experiences hospitals have had with violence. However, this is not likely the case in this study because if it were, small hospitals would have been expected to have more extensive implementation of security because they had the second highest rate of employee assaults when compared to other types of hospitals. There were some other limitations with the data, including assault data that were not available for eight of the hospitals in the study; should that data have been available, more accurate assault rates may have resulted. Despite these limitations, the study results provide strong evidence for the need to have comprehensive security programs in all hospitals.

CONCLUSIONS

Small hospitals located in towns with low community crime rates implemented the fewest security program features despite having the second highest assault rate of ED employees. The perception that small hospitals in seemingly safe towns are not at risk of assault against their employees, when in fact the risk may be significant, is widespread and may negatively impact the implementation of adequate security programs. Perception of safety among hospital decision-makers alone may play a significant role in security program implementation and decisions. Overall financial resources of the hospital do not seem to limit the development of a security program, because the hospitals with the lowest level of security implementation had the second highest annual net patient service revenue per bed when compared to other types of hospitals. These interpretations are based on the weight of the evidence for all the data presented in the tables, with those variables that reached statistical significance detailed in the Results section.

Due to the high stress and intrinsic workplace characteristics of EDs, the risk of assault is likely to be universal among all sizes of hospitals in all types of communities. Therefore, a comprehensive security program is needed in all hospital emergency departments.

Acknowledgments—The authors would like to acknowledge Jamie Smith, MA for providing the employee assault rates. The authors would also like to thank Eddy Bresnitz, MD, MS, Deputy Senior Assistant Commissioner/State Epidemiologist, for his support of this study.

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ARTICLE SUMMARY

1. Why is this topic important?

Violence against health care workers is a serious occupational health hazard, especially for ED employees. Injuries from non-fatal assaults are estimated to be 4 to 12 times higher among health care workers when compared to the overall rate for all private sector employees in the United States. The ED has been identified as one of the highest risk areas for violence within a hospital.

2. What does this study attempt to show?

This study investigated whether financial resources, size, and background community crime rates impacted ED security programs and ED employee assault rates.

3. What are the key findings?

The perception that small hospitals in seemingly safe towns are not at risk of assault against their employees, when in fact the risk may be significant, is widespread and may affect the implementation of adequate security programs. Due to the high stress and intrinsic workplace characteristics of EDs, the risk of assault is universal among all sizes of hospitals in all types of communities. Therefore, a comprehensive security program is needed in all hospital EDs.

4. How is patient care impacted?

A safe environment of care in today's health care workplace incorporates both patient safety and worker safety. Reducing medical errors for patients includes addressing systemic risk factors. Some of these factors include persistent health and safety hazards that also affect health care workers. Occupational hazards such as workplace assaults of direct care staff result in lost work time, leading to reduced staffing, increased employee turnover, and a perception by employees and the public of a decreased level of safety and quality in the health care institution.