



# **Emergency Department Violence Surveillance Study**

## **August 2010**

**Emergency Nurses Association  
Institute for Emergency Nursing Research**



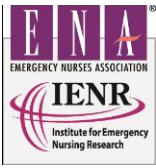
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The published data should be used with the following advisement: the data are based on replies to a survey that was sent to emergency nurses randomly selected from ENA membership database. Response to the survey was voluntary. ENA does not assume responsibility for the accuracy of the information voluntarily reported by the individuals surveyed.

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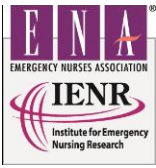
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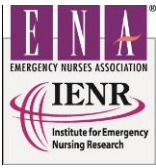
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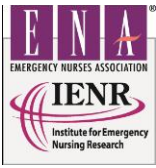
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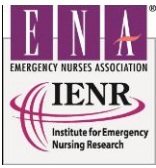
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## Executive Summary

Nine hundred deaths and 1.7 million nonfatal assaults occur each year in the United States due to workplace violence.<sup>1,2</sup> These numbers represent only the most serious physical violent incidents; the extent to which all types of violence are experienced in the workplace remains unknown. Workplace violence has been a serious concern for emergency nurses.<sup>3</sup> In addition to psychiatric units and nursing homes, the emergency department (ED) is one of the most dangerous work settings in health care for nurses because of violence from patients and visitors.

Due to under-reporting, the occurrence of physical and verbal violence toward emergency nurses is not well understood. In addition, violence in the ED is likely increasing with the ongoing nursing shortage, crowding issues, and longer patient waiting times. Therefore, it is essential to investigate the actual extent of violence and aggression toward emergency nurses. Efforts to obtain ongoing objective data allows for tracking changes related to violence toward emergency nurses as well as the processes used to respond to violence.

ENA initiated the Emergency Department Violence Surveillance Study in May 2009. The purpose of the study is to establish:

1. The extent of the occurrence of various types of workplace violence toward emergency nurses from patients and visitors on any given day;
2. The extent of under-reporting of workplace violence toward emergency nurses from patients and visitors;
3. The current reporting mechanisms, if any, for violence toward emergency nurses;
4. The current processes, if any, used to respond to violence toward emergency nurses; and
5. Trends in violence toward emergency nurses over time.

This ongoing study utilizes a cross-sectional online survey to determine the prevalence and nature of workplace violence experienced by emergency nurses during the previous seven days, a short time frame for greater accuracy in the recall of events. This report represents analysis of the first four consecutive rounds of data collected approximately three months apart, from May 2009 to February 2010. A total of 3,211 emergency department nurses (average of 802 for each of the four rounds) participated in the study. Major findings are highlighted below:

- Overall physical violence and verbal abuse rates during a seven-day period (during which the nurses worked an average of 36.8 hours) were fairly high across all rounds (mean = 54.8%, ranging from 50.7% in round 1 to 58.4% in round 2). The overall rate is primarily a function of verbal abuse. Physical violence rarely occurred without verbal abuse (22 cases, or 0.8%, summed across all rounds).
- The physical violence and verbal abuse rates remains high across all rounds with minimal variation. Specifically, an average of 11.0% (ranging from 8.3% to 12.8%) of the participants reported experiencing physical violence, and 43.8% (ranging from 42.4% to 45.7%) reported experiencing verbal abuse.

- Based on the pooled data, the most prevalent types of physical violence and verbal abuse were having been grabbed/pulled by a person (47.0%) and having been yelled/shouted at (89.6%).
- The majority of the participants who were victims of workplace violence did not file a formal event report for the physical violence (64.2%) or the verbal abuse (87.2%) that they experienced.
- More than three-quarters (80.6%) of incidents of physical violence against emergency nurses occurred in a patient's room, 23.2% in a corridor/hallway/stairwell/elevator and 14.7% at the nurses' station.
- The most frequently reported activities that the emergency nurses were involved in at the time of a physically violent incident were triaging a patient (38.2%), restraining/subduing a patient (33.8%) and performing an invasive procedure (30.9%).
- Patients and their relatives were the main perpetrators in all incidents of physical and verbal violence, with 97.1% of physical incidents and 91.0% of verbal incidents having involved a patient.
- Fifteen percent of emergency nurses in the study who indicated being victims of workplace physical violence sustained a physical injury, with the most common type of injury being a bruise/contusion/blunt trauma (64.6%).
- Of the emergency nurses who indicated experiencing physical violence, almost half (44.9%) reported that no action was taken against the perpetrator as a result of the violence, and just under a quarter (23.4%) reported that the perpetrator was given a warning. When asked about the hospital's response/recommendation to the nurse, nearly three-quarters of nurses (74.4%) stated that the hospital gave them no response concerning the physical violence they experienced. Similarly, half (50.5%) of the nurses who indicated being victims of verbal abuse responded that no action was taken against the perpetrator(s), and over a quarter (29.6%) reported that the perpetrator was given a warning. In regard to the hospitals' responses to the nurses who experienced verbal abuse, more than three-quarters (81.3%) indicated that the hospital gave them no response.
- Physical violence rates tended to increase as population density increased, rising from Rural (8.3%) to Large Urban (13.4%) settings with middling rates in Suburban and Small Urban settings. The rate was significantly above average in Large Urban settings (OR=1.42, p=.005), and significantly below average in Rural settings (OR=0.69, p=.027). The same pattern holds true for verbal abuse.
- Nurses working in a Pediatric Only ED are less likely (OR=.47) to experience physical violence compared to nurses working in General and/or Adult EDs. Again, the same pattern holds true for verbal abuse.
- Overall, as Total ED Beds, Additional Treatment Space, Use of Added Space, and Total ED Visits increased, the odds of physical violence and verbal abuse increased.
- The use of a panic button/silent alarm is associated with lower physical violence rates while the presence of an enclosed nurses' station, security signage and well-lit areas were associated with significantly lower verbal abuse rates.
- In general, higher perceived safety ratings by nurses were associated with lower rates of physical violence and verbal abuse.
- Male nurses reported higher physical violence rates than female nurses (15.0% versus 10.3%, OR=1.53, p=.005). Physical violence rates tended to decline as nurses' age



increased, from 13.8% in the youngest category (18 to 34) to 8.2% in the oldest category (55 or older). The odds of physical violence were 1.78 times higher in the youngest category of nurses versus the oldest category (OR=0.56, p=.005). Again, the same pattern holds true for verbal abuse.

- Higher commitment to violence mitigation from hospital administration and ED management and the presence of reporting policies (especially zero-tolerance policies), were associated with a lower odds of physical violence and verbal abuse. Specifically, hospitals with no reporting policy had an 18.1% physical violence rate, hospitals with a non-zero-tolerance reporting policy had a 12.3% physical violence rate, and the lowest rate was in settings with a zero-tolerance reporting policy (8.4%).
- Nurses whose hospital administration (OR = 0.73) and ED management (OR = 0.76) are committed to workplace violence control are less likely to experience workplace violence.



# Emergency Department Violence Surveillance Study

## I. Background and Purpose

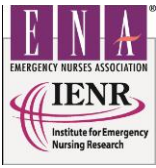
Nine hundred deaths and 1.7 million nonfatal assaults occur each year in the United States due to workplace violence<sup>1,2</sup>. These numbers represent only the most serious incidents; the prevalence of other types of violence remains unknown. Workplace violence has been a serious concern for emergency nurses<sup>3</sup>. Along with psychiatric units and nursing homes, the ED is one of the most dangerous work settings in health care for nurses because of violence from patients and/or visitors. Estimates indicate that about one-fourth of emergency nurses experienced frequent physical violence (more than 20 times) during the past three years. Verbal abuse is even more prevalent; about one-fifth of emergency nurses reported being the victim of verbal abuse at the workplace more than 200 times during the past three years<sup>3</sup>. In addition, research shows that the majority of nurses who experienced one or more forms of violence did not report the incident to either employers or law enforcement authorities. Some of the reasons that contribute to the under-reporting of violence included:

- A perception that assaults are part of the job
- A belief among employees that reporting will not benefit them
- A concern that assaults may be viewed as evidence of poor job performance
- A lack of institutional policies

Due to under-reporting, the extent of the occurrence of violence toward emergency nurses is not well understood. Therefore, it is essential to investigate the actual extent of violence and aggression toward emergency nurses. In addition, since violence in the ED is likely to rise with the ongoing nursing shortage, crowding issues and longer waiting times, it is crucial to obtain ongoing objective data in order to track changes related to violence toward emergency nurses as well as the processes used to respond to violence.

The purpose of this project, therefore, is to establish and maintain a national ongoing surveillance mechanism to track and trend violence against emergency nurses as well as to document the processes used to respond to violence. The ongoing assessment of violence against emergency nurses will provide ENA and other concerned parties, including government entities and the general public, the data needed to advocate for safer practice environments for emergency nurses.

This ongoing surveillance project on violence toward emergency nurses consists of creating and maintaining a web-based survey system to collect data from emergency nurses on the occurrence of violence toward them and the processes used to respond to workplace violence from patients and visitors.



The specific objectives are to establish:

1. The extent of the occurrence of various types of workplace violence toward emergency nurses from patients and visitors on any given day;
2. The extent of under-reporting of workplace violence toward emergency nurses from patients and visitors;
3. The current reporting mechanisms, if any, for violence toward emergency nurses;
4. The current processes, if any, used to respond to violence toward emergency nurses; and
5. Trends in violence toward emergency nurses over time.

This report represents analysis of the first four consecutive rounds of data collected approximately 3 months apart, from May 2009 to February 2010.

## II. Methodology

### *A. Design and Data Collection Instrument*

This ongoing study utilizes a cross-sectional design to determine the prevalence and nature of workplace violence experienced by emergency nurses during the previous seven days, a short time frame for more accuracy in recall of events. The questionnaire was developed from the survey used in the 2007 ENA study, *Violence against Nurses Working in U.S. Emergency Departments*.<sup>3</sup> Fifteen emergency nursing content experts evaluated the current questionnaire and provided feedback to the research team, thus lending support to the content validity of the instrument. The questionnaire has three distinct sections:

- The first section pertains to the emergency nurse's work environment, including the geographic location of the ED, facility type and security in the ED.
- The second section focuses on the nurse's experience of workplace violence from patients and visitors over the past seven days. If a nurse reports experiencing workplace violence, further information on the perpetrator and frequency of violence is sought. Specifically, the questions focus on the types of violence the nurse experienced including both physical violence (e.g., being kicked, bitten, hair pulled, etc.) and verbal abuse (e.g., being sworn/cursed at, threatened with physical harm, yelled/shouted at). In addition, the nurse is asked to state whether he or she reported the violent incident and how the incident was managed by their ED.
- The third section includes demographic questions about the emergency nurses.

For the purposes of this study, workplace violence was defined as, "An act of aggression directed toward persons at work or on duty, ranging from offensive or threatening language to homicide. Workplace violence is commonly understood as any physical assault; emotional or verbal abuse; or threatening, harassing or coercive behavior in the work setting that causes physical and/or emotional harm."<sup>3</sup> This study focuses on only workplace violence against emergency nurses by patients and/or patients' visitors.

## B. Survey Process and Sample

The anonymous online surveys were administered using Survey Select Expert (version 5.6). The surveys were conducted approximately three months apart from May 2009 to February 2010 utilizing a sample of emergency nurses, randomly selected from the ENA membership database, for each round. Members were invited (via a blast email) to participate in the study by completing the survey online. Considerations were given so that members were not invited more than once during the four consecutive survey rounds. The potential participants received an e-mail message that included the link to the online survey. Participants were asked to respond within two weeks. Three reminders were sent via e-mail during the data collection period to encourage participation. The sample size and response rates for each round of survey are presented in Table 1 below. Response rates in this range are typical of online surveys. Due to missing data, sample size fluctuated based on the type of analysis.

**Table 1. Sample Size and Response Rates for Rounds 1-4**

	Round 1	Round 2	Round 3	Round 4	Total
Sample Size	674	715	801	1,021	3,211
Response Rate (%)	8.3%	8.7%	8.0%	9.8%	8.7%

## C. Human Subjects Protection

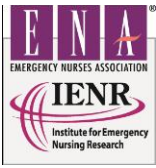
This study, submitted to an independent institutional review board (Chesapeake Research Review, Inc., Columbia, MD), was granted exempt status. Consent to participate in the study was implied by virtue of a participant completing the survey and submitting it online. Computer-based files were made available only to authorized research staff using password-protected computers.

## D. Data Analysis

SPSS Windows (version 17.0) was used for data management and statistical analysis. Descriptive statistics on all variables (e.g., frequencies, means, standard deviation), chi-square analyses for categorical variables, and *t*-test or ANOVA for continuous variables were calculated.

A polynomial trend analysis was conducted to examine the trend on physical and verbal violence rates from the four consecutive rounds. Three binary dependent variables were evaluated: (1) Any physical or verbal violence, (2) Verbal Abuse and (3) Physical Violence. Trend analyses included likelihood ratio tests of overall differences between rounds and deviation from linearity and Wald chi-square tests of polynomial trend components (linear, quadratic, and cubic). In addition, Wald chi-square tests of adjacent rounds were conducted. Detailed rates for cross-classified verbal abuse and physical violence categories are presented.

Additionally, logistic regression analyses were performed to identify factors that are associated to the occurrence of violence. Based on pooled data from the four consecutive rounds of surveys, a series of logistic regression analyses were conducted predicting (1) past seven-day physical violence rates and (2) past seven-day verbal abuse rates. Factor items included categorical and interval-scaled factors. Categorical items were dummy coded, and interval-scaled items were



standardized. Factors were conceptualized as falling within 10 distinct blocks including Types of EDs based on Population Served, Region Served, ED Capacity and Utilization, Facility Type, Security/Personnel Type, Environmental Control Measures, Safety Perception, Training, and Preparedness, Hospital Safety Commitment and Policy, Nurse Demographics and Nurse Role.

Analyses included estimates and inferential tests for individual items, item blocks, and combining items and blocks. Item effects were examined (1) alone, (2) controlling for the effects of other items within the relevant block, and (3) controlling for the effects of all items from all blocks. Block effects were examined (4) for each block alone, and (5) controlling for the effects of all items from other blocks. Models examining effects of individual items alone included only cases with valid responses on the item. All multivariable models employed a mean fill for those few cases with missing values on some predictors.

### III. Results

#### *A. Characteristics of the Sample*

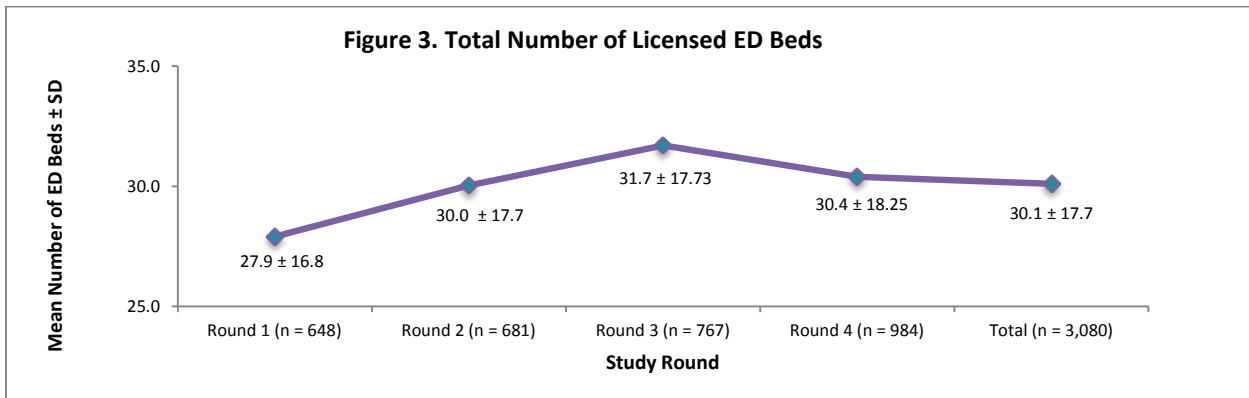
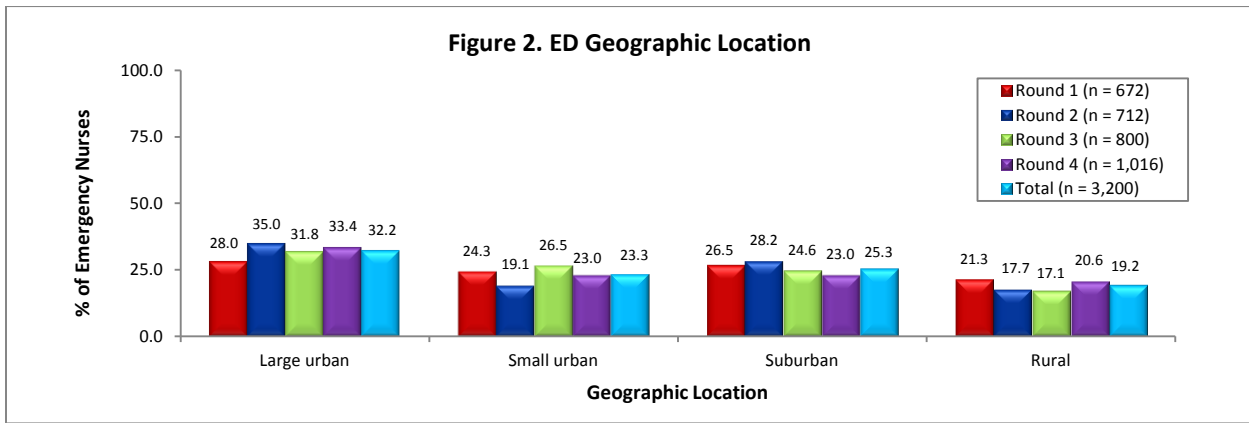
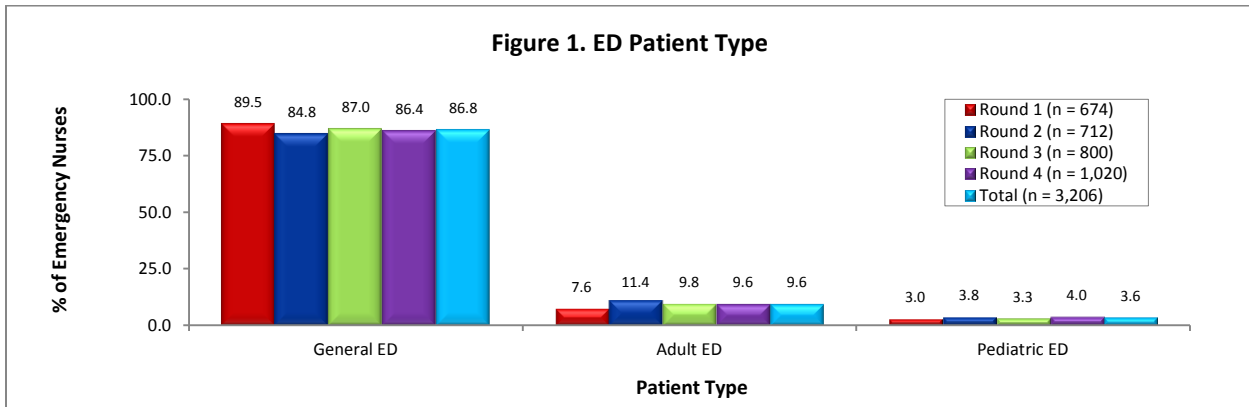
Table 2 displays the demographic characteristics of the emergency nurses in the four consecutive rounds of the study. Characteristics of the sample for the four rounds were similar. Based on the pooled data, of the 3,211 nurses who participated, the majority were women (85.0%) and 35 to 54 years of age (64.2%). Most nurses had earned either a Bachelor (46.9%) or an Associate-level (29.5%) nursing degree. Just over two-thirds (69.3%) of the nurses had worked in emergency nursing for six years or more ( $n = 3,117$ , mean  $12.9 \pm 9.2$ ), roughly half (51.0%) had worked in emergency care (all roles) for 14 years or more ( $n = 3,112$ , mean  $15.2 \pm 9.7$ ), and the vast majority (86.9%) had worked in their current ED for at least two years ( $n = 3,157$ , mean =  $8.4 \pm 7.8$ ). Nurses from all 50 states, the District of Columbia and overseas U.S. military bases were represented in the sample. The participants ( $n = 2,898$ ) reported working an average of  $36.8 \pm 14.9$  hours during the past seven days (median of 36.0 hours).

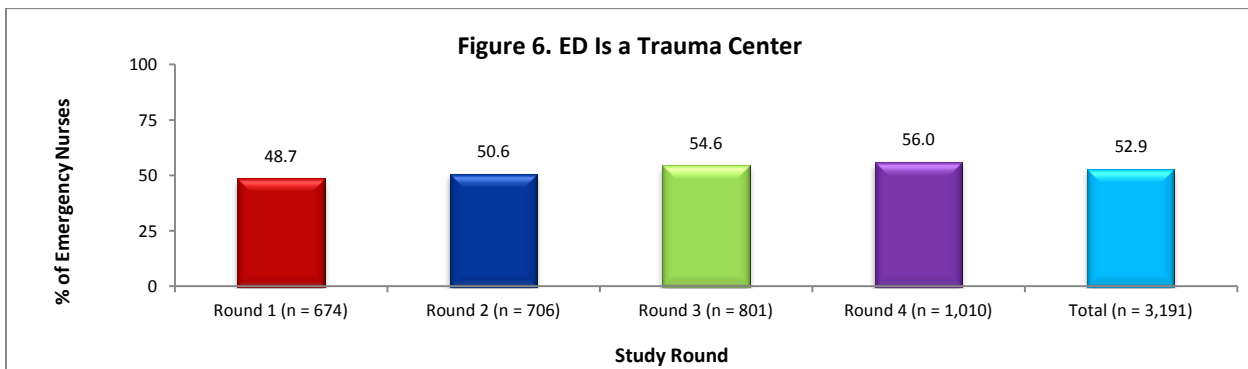
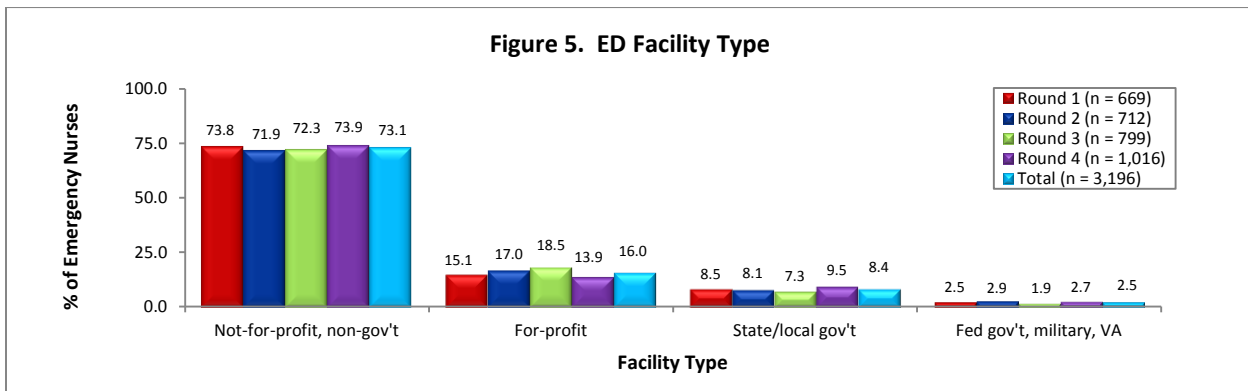
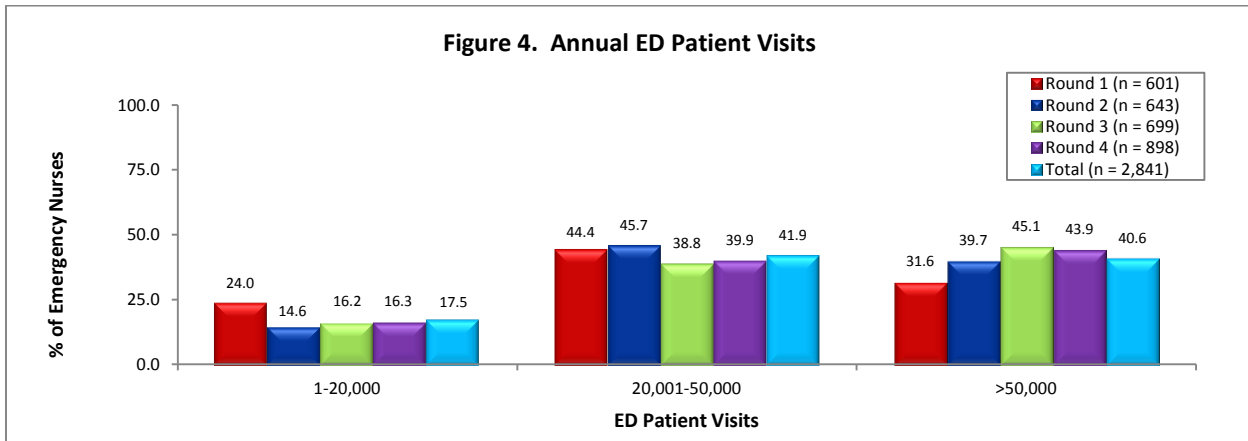
**Table 2. Characteristics of the Emergency Nurse Participants**

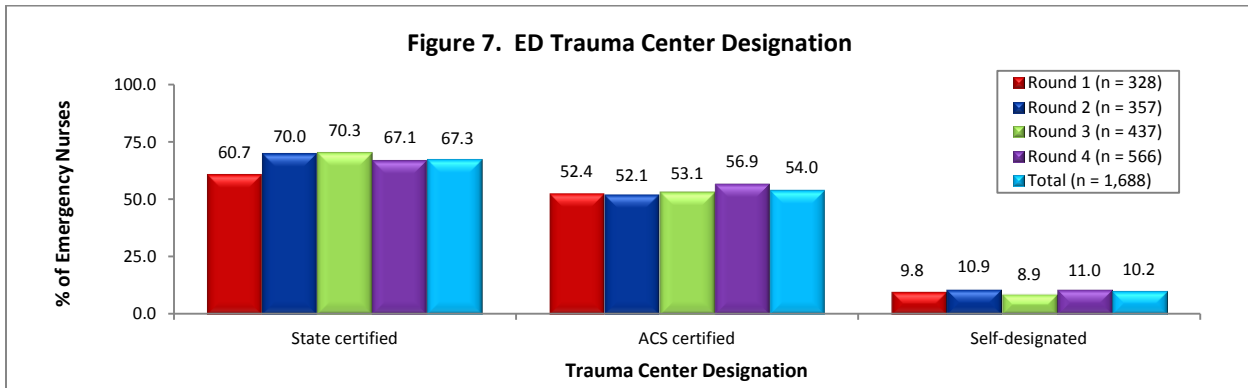
Characteristic	Mean ± SD* or %				
	Round 1	Round 2	Round 3	Round 4	Total
Gender	(n = 669)	(n = 709)	(n = 799)	(n = 1,010)	(n = 3,187)
Male	13.9%	15.8%	16.1%	14.4%	15.0%
Female	86.1%	84.2%	83.9%	85.6%	85.0%
Age	(n = 672)	(n = 711)	(n = 797)	(n = 1,019)	(n = 3,199)
18 – 24	1.6%	1.1%	1.5%	1.6%	1.5%
25 – 34	11.5%	15.6%	17.1%	16.5%	15.4%
35 – 44	31.7%	26.2%	25.8%	27.1%	27.5%
45 – 54	33.6%	38.4%	38.1%	36.3%	36.7%
55 – 64	20.8%	18.0%	16.9%	17.7%	18.2%
≥ 65	0.7%	0.7%	0.5%	0.9%	0.7%
Role in the ED	(n = 671)	(n = 709)	(n = 800)	(n = 1,014)	(n = 3,194)
Staff nurse	52.0%	58.5%	60.0%	55.3%	56.5%
Charge nurse	18.2%	16.1%	15.8%	18.0%	17.1%
Director/manager	14.0%	11.0%	10.9%	12.5%	12.1%
Clinical educator/coordinator, CNS, NP	11.5%	11.0%	10.1%	10.0%	10.5%
Other	4.3%	3.4%	3.2%	4.2%	3.8%
Level of Nursing Education	(n = 670)	(n = 707)	(n = 796)	(n = 1,012)	(n = 3,185)
LPN/LVN certificate	0.6%	0.3%	0.4%	0.3%	0.4%
Diploma	9.3%	7.8%	6.9%	7.1%	7.7%
Associate	29.1%	28.9%	28.8%	30.7%	29.5%
Bachelor	44.2%	46.0%	48.0%	48.4%	46.9%
Graduate degree	16.9%	17.1%	16.0%	13.4%	15.6%
ED Experience	(n = 668)	(n = 699)	(n = 797)	(n = 699)	(n = 3,177)
Years as an emergency nurse	14.0 ± 9.1	12.9 ± 9.5	12.4 ± 9.3	12.5 ± 8.9	12.9 ± 9.2
Years as a nurse in current ED	(n = 667)	(n = 692)	(n = 794)	(n = 699)	(n = 3,157)
Years in emergency care in all roles	8.8 ± 7.8	8.4 ± 8.1	8.1 ± 8.1	8.4 ± 7.5	8.4 ± 7.8
Years in emergency care in all roles	(n = 656)	(n = 690)	(n = 779)	(n = 699)	(n = 3,112)
Years in emergency care in all roles	16.3 ± 9.5	15.2 ± 9.9	15.0 ± 10.1	14.7 ± 9.5	15.2 ± 9.7

\*SD, standard deviation

Figures 1 - 7 represent the characteristics of EDs in which the nurses currently worked. Again, based on the pooled data, the majority of the participants (86.8%) worked in a general ED. The geographic locations of EDs ( $n = 3,200$ ) were represented almost equally by facilities located in Large Urban areas (32.2%), Small Urban areas (23.3%), Suburban areas (25.3%), and Rural areas (19.2%). The EDs of 33.5% of the participants had 1-20 beds, 45.0% had 21-40 beds, and 21.6% had 41-100 beds (mean number of ED beds =  $30.1 \pm 17.7$ ). Nurses from small EDs (1-20,000 annual ED patient visits; 17.5%), medium EDs (20,001-50,000 annual ED patient visits; 41.9%), and large EDs (>50,000 annual ED patient visits; 40.6%) were well represented. The EDs of 73.1% of the nurses were part of a non-government, not-for-profit facility. More than half (52.9%) of nurses reported that their ED was a trauma center (either state-certified, ACS-certified, self-designated or some combination of these).

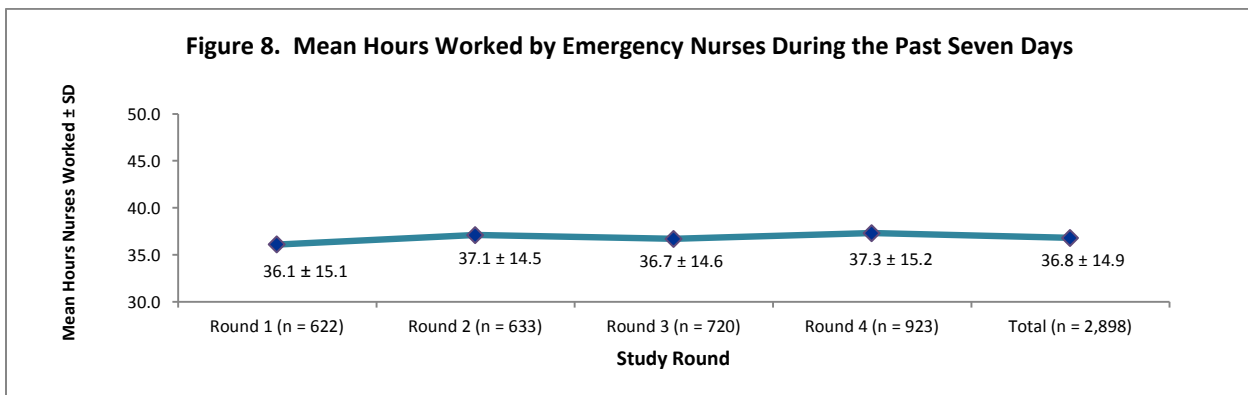


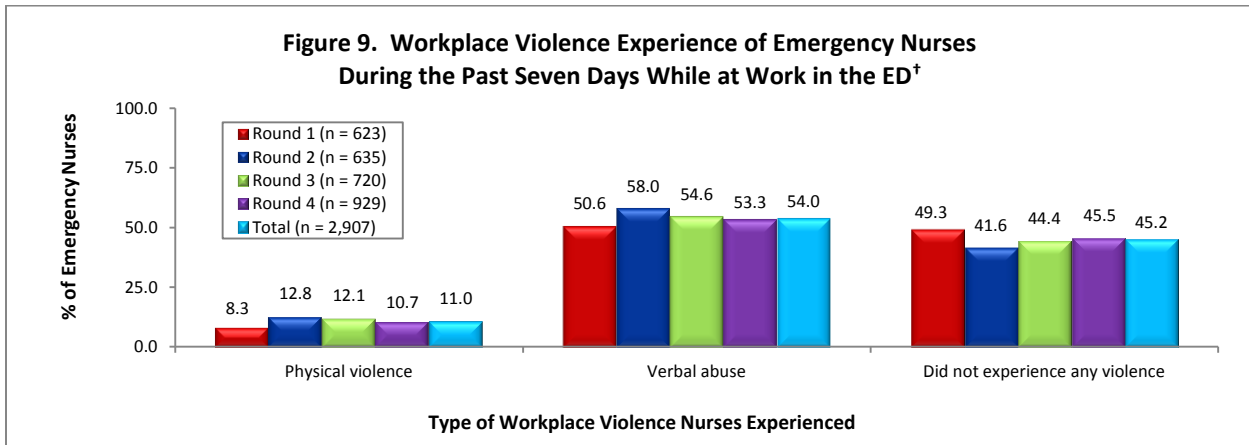




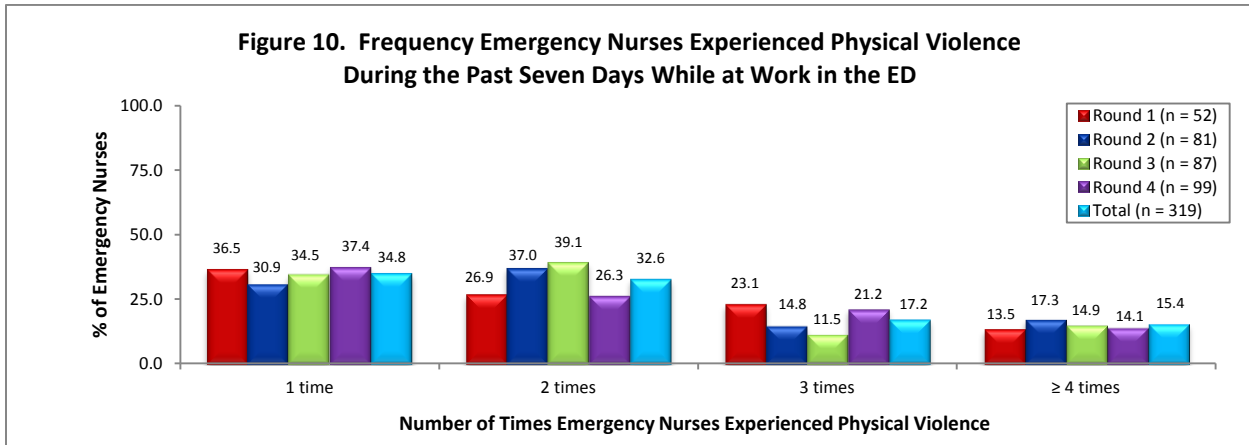
### B. Occurrence of Physical Violence and Verbal Abuse

Based on the pooled data, of the 2,907 emergency nurses who responded to the question of whether they experienced workplace violence recently, 54.8% ( $n = 1,593$ ) reported having experienced physical violence and/or verbal abuse from a patient and/or visitor during the past seven calendar days, during which the nurses worked an average of 36.8 hours. Specifically, 43.8% ( $n = 1,274$ ) reported experiencing verbal abuse only, and 10.2% ( $n = 297$ ) reported experiencing both physical and verbal violence, and 0.8% ( $n = 22$ ) reported experiencing physical violence only. Additionally, of the 319 participants who experienced physical violence, 65.2% ( $n = 208$ ) experienced more than one incident of physical violence from a patient/visitor during the past seven calendar days (Figures 8-10).





<sup>†</sup>Percentages do not equal 100% as respondents could select more than one response.



### Trend of Violence Occurrence During the 12-Month Period of Time

To examine the trend of violence occurrence between each round, three binary dependent variables were evaluated: (1) Any physical or verbal violence, (2) Verbal abuse, and (3) Physical violence. Table 3 displays trend analysis descriptive and inferential test statistics. Table 3 includes overall chi-square statistics, polynomial trend analysis chi-square statistics, and symbols (<, >) indicating significant contrasts on rate variables for consecutive rounds (1 vs 2, 2 vs 3, and 3 vs 4). In addition, odds ratios for linear trends are reported.

**Table 3. Cross-Classified Verbal Abuse and Physical Violence Rates by Round, with Trend Analysis Inferential Tests**

Abuse/Violence Type	All % (n)	% (n) Within Round				Overall $\chi^2$ (p)	Linear		Dev. $\chi^2$ (p)	Quad. $\chi^2$ (p)	Cubic $\chi^2$ (p)
		1	2	3	4		OR	$\chi^2$ (p)			
None	45.2% (1,314)	49.3% (307)	41.6% (264)	44.4% (320)	45.5% (423)						
Any Abuse or Violence	54.8% (1,593)	<b>50.7%</b> >	<b>58.4%</b>	55.6% (400)	54.5% (506)	7.76 (.051)	1.03 (.312)	<b>7.10</b> (.029)	<b>5.52</b> (.019)	2.10 (.147)	
Verbal abuse (VA) only	43.8% (1,274)	42.4% (264)	45.7% (290)	43.5% (313)	43.8% (407)						
Physical violence (PV) only	0.8% (22)	0.2% (1)	0.5% (3)	1.0% (7)	1.2% (11)						
Both PV and VA	10.2% (297)	8.2% (51)	12.3% (78)	11.1% (80)	9.5% (88)						
Verbal abuse (+/- PV)	54.0% (1,571)	<b>50.6%</b> >	<b>58.0%</b>	54.6% (393)	53.3% (495)	7.26 (.064)	1.02 (.564)	<b>7.12</b> (.028)	<b>5.39</b> (.020)	2.27 (.132)	
Physical violence (+/- VA)	11.0% (319)	<b>8.3%</b> >	<b>12.8%</b>	12.1% (87)	10.7% (99)	7.70 (.053)	1.08 (.185)	<b>6.77</b> (.034)	<b>6.36</b> (.012)	0.75 (.387)	
Total N	2,907	623	635	720	929						

Overall violence and verbal abuse rates were fairly high across all rounds (mean = 54.8%, ranging from 50.7% in round 1 to 58.4% in round 2). The overall rate is primarily a function of verbal abuse, with 80% of violent or abusive reports entailing only verbal abuse and no physical violence. Physical violence rarely occurred without verbal abuse (22 cases, or 0.8%, summed across all rounds).

With respect to overall violence and abuse trends, no linear trend component was detected (OR=1.03); however, a significant deviation from linearity was present,  $\chi^2=7.10$ ,  $p=.029$ . This was due to a concave downward pattern in the rates over time,  $\chi^2=5.52$ ,  $p=.019$ . Contrasts of adjacent rounds yielded a significant increase in overall violence and/or abuse between round 1 (50.7%) and round 2 (58.4%),  $\chi^2=7.51$ ,  $p=.006$ .

With respect to verbal abuse rates (with or without physical violence), the same pattern was observed. Specifically, no linear trend component was detected (OR=1.02); however, a significant deviation from linearity was present,  $\chi^2=7.12$ ,  $p=.028$ . This was again due to a concave downward component in the trend across rounds,  $\chi^2=5.39$ ,  $p=.020$ . Contrasts of adjacent rounds yielded a significant increase in verbal abuse between round 1 (50.6%) and round 2 (58.0%),  $\chi^2=6.91$ ,  $p=.009$ .

Tables 4-6 and Figures 11-18 reflect characteristics specific to either the physical violence or verbal abuse experienced by the emergency nurses in the four rounds of the study. The characteristics appeared to be similar across all four rounds. Based on the pooled data, the most

prevalent types of physical violence and verbal abuse were having been grabbed/pulled (47.0%) and having been yelled/shouted at (89.6%), respectively. Patients and their relatives were the main perpetrators in all cases with 97.1% ( $n = 312$ ) of physical incidents and 91.0% ( $n = 1,417$ ) of verbal incidents having involved a patient. The participants ( $n = 302$ ) who experienced physical violence indicated that characteristics of patient-perpetrators of physical violence included: being under the influence of alcohol (57.0%), being under the influence of illicit/prescription drugs (48.0%) and/or were psychiatric patients (44.0%). The majority (73.4%) of these participants perceived the patient-perpetrator of physical violence to be lucid at the time of the incident.

Over three-quarters (80.6%) of the incidents of physical violence occurred in a patient's room, 23.2% in a corridor/hallway/stairwell/elevator, and 14.7% at the nurses' station. The most frequently reported activities that emergency nurses were involved in at the time of a violent incident were triaging a patient (38.2%), restraining/subduing a patient (33.8%) and performing an invasive procedure (30.9%). Of the participants who were victims of workplace physical violence ( $n = 319$ ), 15.0% sustained a physical injury, with the most common type of injury being a bruise/contusion/blunt trauma (64.6%).

For nurses who indicated experiencing verbal abuse ( $n = 1,461$ ), roughly two-thirds (60.1%) reported feeling angry about the verbal abuse that they experienced, 39.7% indicated that the incident(s) made them feel anxious, 28.5% felt indifferent to the verbal abuse, and 20.2% felt frightened. Relatively few participants who experienced verbal abuse expressed feelings of depression (6.3%) or sympathy/empathy for the perpetrator (7.2%).

**Table 4. Types of ED Workplace Violence Experienced by the Emergency Nurse Participants†**

Act of Physical Violence	% of Emergency Nurses				
	Round 1 (n = 51)	Round 2 (n = 81)	Round 3 (n = 86)	Round 4 (n = 99)	Total (n = 317)
Hit by person (includes punched and slapped)	43.1%	46.9%	39.5%	44.4%	43.5%
Spit on	33.3%	43.2%	29.1%	30.3%	33.8%
Grabbed/pulled	29.4%	56.8%	41.9%	52.5%	47.0%
Kicked	23.5%	22.2%	26.7%	28.3%	25.6%
Pushed/shoved/thrown	19.6%	38.3%	20.9%	24.2%	26.2%
Hit by thrown object(s)	13.7%	16.0%	24.4%	13.1%	17.0%
Scratched	13.7%	22.2%	20.9%	18.2%	19.2%
Pinched	11.8%	14.8%	23.3%	22.2%	18.9%
Bitten	9.8%	8.6%	7.0%	6.1%	7.6%
Voided/vomited on purposefully	7.8%	6.2%	3.5%	5.1%	5.4%
Hair pulled	2.0%	3.7%	1.2%	1.0%	1.9%
Choked/strangled	0.0%	0.0%	1.2%	0.0%	0.3%
Sexually assaulted	0.0%	1.2%	0.0%	1.0%	0.6%
Shot/shot at	0.0%	0.0%	0.0%	0.0%	0.0%
Stabbed	0.0%	0.0%	0.0%	0.0%	0.0%
<b>Act of Verbal Abuse</b>	<b>Round 1 (n = 297)</b>	<b>Round 2 (n = 333)</b>	<b>Round 3 (n = 366)</b>	<b>Round 4 (n = 459)</b>	<b>Total (n = 1,455)</b>
Called names	64.6%	69.7%	72.4%	71.5%	69.9%
Yelled/shouted at	88.6%	90.4%	88.3%	90.6%	89.6%
Sworn/cursed at	86.5%	89.2%	91.0%	90.0%	89.3%
Threatened with legal action	50.2%	52.3%	51.4%	50.3%	51.0%
Harassed with sexual language/innuendos	23.6%	26.4%	23.0%	23.7%	24.1%
Threatened with physical violence/weapons	21.2%	16.5%	17.8%	21.1%	19.2%

†Percentages do not equal 100% as respondents could select more than one response.

**Table 5. Physical Violence Incidents – Characteristics†**

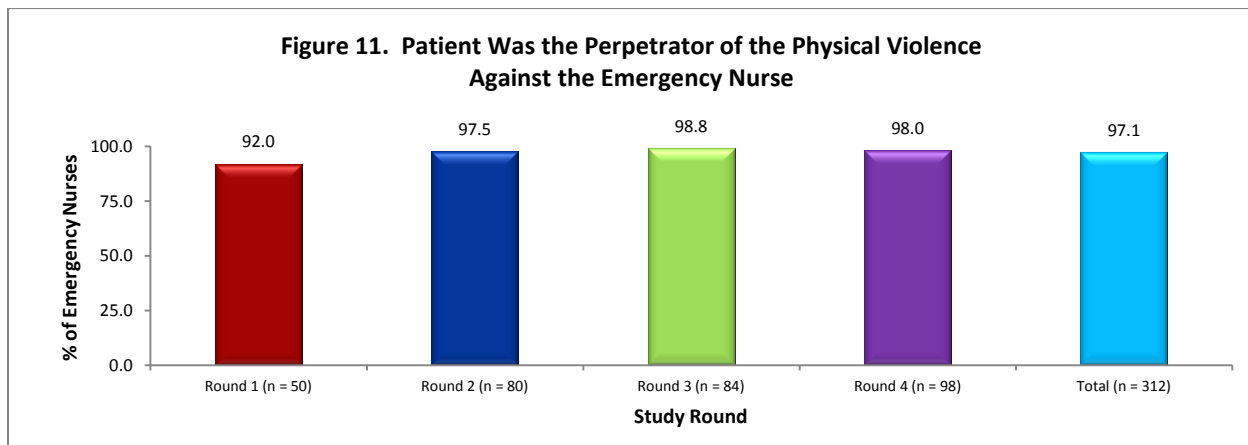
Patient Characteristics (either as the perpetrator or the patient the perpetrator was visiting)	% of Emergency Nurses				
	Round 1 (n = 52)	Round 2 (n = 81)	Round 3 (n = 86)	Round 4 (n = 99)	Total (n = 318)
Under the influence of alcohol	51.9%	60.5%	52.3%	53.5%	54.7%
Under the influence of illicit/prescription drugs	42.3%	55.6%	47.7%	38.4%	45.9%
Psychiatric patient	28.8%	40.7%	54.7%	42.4%	43.1%
Older adult/geriatric patient	21.2%	13.6%	19.8%	13.1%	16.4%
Pediatric patient	15.4%	7.4%	8.1%	6.1%	8.5%
Trauma patient	9.6%	18.5%	9.3%	10.1%	11.9%
Location Where Physical Violence Occurred	Round 1 (n = 52)	Round 2 (n = 81)	Round 3 (n = 87)	Round 4 (n = 99)	Total (n = 319)
Patient room	76.9%	80.2%	75.9%	86.9%	80.6%
Corridor/hallway/stairwell/elevator	21.2%	29.6%	18.4%	23.2%	23.2%
Nurses' station	13.5%	12.3%	20.7%	12.1%	14.7%
Admitting/triage areas	5.8%	13.6%	20.7%	10.1%	13.2%
Lobby/waiting room	5.8%	11.1%	9.2%	8.1%	8.8%
Entrance/exit	3.8%	8.6%	5.7%	1.0%	4.7%
Seclusion/time-out room	1.9%	4.9%	9.2%	3.0%	5.0%
Activities/Procedures Nurse Was Involved at Time of Incident	Round 1 (n = 52)	Round 2 (n = 79)	Round 3 (n = 84)	Round 4 (n = 99)	Total (n = 314)
Triaging patient	38.5%	34.2%	38.1%	41.4%	38.2%
Performing an invasive procedure	30.8%	30.4%	32.1%	30.3%	30.9%
Restraining/subduing	30.8%	39.2%	36.9%	28.3%	33.8%
Transporting patient	5.8%	13.9%	6.0%	5.1%	7.6%
Medical/trauma resuscitation	1.9%	6.3%	4.8%	3.0%	4.1%
Delivering bad news	1.9%	3.8%	4.8%	0.0%	2.5%

†Percentages do not equal 100% as respondents could select more than one response.

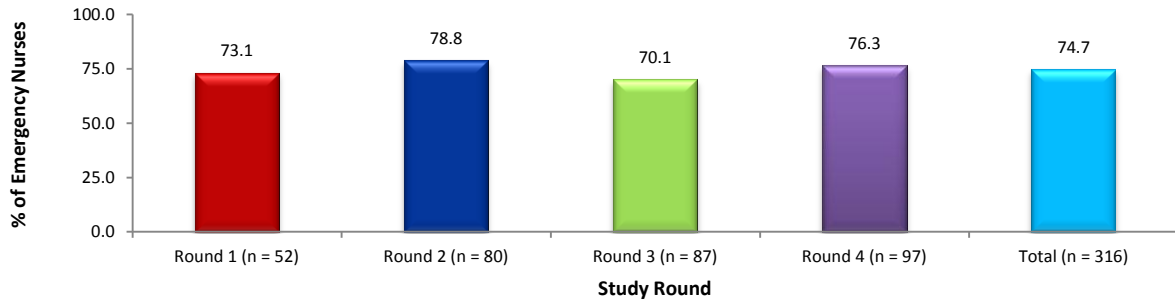
**Table 6. Injuries Sustained From Physical Violence†**

Area of Body Injured	% of Emergency Nurses				
	Round 1 (n = 8)	Round 2 (n = 11)	Round 3 (n = 9)	Round 4 (n = 19)	Total (n = 47)
Arms/hands	50.0%	90.9%	66.7%	78.9%	74.5%
Head/face/neck	50.0%	27.3%	44.4%	26.3%	34.0%
Abdomen/chest	25.0%	9.1%	0.0%	10.5%	10.6%
Legs/feet	25.0%	18.2%	11.1%	0.0%	10.6%
Back/shoulder	12.5%	45.5%	0.0%	31.6%	25.5%
Hip/buttocks/genitals	0.0%	0.0%	0.0%	0.0%	0.0%
Type of Injury to Body	Round 1 (n = 8)	Round 2 (n = 11)	Round 3 (n = 10)	Round 4 (n = 19)	Total (n = 48)
Bruise/contusion/blunt trauma	100.0%	63.6%	50.0%	57.9%	64.6%
Abrasion/scratch	37.5%	54.5%	60.0%	42.1%	47.9%
Psychological	12.5%	18.2%	10.0%	5.3%	10.4%
Sprain/strain/spasm	12.5%	36.4%	10.0%	21.1%	20.8%
Exposure to bodily fluids	0.0%	27.3%	20.0%	15.8%	16.7%
Internal injuries	0.0%	0.0%	0.0%	0.0%	0.0%
Laceration/cut/puncture	0.0%	9.1%	0.0%	5.3%	4.2%
Fracture	0.0%	0.0%	0.0%	0.0%	0.0%

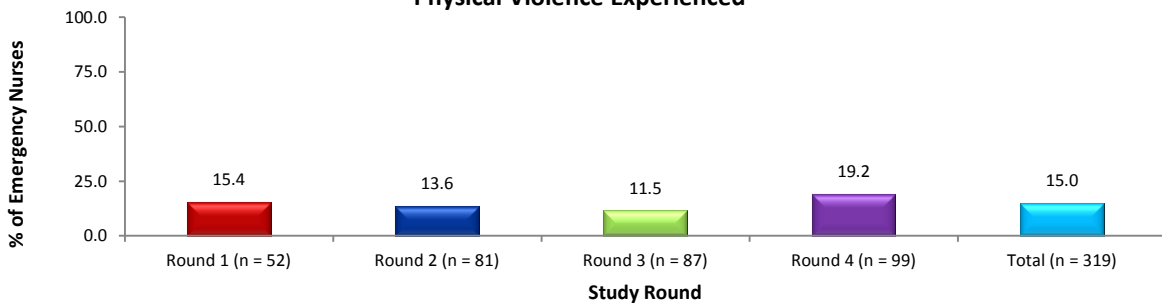
†Percentages do not equal 100% as respondents could select more than one response.



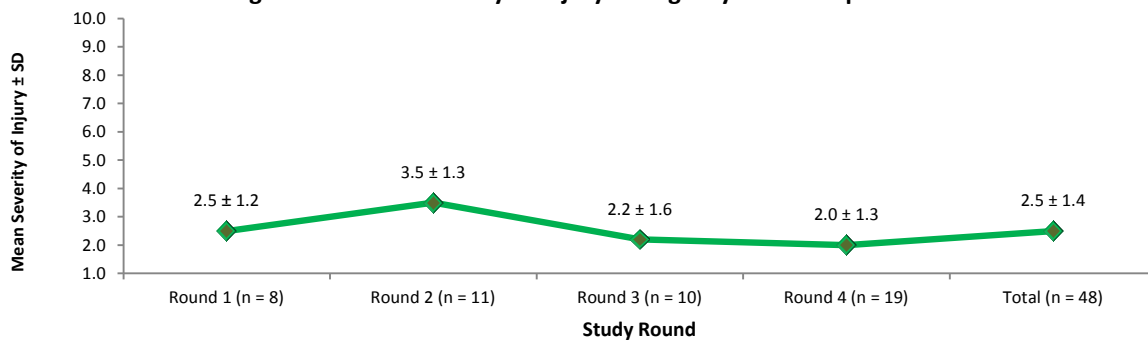
**Figure 12. Perpetrator of the Physical Violence Was Lucid**



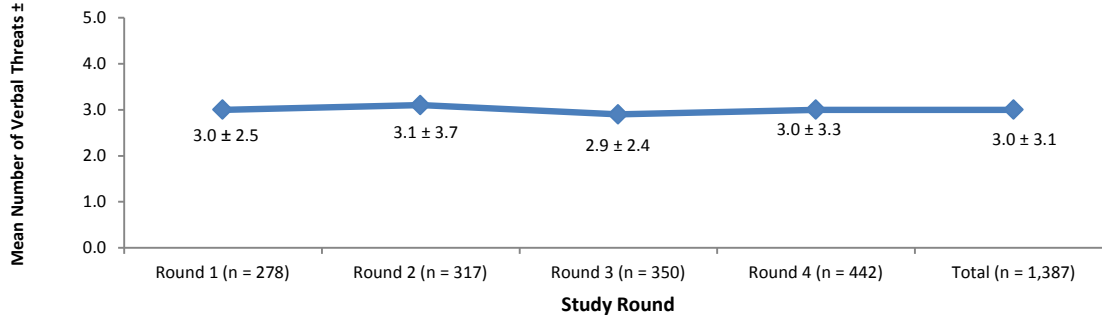
**Figure 13. Emergency Nurse Was Injured as a Result of the Physical Violence Experienced**



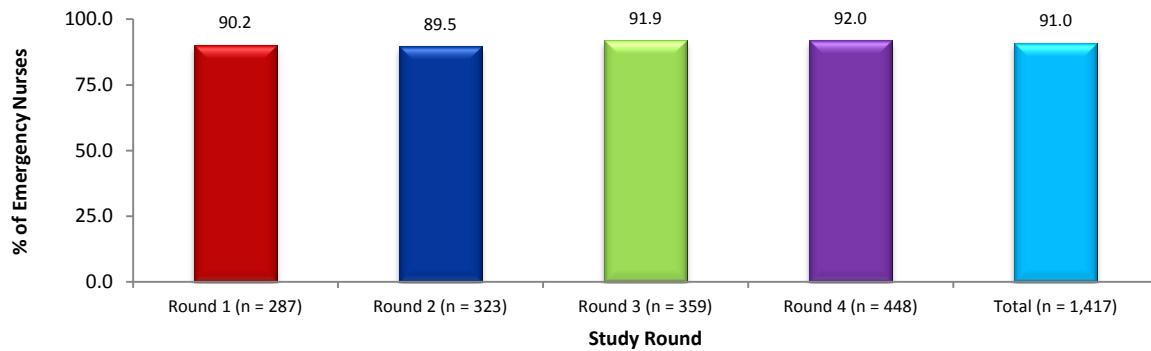
**Figure 14. Mean Severity of Injury Emergency Nurses Experienced**



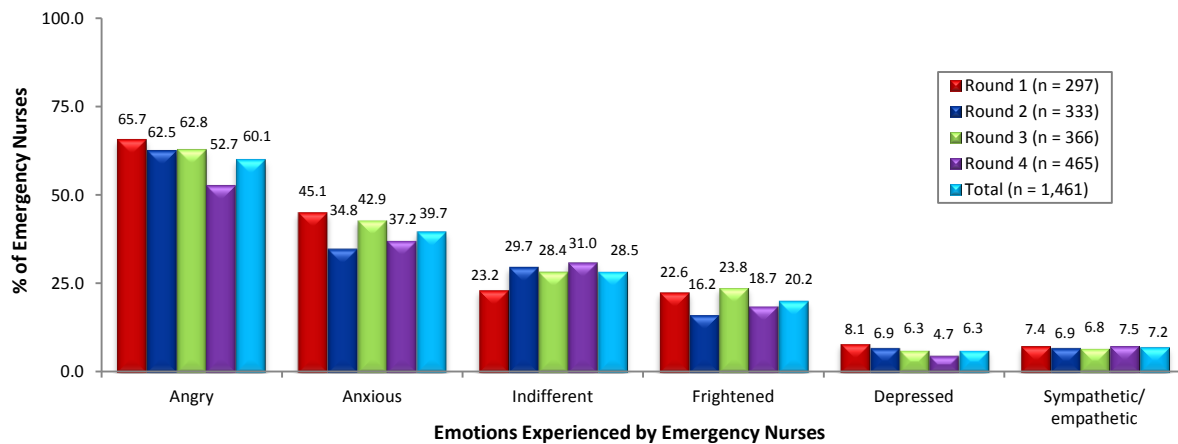
**Figure 15. Mean Number of Verbal Threats Emergency Nurses Experienced During the Past Seven Days While at Work in the ED**



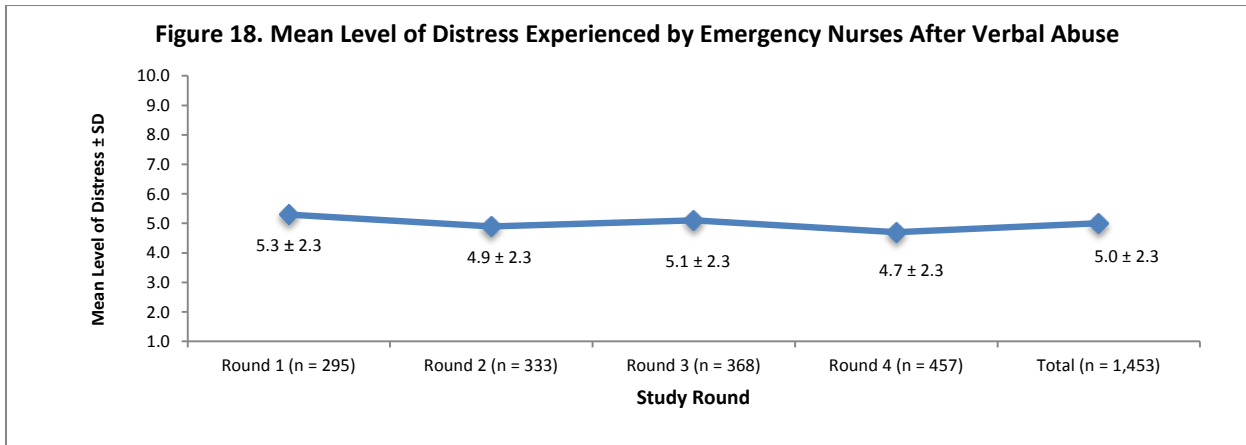
**Figure 16. Patient Was the Perpetrator of the Verbal Abuse Against the Emergency Nurse**



**Figure 17. Emotions Experienced by Emergency Nurses After Verbal Abuse†**



†Percentages do not equal 100% as respondents could select more than one response.



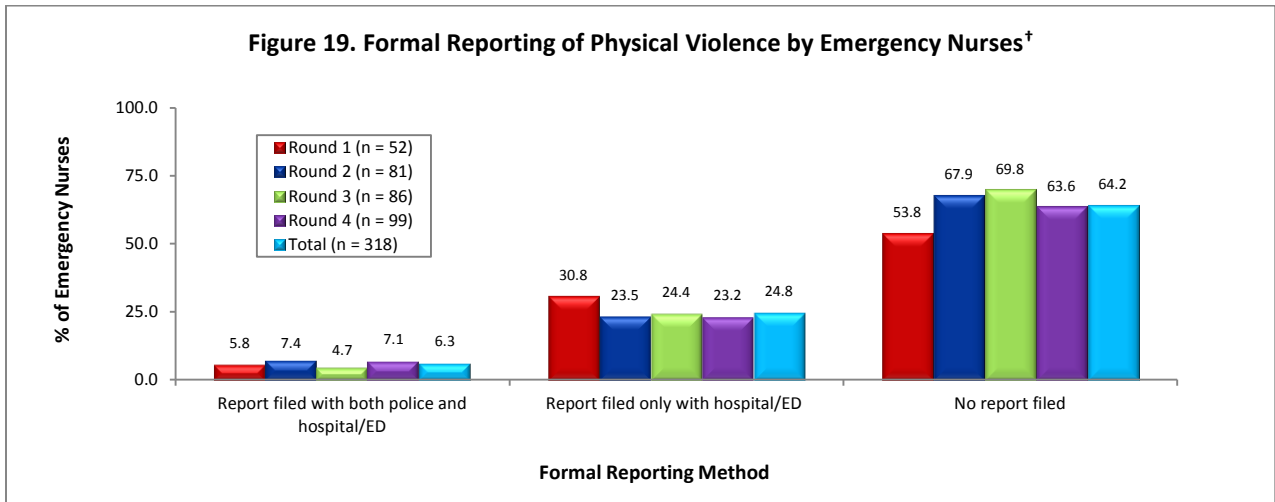
### C. Reporting Workplace Violence

Across all rounds, the nurses who were victims of physical violence/verbal abuse tended not to file a formal report of workplace violence incidents. Based on the pooled data, the majority of the participants who were victims of workplace violence did not file a formal report for the physical violence (64.2%) or the verbal abuse (87.2%) that they experienced. Most participants who experienced physical violence, however, tended to notify security personnel (65.7%), other emergency nurses (64.5%), an immediate supervisor (61.6%), and/or emergency physicians (52.5%). Similarly, most participants who experienced verbal abuse tended to report it to other emergency nurses (60.2%), an immediate supervisor (45.5%), security personnel (44.2%), and/or emergency physicians (38.4%). Only 6.3% of the participants who reported experiencing physical violence during the past 7 days did not notify anyone of the physical incident, while 16.1% of the participants who reported experiencing verbal abuse did not notify anyone of the verbal incident (Table 7 and Figures 19-20).

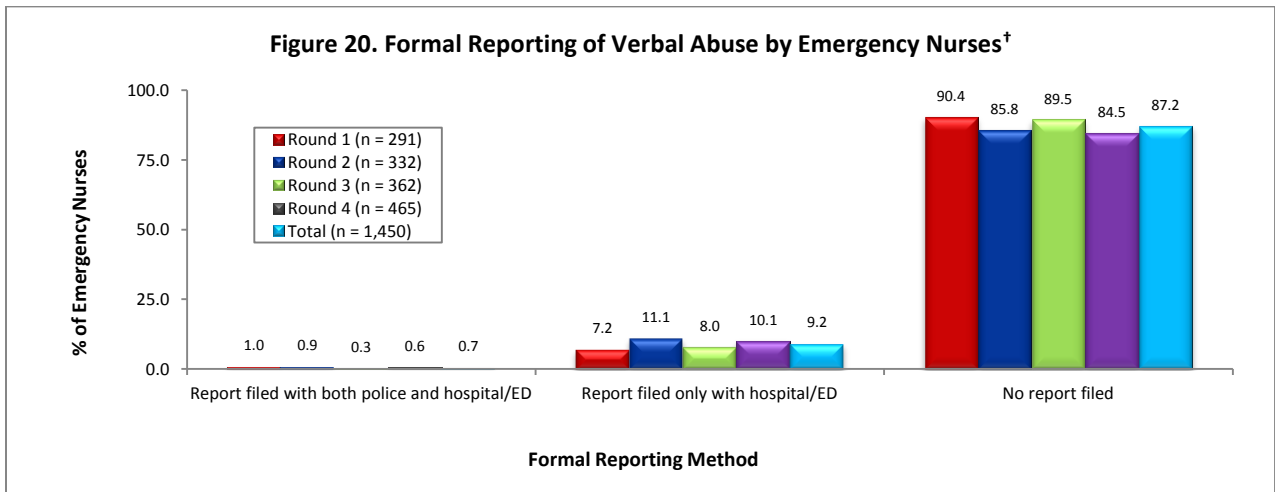
**Table 7. Persons Informed of the Incidents of Workplace Violence†**

Physical violence	% of Emergency Nurses				
	Round 1 (n = 52)	Round 2 (n = 81)	Round 3 (n = 87)	Round 4 (n = 98)	Total (n = 318)
Immediate supervisor	63.5%	58.0%	64.4%	61.2%	61.6%
Security personnel	61.5%	66.7%	72.4%	61.2%	65.7%
Other emergency nurses	61.5%	66.7%	62.1%	66.3%	64.5%
Emergency physicians	53.8%	54.3%	52.9%	50.0%	52.5%
Hospital/ED administration	26.9%	27.2%	18.4%	24.5%	23.9%
Local law enforcement	23.1%	34.6%	13.8%	26.5%	24.5%
Risk management	13.5%	14.8%	6.9%	11.2%	11.3%
Employee health services	5.8%	4.9%	3.4%	4.1%	4.4%
No one notified	1.9%	7.4%	5.7%	8.2%	6.3%
Verbal abuse	Round 1 (n = 296)	Round 2 (n = 333)	Round 3 (n = 367)	Round 4 (n = 457)	Total (n = 1,453)
Other emergency nurses	58.1%	64.0%	59.9%	58.9%	60.2%
Security personnel	47.3%	44.1%	42.5%	43.5%	44.2%
Immediate supervisor	45.6%	41.7%	46.0%	47.7%	45.5%
Emergency physicians	36.8%	40.2%	37.9%	38.5%	38.4%
Hospital/ED administration	13.2%	12.9%	9.8%	10.7%	11.5%
Local law enforcement	9.8%	7.5%	7.6%	9.6%	8.7%
Risk management	3.0%	5.1%	4.4%	4.8%	4.4%
Campus police	1.7%	3.3%	1.9%	2.2%	2.3%
Human resources	0.7%	0.3%	0.3%	0.9%	0.6%
No one notified	16.2%	16.8%	14.4%	16.8%	16.1%

†Percentages do not equal 100% as respondents could select more than one response.

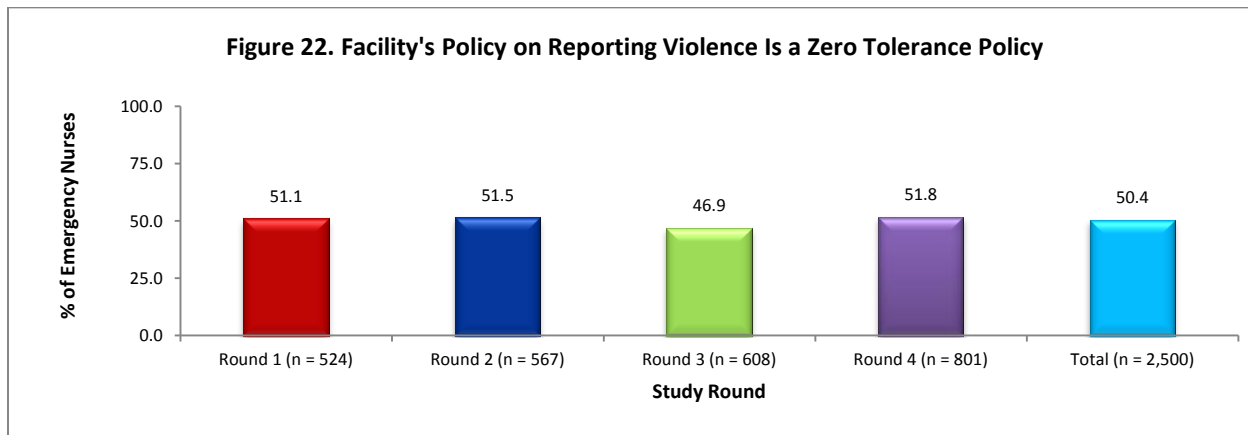
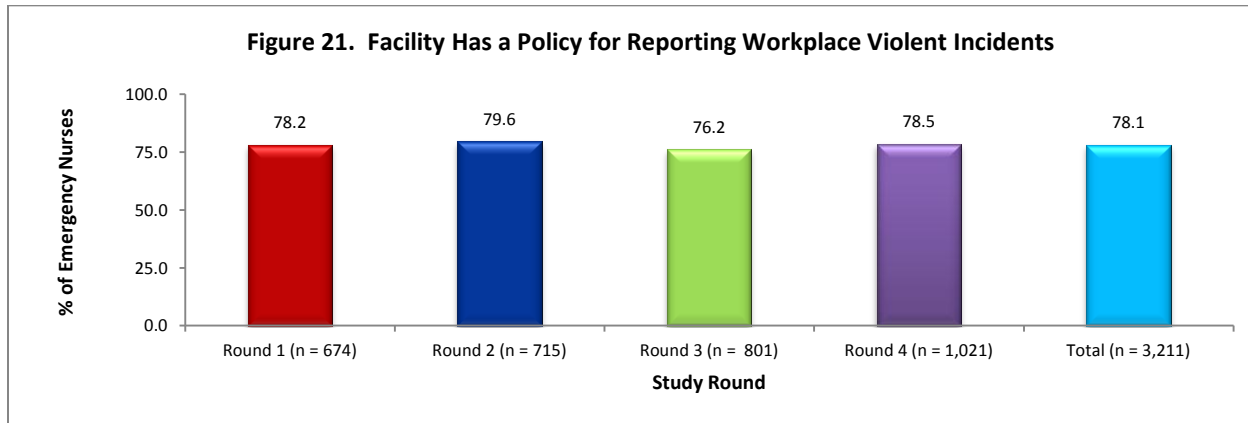


<sup>†</sup> Percentages do not equal 100% as respondents who reported in some other manner or their reporting method was unknown are not included in this figure.



<sup>†</sup> Percentages do not equal 100% as respondents who reported in some other manner or their reporting method was unknown are not included in this figure.

Overall, the majority of all participants (78.1%) reported that their facility had a policy in place for reporting incidents of workplace violence. Of those participants, half (50.4%) indicated that this policy was a zero-tolerance policy (Figures 21-22).



#### D. Processes for Responding to Workplace Violence

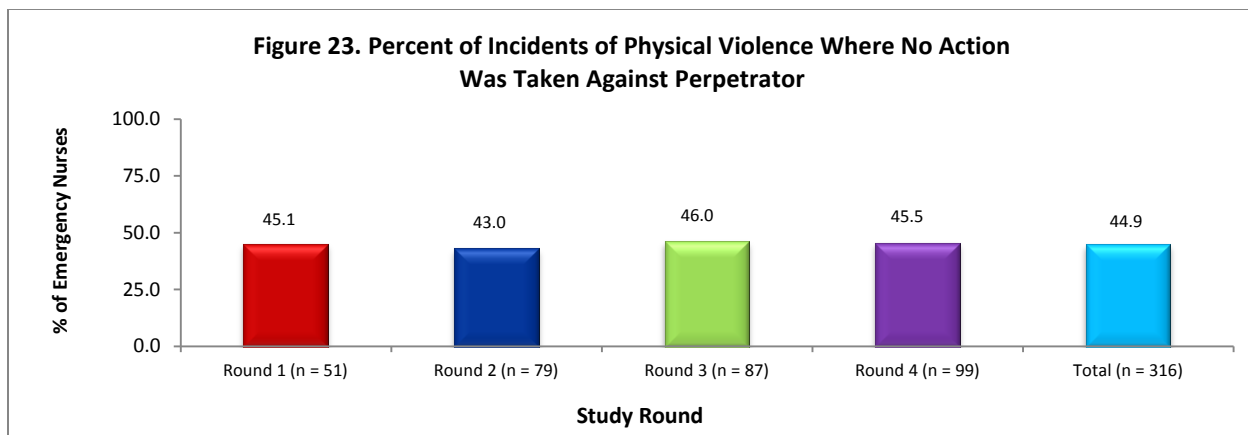
Nurses were asked what actions were taken against the perpetrator as a result of the workplace physical violence (Table 8 and Figures 23-24). Based on the pooled data, about half (44.9%) of the participants who were victims of physical violence indicated that no action was taken, and less than a quarter (23.4%) reported that the perpetrator was given a warning. A small percentage of the perpetrators were transferred to a psychiatric facility ( $n = 36$ , 11.4%). When asked about the ED's response/recommendation to the nurse, almost three-quarters of the participants (74.4%) stated the hospital gave them no response concerning the physical violence they experienced. A few nurses (11.0%) stated that they did not know what the hospital's response was yet. Debriefing of the incident either at the individual level (4.9%) or at the team level (2.9%), was also very low. Three nurses (2.9%) reported that they were blamed for the incident of physical

violence having occurred, and three respondents (1.0%) reported receiving a punitive response. This pattern holds true for all four rounds.

**Table 8. Actions Taken Against Perpetrators of Workplace Violence†**

Physical Violence	% of Emergency Nurses				
	Round 1 (n = 51)	Round 2 (n = 79)	Round 3 (n = 87)	Round 4 (n = 99)	Total (n = 316)
Perpetrator was given a warning	25.5%	26.6%	17.2%	25.3%	23.4%
Perpetrator was transferred to a psychiatric facility	9.8%	11.4%	11.5%	12.1%	11.4%
Perpetrator was asked to leave the ED	7.8%	11.4%	5.7%	10.1%	8.9%
Perpetrator was arrested	7.8%	7.6%	10.3%	8.1%	8.5%
Perpetrator left before any action could be taken	3.9%	5.1%	3.4%	2.0%	3.5%
The patient associated with the perpetrator was treated sooner/faster than other patients	0.0%	2.5%	3.4%	4.0%	2.8%
Verbal Abuse	Round 1 (n = 293)	Round 2 (n = 335)	Round 3 (n = 366)	Round 4 (n = 465)	Total (n = 1459)
Perpetrator was given a warning	27.3%	28.1%	32.0%	30.3%	29.6%
Perpetrator was transferred to a psychiatric facility	6.1%	6.9%	6.3%	7.7%	6.9%
Perpetrator was asked to leave the ED	15.0%	14.6%	14.5%	16.3%	15.2%
Perpetrator was arrested	1.7%	2.1%	1.1%	1.5%	1.6%
Perpetrator left before any action could be taken	9.2%	8.1%	7.4%	9.0%	8.4%
The patient associated with the perpetrator was treated sooner/faster than other patients	6.8%	5.4%	7.1%	7.1%	6.6%

†Percentages do not equal 100% as respondents could select more than one response.



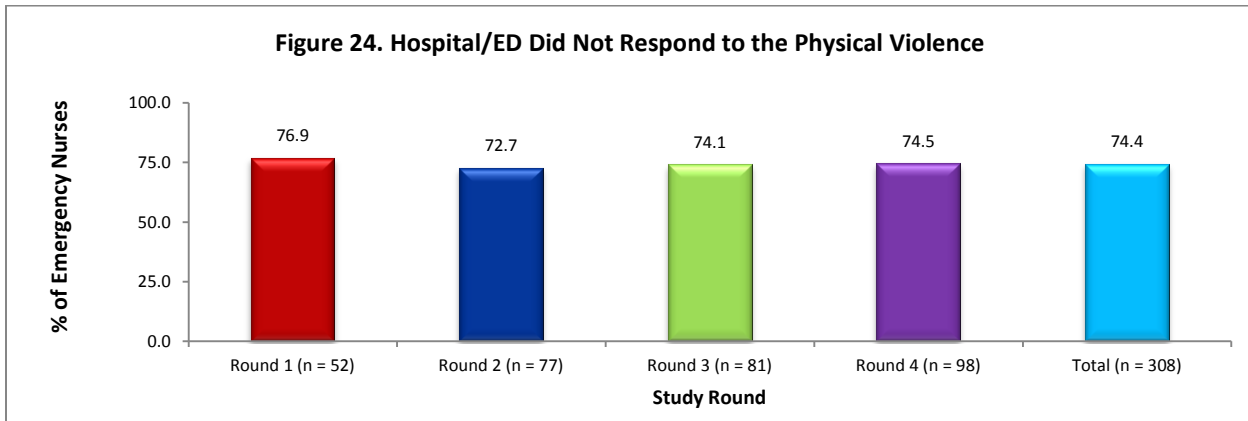
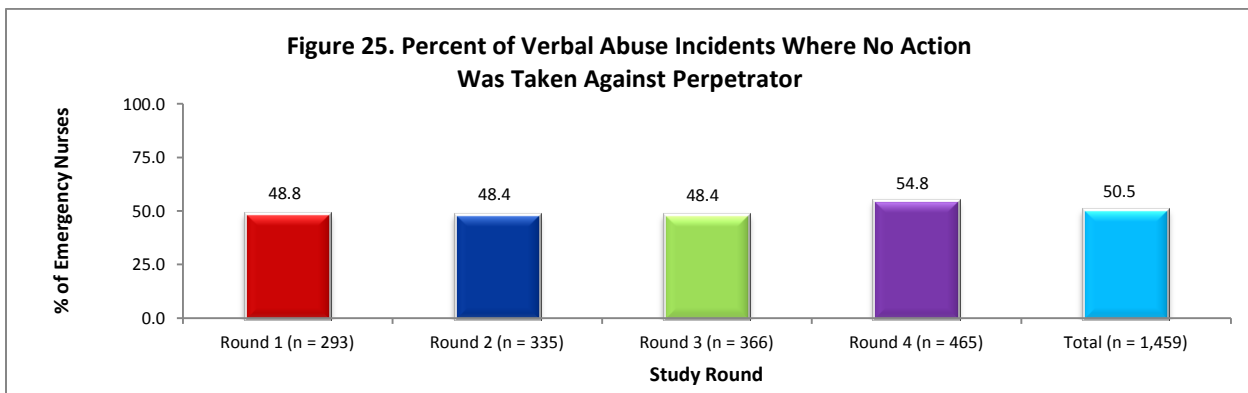
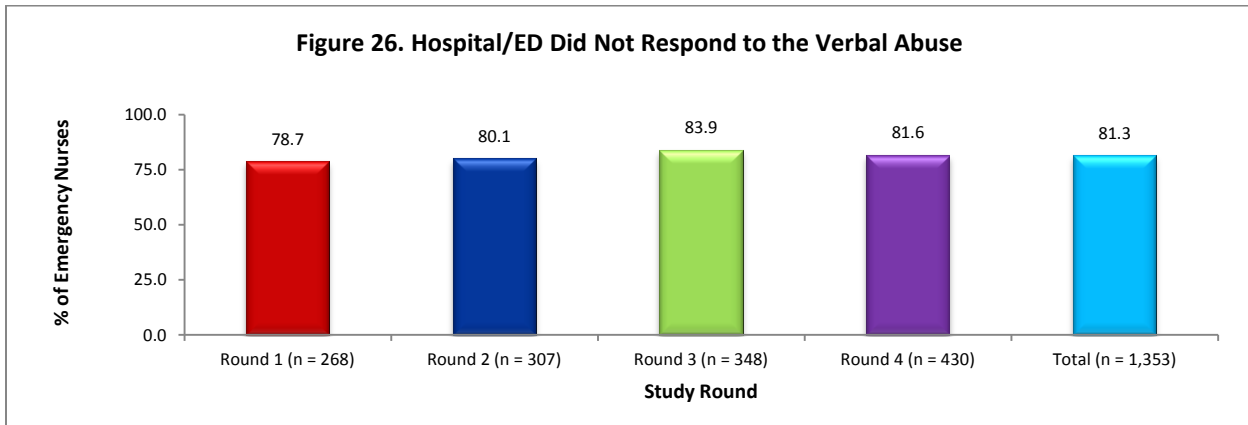
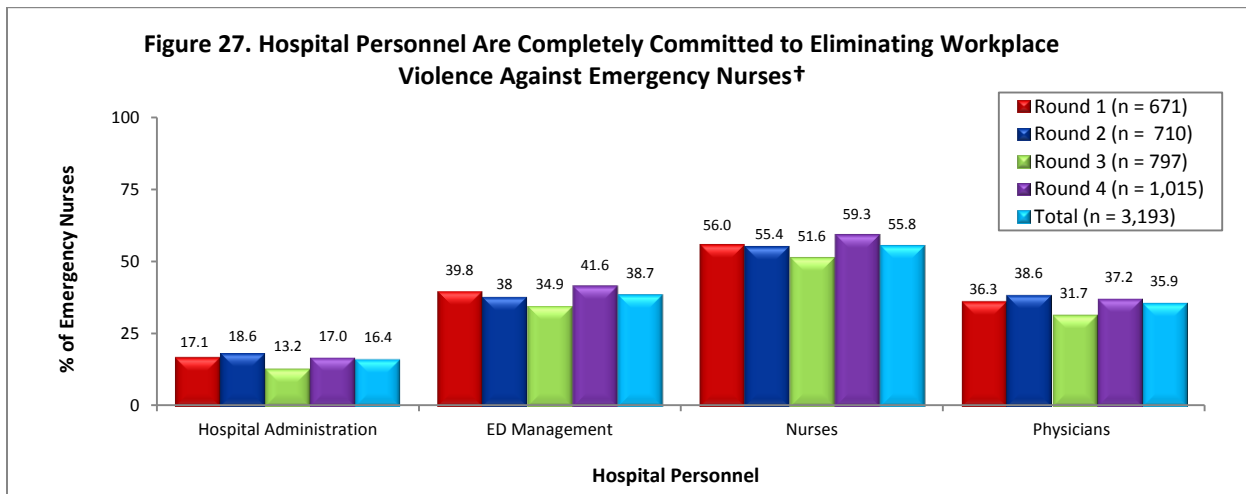


Table 8 and Figures 25-26 represent actions taken against the perpetrator and the ED's response to the nurses who experienced verbal abuse ( $n = 1,459$ ). About half (50.5%) of the participants who were victims of verbal abuse indicated that no action was taken, and more than a quarter (29.6%) reported that the perpetrator was given a warning. 15.2% ( $n = 222$ ) indicated that the perpetrator was asked to leave the ED, while 8.4% stated that perpetrator left before any action could be taken. Ninety-seven participants (6.6%) indicated that the patient who was associated with the violence was treated sooner than other patients. Regarding the hospitals' response to nurses who experienced verbal abuse, more than three-quarters (81.3%) of the nurses indicated that they did not yet receive a response from their hospital. A few participants (6.9%) stated that they did not know what the hospital's response was yet. Thirty-two participants (2.4%) reported that the hospital recommended individual debriefing for the verbal abuse incident. Similar to physical violence, 41 participants (3.0%) reported that they were blamed for the incident of verbal abuse having occurred, and 13 participants (1.0%) reported receiving a punitive response, with 10 (0.7%) having been instructed to write an apology letter to the patient/visitor. Again, this data pattern was similar across all rounds.





When asked to rate the level of commitment by hospital personnel toward eliminating workplace violence, almost two-thirds (61.0%) of the participants reported that hospital administration, ED management, nurses, physicians and other health care workers were somewhat or completely committed to the issue, with nurses reporting that hospital administration were the least committed (Figure 27).



†Percentages do not equal 100% as respondents could select more than one response.

### *E. Factors Associated with Occurrence of Workplace Violence*

Based on pooled data from the four rounds of surveys, a series of logistic regression analyses were performed to identify factors that are predictive of ED violence. As described previously, factors were conceptualized as falling within 10 blocks including Types of ED based on Population Served, Region Served, ED Capacity & Utilization, Facility Type, Security/Personnel Type, Environmental Control Measures, Safety Perception, Training, & Preparedness, Hospital Safety Commitment & Policy, Nurse Demographics, and Nurse Role. Separate analyses were conducted identifying factors predicting (1) physical violence (PV) rates during the past seven days and (2) verbal abuse (VA) rates during the past seven days.

#### ***Factors Associated with Occurrence of Physical Violence***

##### Block 1: PV Rate by Types of EDs Based on Population Served

Table 9 contrasts three types of EDs based on population served (Adult Only, Pediatric Only, and General ED) on PV rates. Overall, 1.2% of PV rate error was explained by population served ( $p < .001$ ). This was primarily due to the very low PV rate in pediatric only setting (1%) as contrasted with the PV rate in the full sample (10.9%).

**Table 9. Block 1: Physical Violence Rate by Population Served**

Population	Frq	PV Rate % (n)	Category (vs Other)				Category Set		
			OR	$r^2$	$\chi^2$	p	$R^2$	$\chi^2$	p
Adult Only	278	9.7% (27)	0.86	0.0%	0.48	.490	1.2%	17.11	<.001
<b>Pediatric Only</b>	99	1.0% (1)	<b>0.08</b>	<b>1.1%</b>	<b>6.28</b>	<b>.012</b>			
<b>General ED</b>	2,529	11.5% (290)	<b>1.61</b>	<b>0.4%</b>	<b>5.40</b>	<b>.020</b>			
ALL Valid	2,906	10.9% (318)							

$r^2$  = Nagelkerke "percent error explained" analog statistics

##### Block 2: PV Rate by Region Served

Table 10 lists PV rates for Rural, Suburban, Small Urban and Large Urban regions. Overall, 0.7% of PV rate error was explained by Region Served ( $p = .016$ ). PV rates tended to increase as population density increases, rising from Rural (8.3%) to Large Urban (13.4%) settings with middling rates in suburban and small urban settings. The rate was significantly above average in large urban settings ( $OR = 1.42$ ,  $p = .005$ ) and significantly below average in rural settings ( $OR = 0.69$ ,  $p = .027$ ).

**Table 10. Block 2: Physical Violence Rate by Region Served**

Region Type	Frq	PV Rate % (n)	Category (vs Other)				Category Set		
			OR	$r^2$	$\chi^2$	p	$R^2$	$\chi^2$	p
<b>Large urban</b>	927	13.4% (124)	<b>1.42</b>	<b>0.5%</b>	<b>8.05</b>	<b>.005</b>	0.7%	10.36	.016
Small urban	683	11.0% (75)	1.00	0.0%	0.00	.988			
Suburban	726	9.9% (72)	0.86	0.1%	1.09	.297			
<b>Rural</b>	564	8.3% (47)	<b>0.69</b>	<b>0.4%</b>	<b>4.92</b>	<b>.027</b>			
ALL Valid	2,900	11.0% (318)							

$r^2$  = Nagelkerke "percent error explained" analog statistics

### Block 3: PV Rate by ED Capacity and Utilization

Table 11 lists the four capacity and utilization variables included as standardized predictors in zero-order and multi-predictor models. The block of four capacity and utilization items accounted for 2.8% of variation in PV rates ( $p < .001$ ). Overall, as Total ED Beds, Additional Treatment Space, Use of Added Space, and Total ED Visits increased, the odds of physical violence increased. Two items (Use of Added Space and Total Annual Visits) contributed 1.1% uniquely to the 2.8% error reduction; however, most variation was accounted for in common by the set of four items (1.5%) and all items showed a significant zero-order relationship with the PV rate.

**Table 11. Block 3: Physical Violence Rate by ED Capacity and Utilization**

Predictor	Mean	SD	Zero-order				3 <sup>rd</sup> -order				Predictor Set		
			OR	r <sup>2</sup>	χ <sup>2</sup>	p	OR	Δr <sup>2</sup>	χ <sup>2</sup>	p	R <sup>2</sup>	χ <sup>2</sup>	p
Total ED Beds	29.9	17.2	1.15	0.4%	6.54	.011	0.96	0.0%	0.32	.575	2.8%	41.26	<.001
Additional treatment spaces	6.4	3.7	1.32	1.4%	19.91	<.001	1.10	0.1%	1.41	.235			
Use of added spaces	15.2	11.7	1.40	2.2%	30.77	<.001	1.28	0.8%	12.27	<.001			
Total annual ED visits	5.6	1.9	1.31	1.3%	18.59	<.001	1.21	0.3%	4.93	.026			

OR's are based on standardized predictors (following mean fill for missing data, N=2,907).

Unique Var: 1.3%  
Common Var: 1.5%

### Block 4: PV Rate by Facility Type

Table 12 reports PV rates and tests for Facility Type, as defined by ownership status (private, not-for-profit, government) and trauma center certification/status. Overall, 1.1% of variation was accounted for by Facility Type ( $p = .023$ ), but this effect was almost entirely due to the contrast of ACS trauma center certification (versus all other groups). Specifically, physical violence rates were substantially higher in ACS-certified trauma centers (14.3%) versus the full sample rate (11.0%), OR=1.35,  $p = .001$ .

**Table 12. Block 4: Physical Violence Rate by Facility Type**

Facility Type	Frq	PV Rate % (n)	Category (vs Other)				Category Set		
			OR	r <sup>2</sup>	χ <sup>2</sup>	p	R <sup>2</sup>	χ <sup>2</sup>	p
Non-gov't, not-for-profit	2,107	10.7% (225)	0.89	0.0%	0.72	.396	0.3%	4.40	.222
Investor-owned, for-profit	475	12.4% (59)	1.18	0.1%	1.20	.273			
State or local gov't	241	12.4% (30)	1.17	0.0%	0.58	.447			
Federal/Military/VA	73	5.5% (4)	0.46	0.2%	2.21	.137			
ALL Valid	2,896	11.0% (318)							
Not a trauma center	1,382	9.8% (136)	0.88	0.3%	3.62	.057	0.9%	12.68	.013
Trauma center	1,510	12.1% (182)	1.11	"	"	"			
<b>ACS certified</b>	821	14.3% (117)	1.35	0.8%	11.87	.001			
State certified	1,016	11.8% (120)	1.08	0.1%	1.05	.305			
Self-designated	155	12.3% (19)	1.13	0.0%	0.26	.611			
ALL Valid	2,892	11.0% (318)							
Item	6 <sup>th</sup> -order					Predictor Set			
	OR	Δr <sup>2</sup>	χ <sup>2</sup>	p		R <sup>2</sup>	χ <sup>2</sup>	p	
Inv.-owned, for-profit (vs NFP)	1.26	0.2%	2.63	.105	1.1%	16.28	.023		
State or local gov't (vs NFP)	1.16	0.0%	0.60	.437					
Fed/Military/VA (vs NFP)	0.68	0.2%	2.57	.109					
Trauma center	0.91	0.0%	0.60	.440					
<b>ACS certified</b>	1.60	0.8%	10.85	.001					
State certified	1.09	0.0%	0.39	.533					
Self-designated	1.03	0.0%	0.02	.900					

Note: Trauma Center sub-categories are not mutually exclusive, 11 TCs denied all 3 subtype designations  
Mean fill for multi-variable models

Unique Var: 1.1%  
Common Var: 0.0%

### Block 5: PV Rate by Security Type and Personnel

Table 13 reports PV rates and tests for Security Type and Personnel. All predictors were binary, and categories were not mutually exclusive. Overall, 1.5% of PV variation was accounted for by the predictor set ( $p=.002$ ). With respect to zero-order relationships, PV rates were lower when security was absent (6.3%) and higher given police/sheriff security (13.9%) and private security (14.7%). In the multi-variable model, the presence of hospital-employed, police/sheriff and private security were each associated with a higher odds of physical violence (ORs = 1.45, 1.43, and 1.97, respectively). This could be due to the fact that emergency departments with higher physical violence rates were more likely equipped with police/sheriff security and/or private security. Finally, controlling for other factors, the presence of 24/7 security was associated with lower odds of physical violence (OR=0.71,  $p=.018$ ).

**Table 13. Block 5: Physical Violence Rate by Security Type and Personnel**

Security Type and Personnel	Frq	PV Rate % (n)	Category (vs Other)				6 <sup>th</sup> -order				Predictor Set						
			OR	r <sup>2</sup>	χ <sup>2</sup>	p	OR	Δr <sup>2</sup>	χ <sup>2</sup>	p	R <sup>2</sup>	χ <sup>2</sup>	p				
<b>No security</b>	160	6.3% (10)	<b>0.53</b>	<b>0.3%</b>	<b>4.46</b>	<b>.035</b>											
Any security	2,747	11.2% (309)	1.90	"	"	"								1.5%	22.45	.002	
<b>Hospital-employed</b>	2,082	10.9% (227)	0.97	0.0%	0.04	.847	<b>1.45</b>	<b>0.3%</b>	<b>3.97</b>	<b>.046</b>							
<b>Police/sheriff</b>	432	13.9% (60)	<b>1.38</b>	<b>0.3%</b>	<b>4.17</b>	<b>.041</b>	<b>1.43</b>	<b>0.3%</b>	<b>5.13</b>	<b>.023</b>							
Campus police	168	8.9% (15)	0.79	0.1	0.81	.369	0.96	0.0%	0.02	.875							
<b>Private Security</b>	497	14.7% (73)	<b>1.51</b>	<b>0.5%</b>	<b>7.90</b>	<b>.005</b>	<b>1.97</b>	<b>0.8%</b>	<b>11.39</b>	<b>&lt;.001</b>							
Other	75	8.0% (6)	0.70	0.1%	0.76	.384	0.87	0.0%	0.09	.766							
Security based in ED	1,583	11.4% (181)	1.03	0.0%	0.08	.780	1.12	0.0%	0.60	.438							
<b>24/7 security</b>	1,916	10.5% (201)	0.78	0.3%	3.71	.054	<b>0.71</b>	<b>0.4%</b>	<b>5.57</b>	<b>.018</b>							
ALL Valid	2,907	11.0% (319)															

For "Security Based in ED", 179 did not respond (Total N = 2728); Mean fill employed for multi-variable models.  
For "24-7 Security", 172 did not respond (Total N = 2735); Mean fill employed for multi-variable models.  
For "24/7 Security", responses were adjusted to "Yes" if item 12 sum indicated 24/7 Security.  
Item 12 sum (Weekly Security Hours) excluded due to high multi-collinearity (with 24/7 Security).

Unique Var: 1.5%  
Common Var: 0.0%

### Block 6: PV Rate by Environmental Control Measures (ECMs)

The 19 ECM categories were binary categories, and not mutually exclusive. Multi-variable models included the full set of 19, dummy-coded. Overall, the set of ECMs did not account for significant variation in physical violence rates ( $p=.326$ ). With respect to zero-order relationships, only two ECMs were significantly associated with lower odds of physical violence, security batons ( $OR=0.69$ ,  $p=.043$ ) and panic button/silent alarm ( $OR=0.74$ ,  $p=.024$ ). Controlling for other items, the effect for panic button was retained ( $OR=0.71$ ,  $p=.013$ ). It is noted, however, that given the large block of 19 predictors for this factor and marginal significance levels, the number of “significant” ECMs may be due to chance expectations (Table 14).

**Table 14. Block 6: Physical Violence Rate by Environmental Control Measures (ECMs)**

Security Type and Personnel	Frq No	Frq Yes	PV Rate   Y % (n)	Yes (vs No)				18 <sup>th</sup> -order				Predictor Set		
				OR	r <sup>2</sup>	χ <sup>2</sup>	p	OR	Δr <sup>2</sup>	χ <sup>2</sup>	p	R <sup>2</sup>	χ <sup>2</sup>	p
Bullet-proof glass	2,449	287	8.7% (25)	0.75	0.1%	1.88	.171	0.78	0.1%	1.20	.273	1.5%	21.20	.326
Enclosed nurses' station	2,535	313	9.6% (30)	0.85	0.0%	0.63	.426	0.92	0.0%	0.15	.701			
Handcuffs	2,194	540	10.0% (57)	0.88	0.1%	0.69	.404	1.01	0.0%	0.00	.969			
<b>Security batons</b>	2,292	411	8.3% (34)	<b>0.69</b>	<b>0.3%</b>	<b>4.10</b>	<b>.043</b>	0.67	0.2%	3.27	.071			
Pseudonym for call code	628	2,217	10.6% (234)	0.82	0.1%	1.99	.158	0.80	0.2%	2.43	.119			
Mace	2,373	271	10.0% (27)	0.87	0.0%	0.47	.491	1.02	0.0%	0.01	.919			
Limits on number of visitors	1,080	1,778	10.7% (191)	0.97	0.0%	0.05	.818	0.98	0.0%	0.04	.850			
Locked treatment spaces	2,120	703	10.1% (71)	0.90	0.0%	0.59	.443	0.92	0.0%	0.31	.575			
Locked/coded ED entry	552	2,310	10.9% (252)	0.97	0.0%	0.05	.828	1.02	0.0%	0.02	.886			
Mirrors for hidden spaces	1,961	843	10.7% (90)	0.96	0.0%	0.09	.761	1.03	0.0%	0.04	.849			
<b>Panic button/silent alarm</b>	720	2,126	10.1% (215)	<b>0.74</b>	<b>0.4%</b>	<b>5.07</b>	<b>.024</b>	<b>0.71</b>	<b>0.4%</b>	<b>6.18</b>	<b>.013</b>			
Physical/leather restraints	334	2,536	10.9% (277)	1.08	0.0%	0.17	.679	1.09	0.0%	0.19	.665			
Personal search	1,297	1,527	11.1% (170)	1.05	0.0%	0.18	.675	1.08	0.0%	0.32	.571			
Chemical restraints	680	2,123	11.2% (238)	1.14	0.1%	0.79	.374	1.12	0.0%	0.53	.466			
Safe for cash payments	763	1,762	11.6% (205)	1.17	0.1%	1.30	.254	1.22	0.1%	1.76	.185			
Security cameras	378	2,463	10.9% (269)	1.07	0.0%	0.13	.723	1.12	0.0%	0.35	.553			
Security signage	1,454	1,190	11.0% (131)	0.97	0.0%	0.08	.783	1.00	0.0%	0.00	.982			
Visitor tag/badge	1,561	1,268	11.6% (147)	1.12	0.1%	0.84	.359	1.19	0.1%	1.86	.173			
Well-lit areas in the ED	261	2,594	10.6% (276)	0.74	0.2%	2.27	.132	0.74	0.2%	2.39	.122			
ALL Valid		2,907	11.0% (319)											

Mean fill for multi-variable models.

Unique Var: 1.4%  
Common Var: 0.0%

**Block 7: PV Rate by Safety Perception, Training, and Preparedness**

Table 15 lists PV rates, odds ratios and inferential tests for zero-order models and a model including all predictors in this set. Safety and Preparedness ratings were standardized, and attendance and training variables were dummy coded in multi-predictor models. Overall, safety perception, training and preparedness accounted for 7.2% of error variation ( $p < .001$ ). 6.8% was uniquely attributable to specific items, but almost all of this was due to one item, the Nurse Safety Rating. This rating accounted for 6.2% of PV error alone ( $OR = 0.56, p < .001$ ), and 6.0% controlling for other items in the set ( $OR = .49, p < .001$ ). The Preparedness Rating accounted for 0.6% of PV error variation alone ( $OR = .84, p = .004$ ), and only 0.4% uniquely ( $OR = 1.21, p = .013$ ). In general, higher safety ratings were associated with lower rates of physical violence (with odds of physical violence dropping approximately in half for every one standard deviation on the rating). Attending a training course or providing training (mandatory or otherwise) showed no substantial impact on PV rates.

**Table 15. Block 7: Physical Violence Rate by Safety Perception, Training, and Preparedness**

Standardized Predictors	Frq	Mean	SD	Zero-order				6 <sup>th</sup> -order				Predictor Set		
				OR	r <sup>2</sup>	χ <sup>2</sup>	p	OR	Δr <sup>2</sup>	χ <sup>2</sup>	p	R <sup>2</sup>	χ <sup>2</sup>	p
<b>Nurse safety rating</b>	2,886	5.08	2.14	<b>0.56</b>	<b>6.2%</b>	<b>85.72</b>	<b>&lt;.001</b>	<b>0.49</b>	<b>6.0%</b>	<b>78.20</b>	<b>&lt;.001</b>	7.2%	98.71	<.001
<b>Preparedness rating</b>	2,885	5.36	2.21	<b>0.84</b>	<b>0.6%</b>	<b>8.42</b>	<b>.004</b>	<b>1.21</b>	<b>0.4%</b>	<b>6.21</b>	<b>.013</b>			
Categorical Predictors	Frq	PV Rate % (n)		Category (vs Other)										
Never attended training	601	10.8% (65)		1.00	0.0%	0.00	.976							
Attended training course	2,884	10.9% (248)		1.00	"	"	"							
Attended at current hospital	1,602	10.0% (161)		0.83	0.2%	2.37	.123	0.83	0.1%	0.78	.378			
Attended at other location	441	12.5% (55)		1.21	0.1%	1.41	.235	1.20	0.1%	0.77	.381			
Attended at both	241	13.3% (32)		1.29	0.1%	1.60	.206	1.14	0.0%	0.22	.636			
No training provided	211	10.9% (23)		0.99	0.0%	0.00	.973							
Mandatory training	1,457	10.8% (158)		0.97	0.0%	0.05	.819	1.55	0.2%	2.37	.124			
Training not mandatory	1,039	11.2% (116)		1.03	0.0%	0.06	.800	1.26	0.1%	0.84	.359			
ALL valid	2,907	11.0% (319)												

Categorical predictors are dummy-coded in multi-predictor models.  
Mean fill used for multi-predictor models.

Unique Var: 6.8%  
Common Var: 0.4%

### Block 8: PV Rate by Hospital Safety Commitment and Policy

Table 16 reports PV rates, odds ratios and inferential tests for zero-order models and a model including all predictors in this set. Commitment predictors were standardized. Three tolerance policy categories were examined: (1) No Reporting Policy, (2) No Identified Zero-Tolerance Reporting Policy, and (3) A Zero-Tolerance Reporting Policy. Tolerance policy categories were mutually exclusive and dummy coded in the multi-predictor model.

Overall, hospital safety commitment and policy accounted for 5.8% of error in physical violence rates ( $p < .001$ ). All items in this set demonstrated significant zero-order effects, and much of the 5.8% (3.8% was common error) was attributed to shared effects of items. Overall, higher commitment and the presence of reporting policies (especially zero-tolerance policies) were associated with a lower odds of physical violence. Hospitals with no reporting policy had an 18.1% PV rate, hospitals with a non-zero tolerance reporting policy had a 12.3% PV rate, and the lowest rate was in settings with zero-tolerance reporting policy (8.4%). Two commitment categories contributed uniquely to the multi-predictor model – Hospital Administration commitment (OR = .73,  $p < .001$ ) and ED Management commitment (OR=0.76,  $p < .001$ ).

**Table 16. Block 8: Physical Violence Rate by Hospital Safety Commitment and Policy Table**

Standardized Predictors	Frq	Mean	SD	Zero-order				6 <sup>th</sup> -order				Predictor Set					
				OR	r <sup>2</sup>	χ <sup>2</sup>	p	OR	Δr <sup>2</sup>	χ <sup>2</sup>	p	R <sup>2</sup>	χ <sup>2</sup>	p			
Commitment rating																	
Hospital administration	2,893	2.59	0.96	<b>0.61</b>	<b>4.8%</b>	<b>68.59</b>	<b>&lt;.001</b>	<b>0.73</b>	<b>0.9%</b>	<b>14.16</b>	<b>&lt;.001</b>	5.8%	85.19	<.001			
ED management	2,898	3.10	0.89	<b>0.64</b>	<b>4.5%</b>	<b>67.40</b>	<b>&lt;.001</b>	<b>0.76</b>	<b>0.8%</b>	<b>11.61</b>	<b>&lt;.001</b>						
Nurses	2,896	3.49	0.64	<b>0.86</b>	<b>0.5%</b>	<b>7.55</b>	<b>.006</b>	1.03	0.0%	0.15	.703						
Physicians	2,886	3.13	0.81	<b>0.83</b>	<b>0.8%</b>	<b>11.28</b>	<b>&lt;.001</b>	1.06	0.0%	0.42	.518						
Other healthcare workers	2,858	3.16	0.79	<b>0.82</b>	<b>0.8%</b>	<b>12.50</b>	<b>&lt;.001</b>	1.02	0.0%	0.07	.792						
Categorical Predictors	Frq	PV Rate % (n)		Category (vs Other)													
No reporting policy	310	18.1% (56)		<b>1.91</b>	<b>1.1%</b>	<b>0.00</b>	<b>&lt;.001</b>										
Reporting policy	2,268	10.4% (235)		0.524	"	"	"										
No identified zero tolerance	1,131	12.3% (139)		1.19	0.2%	2.37	.156	0.80	0.1%	1.45	.229						
Zero tolerance	1,137	8.4% (96)		<b>0.59</b>	<b>1.3%</b>	<b>1.41</b>	<b>&lt;.001</b>	0.74	0.1%	2.07	.150						
ALL valid	2,907	11.0% (319)															

Categorical predictors are dummy-coded in multi-predictor models.  
Mean fill used for multi-predictor models.

Unique Var: 2.0%  
Common Var: 3.8%

### Block 9: PV Rate by Nurse Demographic Variables

Table 17 lists PV rates and associated statistics for nurse demographic variables. The six age group categories were reduced to four categories, collapsing low frequency categories at the extremes of the age distribution. All predictors were dummy coded in the multi-predictor model (Age reference category = 18 to 34).

Overall, the demographic variables accounted for 1.2% of PV rate variation ( $p=.002$ ). Both items contributed uniquely to the effect. Male nurses reported higher PV rates than female nurses (15.0% versus 10.3%,  $p=.005$ ). For older ages, PV rates tended to decline, from 13.8% in the youngest category (18 to 34) to 8.2% in the oldest category (55 or older). In the multiple predictor model, effects for both items were retained. The odds of physical violence were 1.78 times higher in the youngest category versus the oldest category ( $OR=0.56$ ,  $p=.005$ ), and men reported higher odds of physical violence than women ( $OR=1.53$ ,  $p=.004$ ).

**Table 17. Block 9: Physical Violence Rate by Nurse Demographic Variables**

Categorical Predictors	Frq	PV Rate % (n)	Category (vs Other)				3 <sup>rd</sup> -order				Predictor Set					
			OR	r <sup>2</sup>	χ <sup>2</sup>	p	OR	Δr <sup>2</sup>	χ <sup>2</sup>	p	R <sup>2</sup>	χ <sup>2</sup>	p			
Sex																
<b>Male</b>	440	15.0% (66)	<b>1.54</b>	<b>0.6%</b>	<b>7.95</b>	<b>.005</b>	<b>1.53</b>	<b>0.5%</b>	<b>8.14</b>	<b>.004</b>	1.2%	17.49	<b>.002</b>			
<b>Female</b>	2,447	10.3% (251)	0.65	"	"	"										
Age group																
18-24	45	8.9% (4)	0.79	0.0%	0.21	.648										
25-34	455	14.3% (65)	1.44	0.4%	5.87	.015										
35-44	804	12.1% (97)	1.16	0.1%	1.27	.260										
45-54	1,058	10.3% (109)	0.89	0.1%	0.85	.358										
55-64	516	8.3% (43)	0.69	0.3%	4.54	.033										
65+	20	5.0% (1)	0.42	0.1%	0.70	.403										
Age group (collapsed)																
<b>18-34</b>	500	13.8% (69)	<b>1.38</b>	<b>0.3%</b>	<b>4.78</b>	<b>.029</b>	0.85	0.1%	0.97	<b>.325</b>						
<b>35-44</b>	804	12.1% (97)	1.16	0.1%	1.27	.260										
<b>45-54</b>	1,058	10.3% (109)	0.89	0.1%	0.85	.358										
<b>55+</b>	536	8.2% (44)	<b>0.68</b>	<b>0.4%</b>	<b>5.20</b>	<b>.023</b>										
ALL Valid	2,907	11.0% (319)					<b>0.56</b>	<b>0.6%</b>	<b>7.96</b>	<b>.005</b>						

Categorical predictors are dummy-coded in multi-predictor models.  
Mean fill used for multi-predictor models.

Unique Var: 1.2%  
Common Var: 0.0%

### Block 10: PV Rate by Nurse Role

Table 18 lists PV rates and associated statistics for categories defined by primary nurse role. In multi-predictor models, role categories were dummy coded and contrasted with the largest category – Staff Nurse. Overall Nurse Role accounted for 1.8% of PV variation (p=.001). Staff Nurses and Charge Nurses reported the highest rates (12.3% and 13.0%, respectively), and Directors/Managers reported the lowest rates (5.2%). One dummy-coded contrast was significant in the multi-predictor model – Staff Nurses reported odds of physical violence 2.55 times higher than odds reported by Directors/Managers (OR=0.39, p<.001).

**Table 18. Block 10: Physical Violence Rate by Nurse Role**

Categorical Predictors	Frq	PV Rate % (n)	Category (vs Other)				8 <sup>th</sup> -order				Predictor Set		
			OR	r <sup>2</sup>	χ <sup>2</sup>	p	OR	Δr <sup>2</sup>	χ <sup>2</sup>	p	R <sup>2</sup>	χ <sup>2</sup>	p
Nurse primary role											1.8%	25.76	.001
<b>Staff nurse</b>	1,656	12.3% (230)	1.37	0.5%	6.47	.011							
<b>Charge nurse</b>	515	13.0% (67)	1.27	0.2%	2.65	.104	1.07	0.0%	0.20	.652			
Clinical coordinator	88	8.0% (7)	0.69	0.1%	0.84	.360	0.62	0.1%	1.43	.231			
Clinical educator	119	6.7% (8)	0.57	0.2%	2.24	.135	0.52	0.3%	3.14	.076			
Clinical nurse specialist	45	4.4% (2)	0.37	0.2%	1.84	.175	0.33	0.2%	2.29	.130			
<b>Director/manager</b>	346	5.2% (18)	<b>0.41</b>	1.1%	<b>12.60</b>	<b>&lt;.001</b>	<b>0.39</b>	1.2%	<b>13.60</b>	<b>&lt;.001</b>			
Nurse practitioner	31	6.5% (2)	0.56	0.1%	0.64	.425	0.49	0.1%	0.92	.337			
Trauma coordinator	45	11.1% (5)	1.01	0.0%	0.00	.976	0.89	0.0%	0.05	.817			
Others (48) or Missing (14)	62	11.3% (7)	1.03	0.0%	0.01	.936	0.91	0.0%	0.05	.819			
ALL Valid	2,907	11.0% (319)											

Categorical predictors are dummy-coded in multi-predictor models.  
Mean fill used for multi-predictor models.

Unique Var: 1.2%  
Common Var: 0.0%

### Relative Contribution of 10 Predictor Blocks to PV rates - Combining All Items and Blocks

Table 19 lists analog multiple R-squared statistics for each block alone, and the change in Nagelkerke R-squared associated with including each predictor block after controlling for all items from other blocks. Overall, 17.3% of variation in PV rates was explained by the full set of predictors from all blocks (p<.001), with substantial unique contributions from individual blocks (10.7% unique error versus 6.6% shared among predictor blocks).

**Table 19. Relative Contribution of 10 Predictor Blocks to Physical Violence Rates**

Block	Predictor Block	Zero Order Block Effect			Unique Block Effect			Overall Model		
		R <sup>2</sup>	χ <sup>2</sup>	p	ΔR <sup>2</sup>	χ <sup>2</sup>	p	R <sup>2</sup>	χ <sup>2</sup>	p
Block 1	<b>Population served</b>	<b>1.2%</b>	<b>17.02</b>	<b>&lt;.001</b>	<b>0.7%</b>	<b>9.68</b>	<b>.008</b>	17.3%	244.66	<.001
Block 2	Region served	0.7%	10.36	.016	0.0%	.69	.877			
Block 3	<b>ED capacity and utilization</b>	<b>2.8%</b>	<b>41.26</b>	<b>&lt;.001</b>	<b>1.4%</b>	<b>20.73</b>	<b>&lt;.001</b>	Unique Error 10.7%		
Block 4	Facility type	1.1%	16.60	.020	0.4%	5.53	.595			
Block 5	<b>Security/Personnel type</b>	<b>1.5%</b>	<b>22.45</b>	<b>.002</b>	<b>1.1%</b>	<b>16.09</b>	<b>.024</b>	Common Error 6.6%		
Block 6	Environmental control measures	1.5%	21.20	.326	1.1%	15.60	.684			
Block 7	<b>Safety perception, training, and preparedness</b>	<b>7.2%</b>	<b>98.71</b>	<b>&lt;.001</b>	<b>2.8%</b>	<b>41.11</b>	<b>&lt;.001</b>			
Block 8	<b>Hospital safety commitment and policy</b>	<b>5.8%</b>	<b>85.19</b>	<b>&lt;.001</b>	<b>2.3%</b>	<b>33.34</b>	<b>&lt;.001</b>			
Block 9	Nurse demographics	1.2%	17.49	.002	0.6%	8.55	.073			
Block 10	Nurse role	1.8%	25.76	.001	0.4%	6.50	.591			

With respect to zero-order tests, all blocks except one (Environmental Control Measures) explained significant variation in physical violence rates. With respect to the full standard model, the five blocks with substantial and significant unique contributions to the predictive model, in descending order of effect size, were: Safety Perception, Training, and Preparedness ( $\Delta R^2 = 2.8\%$ ), Hospital Safety Commitment and Policy ( $\Delta R^2 = 2.3\%$ ), ED Capacity and Utilization ( $\Delta R^2 = 1.4\%$ ), Security/Personnel Type ( $\Delta R^2 = 1.1\%$ ), and Population Served ( $\Delta R^2 = 0.7\%$ ).

#### *Unique Item Effects (Controlling for All Items from All Blocks)*

Table 20 lists odds ratios with confidence intervals and test statistics evaluating the unique contribution of each item. Eight predictors demonstrated significant unique effects. The largest single effect was for the Nurse Safety Rating (OR=0.58,  $p<.001$ ). For every one standard deviation lower on the rating (approximately two points), the odds of physical violence increased 1.73 times. The preparedness rating also yielded a significant effect (OR=1.19,  $p=.038$ ), but this effect was marginally significant and in the opposite direction when compared with the zero-order model for preparedness (i.e., a “suppressor” effect). It is possible that this suppressor is an artifact due to high correlation with nurse safety rating – the inconsistent direction and marginal significance for this effect suggests the finding (in the multi-variable model) for preparedness is inconclusive.

The next largest single item effect was for an ED capacity and utilization (standardized) item – Use of Added ED Spaces. Specifically, controlling for other items, for every one standard deviation increase (approximately 12 days per month of above normal beds), the odds of physical violence increase by 32% (OR=1.40,  $p<.001$ ).

The next largest unique effect was for ED Management Safety Commitment – for each standard deviation of heightened commitment the odds of physical violence dropped by 25% (OR=0.75,  $p=.002$ ). The next largest unique item effect was for the presence of 24/7 security. Controlling for other items, 24/7 security was associated with a 37% lower odds of physical violence (OR=0.63,  $p=.007$ ).

Marginally significant ( $p<.05$ ) unique item effects were also detected for Pediatric Only populations (OR=0.13,  $p=.042$ ), ACS Certification (OR=1.49,  $p=.047$ ) and Nurse Age 55+ (vs. 34-44, OR=0.63,  $p=.044$ ). All these significant unique effects were in a direction consistent with previously described within block effects.

**Table 20. Standard Logistic Model – Predicting Physical Violence from All Predictors**

Block	Item	OR	OR 95% CI		$\chi^2$	p
			LB	UB		
Population served	Adult Only (vs General ED)	0.70	0.44	1.14	2.04	.153
	<b>Pediatric Only (vs General ED)</b>	<b>0.13</b>	<b>0.02</b>	<b>0.93</b>	<b>4.14</b>	<b>.042</b>
Region served	Large urban (vs Rural)	1.08	0.67	1.74	0.11	.741
	Small urban (vs Rural)	0.97	0.62	1.52	0.01	.908
	Suburban (vs Rural)	0.93	0.59	1.46	0.10	.749
ED capacity and utilization	Total licensed beds (z)	0.96	0.80	1.15	0.21	.649
	Additional treatment spaces (z)	0.99	0.84	1.17	0.01	.912
	<b>Use of added spaces (z)</b>	<b>1.32</b>	<b>1.13</b>	<b>1.54</b>	<b>12.56</b>	<b>&lt;.001</b>
	Total annual ED visits (z)	1.19	0.98	1.43	3.16	.075
Facility type	Investor-owned, for-profit (vs NFP)	0.96	0.67	1.38	0.04	.838
	State or local gov't (vs NFP)	0.7	0.61	1.54	0.02	.881
	Federal/Military/VA (vs NFP)	0.69	0.22	2.19	0.39	.533
	Trauma center	0.86	0.52	1.42	0.34	.557
	<b>ACS certified</b>	<b>1.49</b>	<b>1.01</b>	<b>2.21</b>	<b>3.96</b>	<b>.047</b>
	State certified	1.12	0.76	1.67	0.34	.562
	Self-designated	1.02	0.57	1.81	0.00	.956
Security/Personnel type	Hospital-employed security	1.20	0.76	1.90	0.62	.431
	Police/sheriff	1.44	1.00	2.08	3.78	.052
	Campus police	0.82	0.44	1.55	0.36	.546
	Private security	1.51	0.95	2.42	3.01	.083
	Other security	1.20	0.46	3.14	0.14	.709
	Security based in ED	1.28	0.92	1.77	2.14	.144
	<b>24/7 security</b>	<b>0.63</b>	<b>0.45</b>	<b>0.88</b>	<b>7.28</b>	<b>.007</b>
Environmental control measures	Bullet-proof glass	0.81	0.51	1.31	0.72	.397
	Enclosed nurses' station	1.23	0.78	1.94	0.82	.635
	Handcuffs	1.04	0.70	1.56	0.04	.837
	Security batons	0.80	0.50	1.29	0.83	.363
	Pseudonym for call code	0.91	0.67	1.25	0.31	.576
	Mace	1.09	0.65	1.82	0.10	.752
	Limits on number of visitors	1.08	0.81	1.45	0.27	.605
	Locked treatment spaces	1.07	0.78	1.47	0.17	.677
	Locked/coded ED entry	1.15	0.81	1.64	0.60	.439
	Mirrors for hidden spaces	1.11	0.82	1.51	0.47	.495
	Panic button/silent alarm	0.77	0.57	1.04	2.95	.086
	Physical/leather restraints	0.99	0.64	1.52	0.00	.959
	Personal search	1.15	0.85	1.54	0.82	.365
	Chemical restraints	1.07	0.77	1.49	0.17	.680
	Safe for cash payments	1.25	0.90	1.73	1.77	.184
	Security cameras	1.25	0.83	1.89	1.15	.284
	Security signage	1.11	0.82	1.51	0.45	.500
Visitor tag/badge	1.16	0.87	1.55	1.01	.316	
Well-lit areas in the ED	1.09	0.70	1.69	0.15	.699	
Safety perception, training, and preparedness	<b>Nurse safety rating (z)</b>	<b>0.58</b>	<b>0.48</b>	<b>0.70</b>	<b>32.63</b>	<b>&lt;.001</b>
	<b>Preparedness rating (z)</b>	<b>1.19</b>	<b>1.01</b>	<b>1.40</b>	<b>4.31</b>	<b>.038</b>
	Attended at current hospital (vs NT)	0.99	0.64	1.55	0.00	.976
	Attended at other location (vs NT)	1.44	0.93	2.23	2.63	.105
	Attended at both (vs NT)	1.30	0.72	2.34	0.75	.385
	Mandatory training (vs NT)	1.53	0.85	2.76	2.04	.153
	Training not mandatory (vs NT)	1.32	0.79	2.19	1.10	.293
Hospital safety commitment and policy	Hospital administration commitment (z)	0.84	0.69	1.01	3.34	.068
	<b>ED management commitment (z)</b>	<b>0.75</b>	<b>0.63</b>	<b>0.90</b>	<b>9.65</b>	<b>.002</b>
	Nurses commitment (z)	0.97	0.82	1.16	0.08	.773
	Physicians commitment (z)	1.15	0.96	1.39	2.20	.138
	Other healthcare workers commitment (z)	0.97	0.81	1.17	0.10	.754
	No zero tolerance policy (vs No reporting policy)	0.70	0.47	1.05	3.02	.082
Zero tolerance policy (vs No reporting policy)	0.65	0.42	1.01	3.70	.054	
Nurse sex and age	Male (vs Female)	1.39	0.99	1.94	3.60	.058
	Age 35-44 (vs 18-34)	0.81	0.56	1.17	1.26	.262
	Age 45-54 (vs 18-34)	0.70	0.48	1.01	3.63	.057
	<b>Age 55+ (vs 18-34)</b>	<b>0.63</b>	<b>0.40</b>	<b>0.99</b>	<b>4.04</b>	<b>.044</b>
Nurse role	Charge nurse (vs Staff nurse)	1.22	0.88	1.70	1.41	.235
	Clinical coordinator (vs SN)	0.88	0.38	2.03	0.09	.761
	Clinical educator (vs SN)	0.74	0.34	1.60	0.60	.440
	Clinical nurse specialist (vs SN)	0.57	0.13	2.47	0.57	.450
	Director/manager (vs SN)	0.81	0.46	1.42	0.54	.461
	Nurse practitioner (vs SN)	0.41	0.09	1.95	1.25	.263
	Trauma coordinator (vs SN)	1.60	0.58	4.44	0.81	.368
	Others (48) or Missing (14) (vs SN)	1.30	0.52	3.27	0.31	.575

## Factors Associated with Occurrence of Verbal Abuse

### Block 1: VA Rate by Types of EDs based on Population Served

Table 21 contrasts three populations (Adult Only, Pediatric Only and General ED) on VA rates. Overall, 0.7% of VA rate variation was explained by population served ( $p < .001$ ). As with PV rates, this was primarily due to the relatively low VA rate in the Pediatric Only setting as contrasted with the PV rate in the full sample (36.4% vs. 54.0%, respectively).

**Table 21. Block 1: Verbal Abuse Rate by Population Served**

Population	Frq	VA Rate % (n)	Category (vs Other)				Category Set		
			OR	$r^2$	$\chi^2$	p	$R^2$	$\chi^2$	p
Adult Only	278	59.4% (165)	1.27	0.2%	3.50	.061	0.7%	15.67	<.001
<b>Pediatric Only</b>	99	36.4% (36)	<b>0.47</b>	<b>0.6%</b>	<b>12.35</b>	<b>&lt;.001</b>			
General ED	2,529	54.1% (1,369)	1.03	0.0%	0.09	.767			
ALL Valid	2,906	54.0% (1,570)							

$r^2$  = Nagelkerke "percent error explained" analog statistics

### Block 2: VA Rate by Region Served

Table 22 lists VA rates for Rural, Suburban, Small Urban and Large Urban regions. Overall, 2.7% of VA rate error was explained by Region Served ( $p < .001$ ). As with physical violence, VA rates tended to increase with population density, rising from Rural (43.1%) to Large Urban (62.7%) settings with middling rates in Suburban and Small Urban settings. The rate was significantly above average in Large Urban settings (OR=1.68,  $p < .001$ ), and significantly below average in Suburban settings (OR=0.82,  $p = .020$ ) and Rural settings (OR=0.58,  $p < .001$ ).

**Table 22. Block 2: Verbal Abuse Rate by Region Served**

Region Type	Frq	VA Rate % (n)	Category (vs Other)				Category Set		
			OR	$r^2$	$\chi^2$	p	$R^2$	$\chi^2$	p
<b>Large urban</b>	927	62.7% (581)	<b>1.68</b>	<b>1.9%</b>	<b>40.94</b>	<b>&lt;.001</b>	2.7%	59.89	<.001
Small urban	683	55.2% (377)	1.07	0.0%	0.52	.473			
<b>Suburban</b>	726	50.3% (365)	<b>0.82</b>	<b>0.2%</b>	<b>5.40</b>	<b>.020</b>			
<b>Rural</b>	564	43.1% (243)	<b>0.58</b>	<b>1.5%</b>	<b>33.14</b>	<b>&lt;.001</b>			
ALL Valid	2,900	54.0% (1,566)							

$r^2$  = Nagelkerke "percent error explained" analog statistics

### Block 3: VA Rate by ED Capacity and Utilization

Table 23 lists the four capacity and utilization variables included as standardized predictors in zero-order and multi-predictor models. The block of four capacity and utilization items accounted for 5.1% of variation in PV rates ( $p < .001$ ). Overall, as Total ED Beds, Additional Treatment Space, Use of Added Space and Total ED Visits increased, the odds of verbal abuse increased. Three items (Availability of Additional Treatment Spaces, Use of Added Space and Total Annual Visits) contributed 2.1% uniquely to the 5.1% error reduction; however, most variation was accounted for in common by the set of four items (3.0%) and all items showed a significant and substantial zero-order relationship with the VA rate.

**Table 23. Block 3: Verbal Abuse Rate by ED Capacity and Utilization**

Predictor	Mean	SD	Zero-order			3 <sup>rd</sup> -order				Predictor Set			
			OR	r <sup>2</sup>	χ <sup>2</sup>	p	OR	Δr <sup>2</sup>	χ <sup>2</sup>	p	R <sup>2</sup>	χ <sup>2</sup>	p
<b>Total ED Beds</b>	29.9	17.2	<b>1.19</b>	<b>1.0%</b>	<b>20.60</b>	<.001	0.94	0.1%	1.56	.211	5.1%	114.2	<.001
<b>Additional treatment spaces</b>	6.4	3.7	<b>1.43</b>	<b>4.1%</b>	<b>87.77</b>	<.001	<b>1.28</b>	<b>1.2%</b>	<b>27.31</b>	<.001			
<b>Use of added spaces</b>	15.2	11.7	<b>1.32</b>	<b>2.6%</b>	<b>55.23</b>	<.001	<b>1.12</b>	<b>0.3%</b>	<b>6.28</b>	<b>.012</b>			
<b>Total annual ED visits</b>	5.6	1.9	<b>1.33</b>	<b>2.6%</b>	<b>54.87</b>	<.001	<b>1.21</b>	<b>0.6%</b>	<b>13.67</b>	<.001			

OR's are based on standardized predictors (following mean fill for missing data, N=2,907).

Unique Var: 2.2%  
 Common Var: 3.0%

**Block 4: VA Rate by Facility Type**

Table 24 reports VA rates and tests for Facility Type, as defined by ownership status (private, not-for-profit, government) and trauma center certification/status. Overall, 2.1% of variation was accounted for by Facility Type (p<.001). With respect to zero-order correlations with ownership status, investor-owned facilities and state/local facilities reported significantly above-average VA rates (58.3% and 61.4%, respectively). Non-government, not-for-profit facilities and federal/military/VA facilities reported significantly below-average VA rates (52.7% and 41.1%, respectively). With respect to zero-order trauma center effects, non-trauma centers showed significantly lower VA rates than trauma centers (51.4% vs. 58.3%, respectively, p=.004). VA rates were significantly higher in ACS-certified trauma centers (61.3%, p<.001) and self-designated trauma centers (67.7%, p<.001). In the multi-predictor model, unique effects for ACS certification and self-designated trauma centers remained significant (ORs = 1.61 and 1.78, respectively). With respect to ownership status, controlling for other block predictors, the contrast of investor-owned versus not-for-profit facilities remained significant, with odds of verbal abuse being 1.27 times higher in investor-owned facilities, p=.019.

**Table 24. Block 4: Verbal Abuse Rate by Facility Type**

Facility Type	Frq	VA Rate % (n)	Category (vs Other)				Category Set		
			OR	r <sup>2</sup>	χ <sup>2</sup>	p	R <sup>2</sup>	χ <sup>2</sup>	p
Non-gov't, not-for-profit	2,107	52.7% (1,111)	<b>0.82</b>	<b>0.3%</b>	<b>5.63</b>	<b>.018</b>	0.7%	15.22	.002
Investor-owned, for-profit	475	58.3% (277)	<b>1.23</b>	<b>0.2%</b>	<b>4.11</b>	<b>.043</b>			
State or local gov't	241	61.4% (148)	<b>1.39</b>	<b>0.3%</b>	<b>5.66</b>	<b>.017</b>			
Federal/Military/VA	73	41.1% (30)	<b>0.58</b>	<b>0.2%</b>	<b>4.97</b>	<b>.026</b>			
ALL Valid	2,896	54.1% (1,566)							
Not a trauma center	1,382	51.4% (710)	<b>0.89</b>	<b>0.4%</b>	<b>8.42</b>	<b>.004</b>	1.6%	34.83	<.001
Trauma center	1,510	56.8% (857)	<b>1.11</b>	"	"	"			
ACS certified	821	61.3% (503)	<b>1.34</b>	<b>1.1%</b>	<b>23.34</b>	<.001			
State certified	1,016	55.9% (568)	1.07	0.1%	1.87	.171			
Self-designated	155	67.7% (105)	<b>1.78</b>	<b>0.6%</b>	<b>12.46</b>	<.001			
ALL Valid	2,892	54.2% (1,567)							
Item	6 <sup>th</sup> -order						Predictor Set		
	OR	Δr <sup>2</sup>	χ <sup>2</sup>	p			R <sup>2</sup>	χ <sup>2</sup>	p
<b>Inv.-owned, for-profit (vs NFP)</b>	<b>1.27</b>	<b>0.2%</b>	<b>5.48</b>	<b>.019</b>			2.1%	46.90	<.001
State or local gov't (vs NFP)	1.31	0.2%	3.55	.060					
Fed/Military/VA (vs NFP)	0.66	0.1%	2.93	.087					
Trauma center	0.82	0.1%	1.82	.177					
<b>ACS certified</b>	<b>1.61</b>	<b>0.7%</b>	<b>16.11</b>	<b>&lt;.001</b>					
State certified	1.15	0.1%	1.27	.260					
<b>Self-designated</b>	<b>1.78</b>	<b>0.5%</b>	<b>9.60</b>	<b>.002</b>					

Note: Trauma Center sub-categories are not mutually exclusive, 11 TCs denied all 3 subtype designations  
 Mean fill for multi-variable models

Unique Var: 1.9%  
 Common Var: 0.3%

### Block 5: VA Rate by Security Type and Personnel

Table 25 reports VA rates and tests for Security Type and Personnel. All predictors were binary, and categories were not mutually exclusive. Overall, 1.1% of VA variation was accounted for by the predictor set ( $p=.001$ ). With respect to zero-order relationships, VA rates were lower when security was absent (40.0%,  $p<.001$ ), and higher when private security was present (58.4%,  $p=.034$ ). Controlling for all block predictors, the presence of Hospital-Employed Security, Police/Sheriff, and Private Security were each uniquely and significantly associated with a higher odds of verbal abuse (ORs = 1.45, 1.44, and 1.66, respectively).

**Table 25. Block 4: Verbal Abuse Rate by Security Type and Personnel**

Security Type and Personnel	Frq	VA Rate % (n)	Category (vs Other)				6 <sup>th</sup> -order				Predictor Set							
			OR	r <sup>2</sup>	χ <sup>2</sup>	p	OR	Δr <sup>2</sup>	χ <sup>2</sup>	p	R <sup>2</sup>	χ <sup>2</sup>	p					
No security	160	40.0 (64)	<b>0.55</b>	<b>0.6%</b>	<b>13.42</b>	<b>&lt;.001</b>												
Any security	2,747	54.9% (1,507)	1.82	"	"	"								1.1%	24.03	.001		
<b>Hospital-employed</b>	2,082	54.7% (1,139)	1.10	0.1%	1.31	.253	<b>1.45</b>	<b>0.5%</b>	<b>10.91</b>	<b>&lt;.001</b>								
<b>Police/sheriff</b>	432	55.8% (241)	1.09	0.0%	0.62	.430	1.16	0.1%	1.93	.165								
Campus police	168	57.7% (97)	1.17	0.0%	0.99	.321	<b>1.44</b>	<b>0.2%</b>	<b>4.59</b>	<b>.032</b>								
<b>Private Security</b>	497	58.4% (290)	<b>1.23</b>	<b>0.2%</b>	<b>4.50</b>	<b>.034</b>	<b>1.66</b>	<b>0.7%</b>	<b>14.40</b>	<b>&lt;.001</b>								
Other	75	45.3% (34)	0.70	0.1%	2.34	.126	0.88	0.0%	0.27	.600								
Security based in ED	1,583	53.8% (852)	0.90	0.1%	1.69	.193	0.90	0.1%	1.47	.226								
<b>24/7 security</b>	1,916	53.9% (1,033)	0.88	0.1%	2.24	.135	0.89	0.1%	1.68	.195								
ALL Valid																		

For "Security Based in ED", 179 did not respond (Total N = 2728); Mean fill employed for multi-variable models.

For "24-7 Security", 172 did not respond (Total N = 2735); Mean fill employed for multi-variable models.

For "24/7 Security", responses were adjusted to "Yes" if item 12 sum indicated 24/7 Security.

Item 12 sum (Weekly Security Hours) excluded due to high multi-collinearity (with 24/7 Security).

Unique Var: 1.1%

Common Var: 0.0%

**Block 6: VA Rate by Environmental Control Measures (ECMs)**

The 19 ECM categories were binary categories, and not mutually exclusive. Multi-variable models included the full set of 19, dummymoded. Overall, the set of ECMs accounted for 1.8% of verbal abuse variation ( $p=.004$ ). This effect was almost entirely attributable to four items. The presence of an enclosed nurses' station, security signage and well-lit areas were associated with significantly lower verbal abuse rates (45.7%, 51.8%, and 52.8%, respectively, versus the full sample average of 54.0%). These effects remained significant in the multi-predictor model (OR = 0.72, 0.82, and 0.62, respectively). The presence of chemical restraints was associated with a somewhat higher VA rate (55.3%), and this effect was significant controlling for other ECM items (OR=1.21,  $p=.042$ ) (Table 26).

**Table 26. Block 6: Verbal Abuse Rate by Environmental Control Measures (ECMs)**

Security Type and Personnel	Frq No	Frq Yes	VA Rate   Y % (n)	Yes (vs No)				18 <sup>th</sup> -order				Predictor Set		
				OR	r <sup>2</sup>	χ <sup>2</sup>	p	OR	Δr <sup>2</sup>	χ <sup>2</sup>	p	R <sup>2</sup>	χ <sup>2</sup>	p
Bullet-proof glass	2,449	287	51.2% (147)	0.85	0.1%	1.64	.200	0.94	0.0%	0.24	.622	1.8%	39.60	.004
<b>Enclosed nurses' station</b>	2,535	313	45.7% (143)	<b>0.68</b>	<b>0.5%</b>	<b>10.51</b>	<b>.001</b>	<b>0.72</b>	<b>0.3%</b>	<b>7.38</b>	<b>.007</b>			
Handcuffs	2,194	570	54.9% (313)	1.02	0.0%	0.04	.834	1.07	0.0%	0.38	.539			
Security batons	2,292	411	53.8% (221)	0.95	0.0%	0.20	.652	0.95	0.0%	0.14	.710			
Pseudonym for call code	628	2,217	53.4% (1,184)	0.85	0.2%	3.29	.070	0.87	0.1%	2.15	.143			
Mace	2,373	271	56.1% (152)	1.06	0.0%	0.19	.663	1.12	0.0%	0.57	.450			
Limits on number of visitors	1,080	1,778	53.4% (950)	0.93	0.0%	0.92	.337	0.99	0.0%	0.02	.888			
Locked treatment spaces	2,120	703	52.9% (372)	0.93	0.0%	0.69	.406	0.98	0.0%	0.03	.864			
Locked/coded ED entry	552	2,310	53.3% (1,232)	0.86	0.1%	2.51	.113	0.93	0.0%	0.51	.476			
Mirrors for hidden spaces	1,961	843	53.1% (448)	0.93	0.0%	0.84	.360	1.01	0.0%	0.02	.901			
Panic button/silent alarm	720	2,216	53.8% (1,143)	0.94	0.0%	0.50	.481	0.96	0.0%	0.24	.625			
Physical/leather restraints	334	2,536	54.2% (1,375)	1.03	0.0%	0.05	.829	0.98	0.0%	0.03	.863			
Personal search	1,297	1,527	54.2% (828)	0.98	0.0%	0.05	.815	1.00	0.0%	0.00	.980			
<b>Chemical restraints</b>	680	2,123	55.3% (1,175)	1.18	0.2%	3.35	.067	<b>1.21</b>	<b>0.2%</b>	<b>4.13</b>	<b>.042</b>			
Safe for cash payments	763	1,762	54.9% (968)	1.06	0.0%	0.38	.537	1.12	0.1%	1.53	.125			
Security cameras	378	2,463	54.0% (1,330)	0.95	0.0%	0.22	.639	1.02	0.0%	0.03	.852			
<b>Security signage</b>	1,454	1,190	51.8% (617)	<b>0.81</b>	<b>0.3%</b>	<b>6.86</b>	<b>.009</b>	<b>0.82</b>	<b>0.2%</b>	<b>5.11</b>	<b>.024</b>			
Visitor tag/badge	1,561	1,268	54.0% (685)	1.00	0.0%	0.00	.965	1.09	0.1%	1.21	.272			
<b>Well-lit areas in the ED</b>	261	2,594	52.8% (1,370)	<b>0.60</b>	<b>0.7%</b>	<b>14.76</b>	<b>&lt;.001</b>	<b>0.62</b>	<b>0.5%</b>	<b>11.28</b>	<b>&lt;.001</b>			
ALL Valid		2907	54.0% (1,571)											

Mean fill for multi-variable models.

Unique Var: 1.6%  
 Common Var: 0.2%

**Block 7: VA Rate by Safety Perception, Training, and Preparedness**

Table 27 lists VA rates, odds ratios, and inferential tests for zero-order models and a model including all predictors in this set. Overall, safety perception, training, and preparedness accounted for 11.6% of error variation ( $p < .001$ ). 9.9% was uniquely attributable to specific items, but almost all of this was due to one item, the Nurse Safety Rating. This rating accounted for 10.5% of VA error alone ( $OR = 0.55, p < .001$ ), and 9.2% controlling for other items in the set ( $OR = .50, p < .001$ ). The Preparedness Rating accounted for 1.7% of VA error variation alone ( $OR = .79, p < .001$ ), and only 0.3% uniquely ( $OR = 1.16, p = .007$ ). In general, higher safety ratings were associated with lower rates of verbal abuse (with odds of verbal abuse dropping approximately in half for every one standard deviation on the rating). Attending a training course was associated with lower odds of verbal abuse ( $OR = 0.83, p = .047$ ), but attending at both the current hospital and other locations was associated with a higher odds of VA ( $OR = 1.42, p = .011$ ). These effects for attendance dropped to non-significance after controlling for other block components. The provision of training, mandatory or otherwise, had no discernable impact on VA rates.

**Table 27. Block 7: Verbal Abuse Rate by Safety Perception, Training, and Preparedness**

Standardized Predictors	Frq	Mean	SD	Zero-order				6 <sup>th</sup> -order				Predictor Set		
				OR	r <sup>2</sup>	χ <sup>2</sup>	p	OR	Δr <sup>2</sup>	χ <sup>2</sup>	p	R <sup>2</sup>	χ <sup>2</sup>	p
<b>Nurse safety rating</b>	2,886	5.08	2.14	<b>0.55</b>	<b>10.5%</b>	<b>215.6</b>	<b>&lt;.001</b>	<b>0.50</b>	<b>9.2%</b>	<b>177.7</b>	<b>&lt;.001</b>	11.6%	245.6	<.001
<b>Preparedness rating</b>	2,885	5.36	2.21	<b>0.79</b>	<b>1.7%</b>	<b>37.42</b>	<b>&lt;.001</b>	<b>1.16</b>	<b>0.3%</b>	<b>7.26</b>	<b>.007</b>			
Categorical Predictors	Frq	VA Rate % (n)		Category (vs Other)										
Never attended training	601	57.6% (346)		<b>1.20</b>	<b>0.2%</b>	<b>3.96</b>	<b>.047</b>							
Attended training course	2,284	53.0% (1,211)		<b>0.83</b>	"	"	"							
Attended at current hospital	1,602	52.4% (839)		0.87	0.2%	3.70	.055	0.80	0.1%	2.71	.100			
Attended at other location	441	50.6% (223)		0.85	0.1%	2.42	.120	0.80	0.1%	2.33	.127			
<b>Attended at both</b>	241	61.8% (149)		<b>1.42</b>	<b>0.3%</b>	<b>6.48</b>	<b>.011</b>	1.22	0.0%	1.09	.296			
No training provided	211	55.5% (117)		1.06	0.0%	0.15	.703							
Mandatory training	1,457	53.6% (781)		0.95	0.0%	0.44	.506	1.29	0.1%	1.98	.159			
Training not mandatory	1,039	54.8% (569)		1.04	0.0%	0.22	.638	1.11	0.0%	0.43	.510			
ALL valid														

Categorical predictors are dummy-coded in multi-predictor models.  
Mean fill used for multi-predictor models.

Unique Var: 9.9%  
Common Var: 1.7%

**Block 8: VA Rate by Hospital Safety Commitment and Policy**

Table 28 reports VA rates, odds ratios, and inferential tests for zero-order models and a model including all predictors in this set. Commitment predictors were standardized. As with verbal abuse models, three tolerance policy categories were examined: (1) No Reporting Policy, (2) No Identified Zero-Tolerance Reporting Policy, and (3) A Zero-Tolerance Reporting Policy. Tolerance policy categories were mutually exclusive and dummy coded (versus NRP) in the multi-predictor model.

Overall, hospital safety commitment and policy accounted for 10.8% of error in verbal abuse rates ( $p < .001$ ). All items in this set demonstrated significant zero-order effects, and much of the 10.8% (6.3% was common error) was attributed to shared effects of items. Overall, the pattern of effects was similar to that reported for physical violence. Higher commitment and the presence of reporting policies (especially zero-tolerance policies) were associated with a lower odds of verbal abuse. Hospitals with no reporting policy averaged a 70.3% VA rate, hospitals with a non-zero tolerance reporting policy had a 57.4% VA rate, and the lowest rate was in zero-tolerance settings (46.2%). Three commitment categories contributed uniquely to the multi-predictor model, but hospital administration commitment had the distinctly largest unique effect (OR = 0.61,  $\Delta r^2 = 3.6\%$ ,  $p < .001$ ). Other commitment ratings showed more marginal unique effects, but again, zero-order effects were substantial for all, suggesting a generally positive impact of safety commitment from any source.

**Table 28. Block 8: Verbal Abuse Rate by Hospital Safety Commitment and Policy Table**

Standardized Predictors	Frq	Mean	SD	Zero-order				6 <sup>th</sup> -order				Predictor Set					
				OR	r <sup>2</sup>	χ <sup>2</sup>	p	OR	Δr <sup>2</sup>	χ <sup>2</sup>	p	R <sup>2</sup>	χ <sup>2</sup>	p			
Commitment rating																	
<b>Hospital administration</b>	2,893	2.59	0.96	<b>0.55</b>	<b>10.2%</b>	<b>209.1</b>	<b>&lt;.001</b>	<b>0.61</b>	<b>3.6%</b>	<b>80.42</b>	<b>&lt;.001</b>	10.8%	245.8	<.001			
<b>ED management</b>	2,898	3.10	0.89	<b>0.65</b>	<b>5.6%</b>	<b>115.6</b>	<b>&lt;.001</b>	0.92	0.1%	2.30	.129						
<b>Nurses</b>	2,896	3.49	0.64	<b>0.86</b>	<b>0.7%</b>	<b>15.99</b>	<b>&lt;.001</b>	<b>1.16</b>	<b>0.3%</b>	<b>6.41</b>	<b>.011</b>						
<b>Physicians</b>	2,886	3.13	0.81	<b>0.77</b>	<b>2.1%</b>	<b>45.05</b>	<b>&lt;.001</b>	1.01	0.0%	0.02	.888						
<b>Other healthcare workers</b>	2,858	3.16	0.79	<b>0.75</b>	<b>2.7%</b>	<b>57.11</b>	<b>&lt;.001</b>	<b>0.88</b>	<b>0.2%</b>	<b>4.14</b>	<b>.042</b>						
<b>Categorical Predictors</b>	<b>Frq</b>	<b>VA Rate % (n)</b>		<b>Category (vs Other)</b>													
No reporting policy	310	70.3% (218)		<b>2.21</b>	<b>2.0%</b>	<b>36.43</b>	<b>&lt;.001</b>										
Reporting policy	2,268	51.8% (1,174)		<b>0.45</b>	"	"	"										
<b>No identified zero tolerance</b>	1,131	57.4% (649)		<b>1.28</b>	<b>0.5%</b>	<b>9.30</b>	<b>.002</b>	0.76	0.2%	3.71	.054						
<b>Zero tolerance</b>	1,137	46.2% (525)		<b>0.57</b>	<b>2.6%</b>	<b>49.74</b>	<b>&lt;.001</b>	<b>0.71</b>	<b>0.2%</b>	<b>5.21</b>	<b>.022</b>						
ALL valid																	

Categorical predictors are dummy-coded in multi-predictor models.  
Mean fill used for multi-predictor models.

Unique Var: 4.5%  
Common Var: 6.3%

**Block 9: VA Rate by Nurse Demographic Variables**

Table 29 lists VA rates and associated statistics for nurse sex and age group. Again, the six age group categories were reduced to four categories, collapsing low-frequency categories at the extremes of the age distribution. All predictors were dummy coded in the multi-predictor model (Age reference category = 18 to 34).

Overall, the demographic variables accounted for 1.9% of VA rate variation ( $p < .001$ ). Effects for verbal abuse were similar to those reported for physical violence. Both items contributed uniquely to the effect. Male nurses reported higher VA rates than female nurses (59.3% versus 53.0%,  $p = .018$ ). For older nurse ages, VA rates tended to be lower, declining from 63.2% in the youngest category (18 to 34) to 46.5% in the oldest category (55 or older). In the multi-predictor model, effects for both items were retained. The odds of verbal abuse were about two times higher in the youngest category versus the oldest category, ( $OR = 1.97$ ,  $p < .001$ ), and men reported higher odds of verbal abuse than women ( $OR = 1.29$ ,  $p = .018$ ).

**Table 29. Block 9: Verbal Abuse Rate by Nurse Demographic Variables**

Categorical Predictors	Frq	VA Rate % (n)	Category (vs Other)				3 <sup>rd</sup> -order				Predictor Set			
			OR	r <sup>2</sup>	χ <sup>2</sup>	p	OR	Δr <sup>2</sup>	χ <sup>2</sup>	p	R <sup>2</sup>	χ <sup>2</sup>	p	
Sex	Male	440	59.3% (261)	<b>1.29</b>	<b>0.3</b>	<b>6.02</b>	<b>.014</b>	<b>1.29</b>	<b>0.3%</b>	<b>5.63</b>	<b>.018</b>	1.9%	40.91	<.001
	Female	2,447	53.0% (1,297)	<b>0.77</b>	"	"	"							
Age group	18-24	45	75.6% (34)	2.66	0.4%	7.87	.005	<b>0.77</b>	<b>0.2%</b>	<b>5.19</b>	<b>.023</b>	1.9%	40.91	<.001
	25-34	455	62.0% (282)	1.47	0.6%	13.48	<.001							
	35-44	804	57.0% (458)	1.18	0.2%	3.75	.053							
	45-54	1,058	51.4% (544)	0.85	0.2%	4.72	.030							
	55-64	516	46.7% (241)	0.70	0.6%	13.63	<.001							
	65+	20	40.0% (8)	0.56	0.1%	1.56	.211							
Age group (collapsed)	<b>18-34</b>	500	63.2% (316)	<b>1.57</b>	<b>0.9%</b>	<b>20.07</b>	<b>&lt;.001</b>	<b>0.61</b>	<b>0.9%</b>	<b>19.26</b>	<b>&lt;.001</b>	1.9%	40.91	<.001
	<b>35-44</b>	804	57.0% (458)	1.18	0.2%	3.75	.053							
	<b>45-54</b>	1,058	51.4% (544)	<b>0.85</b>	<b>0.2%</b>	<b>4.72</b>	<b>.030</b>							
	<b>55+</b>	536	46.5% (249)	<b>0.69</b>	<b>0.7%</b>	<b>15.26</b>	<b>&lt;.001</b>							
ALL Valid							<b>0.51</b>	<b>1.3%</b>	<b>28.64</b>	<b>&lt;.001</b>				

Categorical predictors are dummy-coded in multi-predictor models.  
 Mean fill used for multi-predictor models.

Unique Var: 1.9%  
 Common Var: 0.0%

### Block 10: VA Rate by Nurse Role

Table 30 lists VA rates and associated statistics for categories defined by primary nurse role. In multi-predictor models, role categories were dummy coded and contrasted with the largest category – Staff Nurse. Overall, nurse role accounted for 4.7% of VA variation ( $p < .001$ ).

As with physical violence, Staff Nurses and Charge Nurses reported significantly above average verbal abuse rates (57.5% and 63.3%, respectively). VA Rates for Clinical Educators (29.4%), Clinical Nurse Specialists (31.1%), Director/Managers (38.7%), and Trauma Coordinators (35.6%) were significantly below average. Charge Nurses reported odds of verbal abuse 28% higher than Staff Nurses ( $OR = 1.28, p = .019$ ), while Clinic Educators, CNS's, Director/Managers, and Trauma Coordinators reported significantly lower odds of verbal abuse compared with Staff Nurses ( $ORs = 0.31, 0.33, 0.47, \text{ and } 0.41$ , respectively).

**Table 30. Block 10: Verbal Abuse Rate by Nurse Role**

Categorical Predictors	Frq	VA Rate % (n)	Category (vs Other)				8 <sup>th</sup> -order				Predictor Set				
			OR	r <sup>2</sup>	χ <sup>2</sup>	p	OR	Δr <sup>2</sup>	χ <sup>2</sup>	p	R <sup>2</sup>	χ <sup>2</sup>	p		
Nurse primary role															
<b>Staff nurse</b>	1,656	57.5% (952)	1.38	0.8%	18.36	<.001							4.7%	105.2	<.001
<b>Charge nurse</b>	515	63.3% (326)	1.59	1.0%	21.38	<.001	1.28	0.2%	5.47	.019					
Clinical coordinator	88	48.9% (43)	0.81	0.0%	0.98	.323	0.71	0.1%	2.51	.113					
Clinical educator	119	29.4% (35)	0.34	1.4%	27.82	<.001	0.31	1.6%	32.27	<.001					
Clinical nurse specialist	45	31.1% (14)	0.38	0.4%	8.98	.003	0.33	0.6%	11.33	<.001					
<b>Director/manager</b>	346	38.7% (134)	0.49	1.7%	36.05	<.001	0.47	1.8%	39.48	<.001					
Nurse practitioner	31	51.6% (16)	0.91	0.0%	0.07	.785	0.79	0.0%	0.43	.513					
Trauma coordinator	45	35.6% (16)	0.46	0.3%	6.00	.014	0.41	0.4%	8.08	.004					
Others (48) or Missing (14)	62	56.5% (35)	1.10	0.0%	0.15	.700	0.96	0.0%	0.03	.871					
ALL Valid	2,907	54.0% (1,571)													

Categorical predictors are dummy-coded in multi-predictor models.  
Mean fill used for multi-predictor models.

Unique Var: 4.7%  
Common Var: 0.0%

### Relative Contribution of 10 Predictor Blocks to VA Rates

Table 31 lists analog multiple R-squared statistics for each block alone, and the change in Nagelkerke R-squared associated with including each predictor block after controlling for all items from other blocks. Overall, 25.9% of variation in VA rates was explained by the full set of predictors from all blocks ( $p < .001$ ), with substantial unique contributions from individual blocks (13.4% unique error versus 12.5% shared among predictor blocks). With respect to zero-order tests, all blocks explained significant variation in VA rates. With respect to the full standard model, all blocks except for Environmental Control Measures contributed uniquely.

Four blocks contributed most substantially to both zero-order and higher order models. Safety Perception, Training and Preparedness accounted for 11.6% of VA error (3.7% uniquely), and Hospital Safety Commitment and Policy accounted for 10.8% of VA error (2.7% uniquely). ED Capacity and Utilization accounted for 5.1% of VA variation (1.6% uniquely), and Nurse Primary Role accounted for 4.7% of variation (2.1% uniquely). Other predictor blocks had relatively more modest contributions to the predictive model, accounting for 0.4% to 0.8% of unique error variation each.

**Table 31. Relative Contribution of 10 Predictor Blocks to Verbal Abuse Rates**

Block	Predictor Block	Zero Order Block Effect			Unique Block Effect			Overall Model			
		R <sup>2</sup>	χ <sup>2</sup>	p	ΔR <sup>2</sup>	χ <sup>2</sup>	p	R <sup>2</sup>	χ <sup>2</sup>	p	
Block 1	Population served	0.7%	15.67	<.001	0.3%	7.10	.029	25.9%	582.85	<.001	
Block 2	Region served	2.7%	59.89	<.001	0.6%	15.83	.001				
Block 3	<b>ED capacity and utilization</b>	<b>5.1%</b>	<b>114.16</b>	<b>&lt;.001</b>	<b>1.6%</b>	<b>40.51</b>	<b>&lt;.001</b>				Unique Error 13.4%
Block 4	Facility type	2.1%	46.90	<.001	0.8%	20.95	.004				
Block 5	Security/Personnel type	1.1%	24.03	.001	0.4%	9.74	.204				Common Error 12.5%
Block 6	Environmental control measures	1.8%	39.60	.004	0.6%	15.61	.683				
Block 7	<b>Safety perception, training, and preparedness</b>	<b>11.6%</b>	<b>245.62</b>	<b>&lt;.001</b>	<b>3.7%</b>	<b>90.43</b>	<b>&lt;.001</b>				
Block 8	<b>Hospital safety commitment and policy</b>	<b>10.8%</b>	<b>245.84</b>	<b>&lt;.001</b>	<b>2.7%</b>	<b>66.94</b>	<b>&lt;.001</b>				
Block 9	Nurse demographics	1.9%	40.91	<.001	0.6%	14.09	.007				
Block 10	<b>Nurse role</b>	<b>4.7%</b>	<b>105.18</b>	<b>&lt;.001</b>	<b>2.1%</b>	<b>51.17</b>	<b>&lt;.001</b>				

Table 32 lists odds ratios with confidence intervals and test statistics evaluating the unique contribution of each item. Eighteen predictors demonstrated significant unique effects. As with physical violence, the largest unique effect size for a single item predictor of verbal abuse was for the Nurse Safety Rating (OR=0.59,  $p < .001$ ). For every one standard deviation lower on the rating (approximately two points), the odds of verbal abuse increased 1.69 times. Included within the same block, the preparedness rating yielded a significant effect (OR=1.16,  $p = .016$ ), but this effect was marginally significant and in the opposite direction when compared with the zero-order model for preparedness. It is possible that this suppressor is an artifact due to high correlation with nurse safety rating – the inconsistent direction and marginal significance for this effect suggests the finding (in the multi-variable model) for preparedness should be regarded as inconclusive. Attending training at both current and other hospital locations was associated with a higher odds of verbal abuse, controlling for all other items (OR=1.55,  $p = .033$ ). Within the Hospital Safety Commitment and Policy block, Hospital Administration Commitment was the most substantial predictor of VA rates, controlling for all other items (OR=0.67,  $p < .001$ ).



Also within this block, the presence of a Zero-Tolerance Reporting Policy was associated with 30% lower odds of verbal abuse (OR=0.70 versus a No Reporting Policy,  $p=.034$ ).

Within the ED Capacity and Utilization block, the availability of Additional Treatment Spaces (OR=1.25,  $p<.001$ ) and Total Annual Visits (OR=1.18,  $p=.006$ ) each contributed uniquely to the full standard model. Within the Primary Nurse Role block, several effects remained significant controlling for all other items. Specifically, Charge Nurses had a higher odds of reporting verbal abuse (OR=1.34 vs. Staff Nurse,  $p=.016$ ). Clinical Educators (OR=0.29,  $p<.001$ ), Clinical Nurse Specialists (OR=.41,  $p=.014$ ), and Director/Managers (OR=0.72) all reported lower odds of verbal abuse versus Staff Nurses.

With respect to population served, once again pediatric populations showed a lower odds of verbal abuse (OR=0.51,  $p=.010$ ). With respect to region type, consistent with VA findings, Large Urban (OR=1.78,  $p<.001$ ) and Small Urban (OR=1.37,  $p=.031$ ) centers had higher VA rates contrasted with Rural settings. With respect to facility type, only self-designated trauma centers retained a unique effect in the full standard model, showing a higher odds of verbal abuse than other facility types (OR=1.95,  $p=.002$ ).

Finally, with respect to Nurse Demographics, male nurses were more likely to report higher VA rates controlling for all other items (OR=1.29,  $p=.041$ ). The two older age groups (45-54, and 55 or more) reported lower verbal abuse rates than the youngest age range (18-34), controlling for all other items (ORs = 0.71 and 0.65, respectively). All significant unique effects were in a direction consistent with previously described within block effects.

**Table 32. Standard Logistic Model – Predicting verbal Abuse from All Predictors**

Block	Item	OR	OR 95% CI		$\chi^2$	p
			LB	UB		
Population served	Adult Only (vs General ED)	1.04	0.75	1.44	0.06	.805
	<b>Pediatric Only (vs General ED)</b>	<b>0.51</b>	<b>0.31</b>	<b>0.86</b>	<b>6.58</b>	<b>.010</b>
Region served	<b>Large urban (vs Rural)</b>	<b>1.78</b>	<b>1.31</b>	<b>2.42</b>	<b>13.28</b>	<b>&lt;.001</b>
	<b>Small urban (vs Rural)</b>	<b>1.37</b>	<b>1.03</b>	<b>1.82</b>	<b>4.68</b>	<b>.031</b>
	Suburban (vs Rural)	1.18	0.89	1.56	1.31	.253
ED capacity and utilization	Total licensed beds (z)	0.93	0.82	1.05	1.30	.254
	<b>Additional treatment spaces (z)</b>	<b>1.25</b>	<b>1.12</b>	<b>1.39</b>	<b>16.15</b>	<b>&lt;.001</b>
	Use of added spaces (z)	<b>1.05</b>	<b>0.95</b>	<b>1.16</b>	<b>0.93</b>	<b>.334</b>
	<b>Total annual ED visits (z)</b>	<b>1.18</b>	<b>1.05</b>	<b>1.34</b>	<b>7.46</b>	<b>.006</b>
Facility type	Investor-owned, for-profit (vs NFP)	1.20	0.94	1.53	2.15	.143
	State or local gov't (vs NFP)	1.15	0.83	1.59	0.70	.403
	Federal/Military/VA (vs NFP)	0.56	0.31	1.02	3.55	.060
	Trauma center	0.78	0.55	1.10	2.03	.154
	ACS certified	1.31	1.00	1.72	3.73	.053
	State certified	1.19	0.89	1.59	1.44	.231
	<b>Self-designated</b>	<b>1.95</b>	<b>1.29</b>	<b>2.96</b>	<b>10.01</b>	<b>.002</b>
Security/Personnel type	Hospital-employed security	1.06	0.79	1.42	0.13	.719
	Police/sheriff	1.00	0.77	1.29	0.00	.986
	Campus police	0.81	0.54	1.22	0.99	.320
	Private security	1.21	0.88	1.67	1.40	.237
	Other security	0.93	0.52	1.67	0.06	.812
	Security based in ED	0.87	0.71	1.08	1.56	.211
	24/7 security	0.82	0.66	1.03	2.93	.087
Environmental control measures	Bullet-proof glass	0.96	0.72	1.28	0.08	.774
	Enclosed nurses' station	1.00	0.75	1.33	0.00	.987
	Handcuffs	1.08	0.83	1.41	0.36	.548
	Security batons	0.99	0.74	1.32	0.01	.942
	Pseudonym for call code	1.09	0.88	1.36	0.59	.441
	Mace	1.31	0.94	1.82	2.60	.107
	Limits on number of visitors	1.12	0.92	1.37	1.35	.245
	Locked treatment spaces	1.06	0.85	1.31	0.32	.575
	Locked/coded ED entry	0.95	0.75	1.20	0.19	.661
	Mirrors for hidden spaces	1.19	0.97	1.45	2.79	.095
	Panic button/silent alarm	1.01	0.82	1.25	0.02	.890
	Physical/leather restraints	0.99	0.74	1.31	0.01	.933
	Personal search	0.99	0.81	1.21	0.01	.937
	Chemical restraints	1.14	0.92	1.41	1.43	.231
	Safe for cash payments	1.03	0.83	1.27	0.07	.798
	Security cameras	1.19	0.91	1.57	1.62	.202
Security signage	0.94	0.77	1.15	0.38	.539	
Visitor tag/badge	1.02	0.84	1.24	0.05	.828	
Well-lit areas in the ED	0.84	0.61	1.15	1.18	.278	
Safety perception, training, and preparedness	<b>Nurse safety rating (z)</b>	<b>0.59</b>	<b>0.52</b>	<b>0.67</b>	<b>71.05</b>	<b>&lt;.001</b>
	<b>Preparedness rating (z)</b>	<b>1.16</b>	<b>1.03</b>	<b>1.30</b>	<b>5.77</b>	<b>.016</b>
	Attended at current hospital (vs NT)	1.04	0.78	1.38	0.06	.800
	Attended at other location (vs NT)	0.90	0.67	1.22	0.44	.509
	<b>Attended at both (vs NT)</b>	<b>1.55</b>	<b>1.04</b>	<b>2.33</b>	<b>4.54</b>	<b>.033</b>
	Mandatory training (vs NT)	1.26	0.85	1.86	1.31	.252
	Training not mandatory (vs NT)	1.18	0.83	1.66	0.84	.359
Hospital safety commitment and policy	<b>Hospital administration commitment (z)</b>	<b>0.67</b>	<b>0.59</b>	<b>0.76</b>	<b>37.17</b>	<b>&lt;.001</b>
	ED management commitment (z)	1.04	0.91	1.19	0.37	.545
	Nurses commitment (z)	1.08	0.95	1.23	1.41	.235
	Physicians commitment (z)	1.04	0.91	1.19	0.28	.597
	Other healthcare workers commitment (z)	0.88	0.76	1.01	3.49	.062
	No zero tolerance policy (vs No reporting policy)	0.74	0.54	1.01	3.54	.060
	<b>Zero tolerance policy (vs No reporting policy)</b>	<b>0.70</b>	<b>0.50</b>	<b>0.97</b>	<b>4.50</b>	<b>.034</b>
Nurse sex and age	<b>Male (vs Female)</b>	<b>1.29</b>	<b>1.01</b>	<b>1.66</b>	<b>4.16</b>	<b>.041</b>
	Age 35-44 (vs 18-34)	0.82	0.63	1.08	1.94	.163
	<b>Age 45-54 (vs 18-34)</b>	<b>0.71</b>	<b>0.54</b>	<b>0.92</b>	<b>6.66</b>	<b>.010</b>
	<b>Age 55+ (vs 18-34)</b>	<b>0.65</b>	<b>0.48</b>	<b>0.88</b>	<b>7.76</b>	<b>.005</b>
Nurse role	<b>Charge nurse (vs Staff nurse)</b>	<b>1.34</b>	<b>1.06</b>	<b>1.70</b>	<b>5.82</b>	<b>.016</b>
	Clinical coordinator (vs SN)	0.83	0.51	1.35	0.58	.447
	<b>Clinical educator (vs SN)</b>	<b>0.29</b>	<b>0.18</b>	<b>0.47</b>	<b>26.66</b>	<b>&lt;.001</b>
	<b>Clinical nurse specialist (vs SN)</b>	<b>0.41</b>	<b>0.20</b>	<b>0.83</b>	<b>6.09</b>	<b>.014</b>
	<b>Director/manager (vs SN)</b>	<b>0.72</b>	<b>0.54</b>	<b>0.96</b>	<b>4.88</b>	<b>.027</b>
	Nurse practitioner (vs SN)	0.94	0.38	2.35	0.02	.896
	Trauma coordinator (vs SN)	0.58	0.28	1.16	2.38	.123
	Others (48) or Missing (14) (vs SN)	1.01	0.55	1.85	0.00	.987

## F. Additional Workplace Violence Data

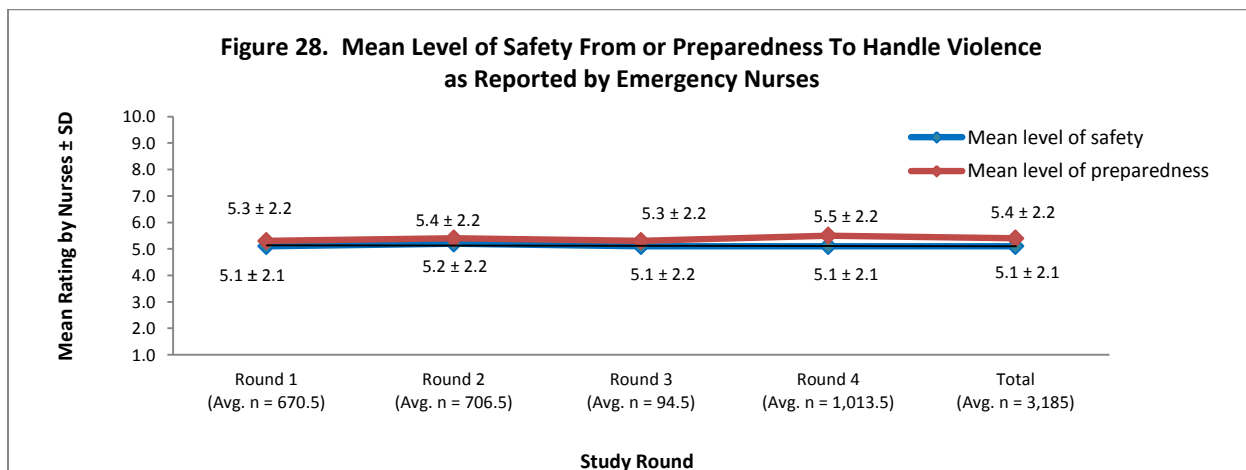
Almost all of the emergency nurses (95.9%) in the study believed that the level of workplace violence in their ED had remained the same or increased over the past year. Due to the level of ED workplace violence, a quarter of participants (26.6%) had considered leaving their current ED for either another unit in the same hospital or another hospital altogether (all units). Yet despite the high rate of workplace violence, only 9.5% of participants reported having considered leaving the nursing profession entirely, and the overwhelming majority (72.9%) had not considered leaving their current ED (Table 33).

**Table 33. Nurses' Desire to Leave the ED Due to Workplace Violence†**

	% of Emergency Nurses				
	Round 1 (n = 667)	Round 2 (n = 709)	Round 3 (n = 795)	Round 4 (n = 1,021)	Total (n = 3,192)
Have not considered leaving ED	73.6%	74.0%	69.8%	73.9%	72.9%
Considered looking for employment in non-emergency nursing	16.2%	17.9%	19.6%	16.0%	17.4%
Considered looking for employment in emergency nursing with another hospital	9.4%	8.9%	11.6%	7.5%	9.2%
Considered leaving the nursing profession entirely	7.8%	9.2%	11.1%	9.7%	9.5%

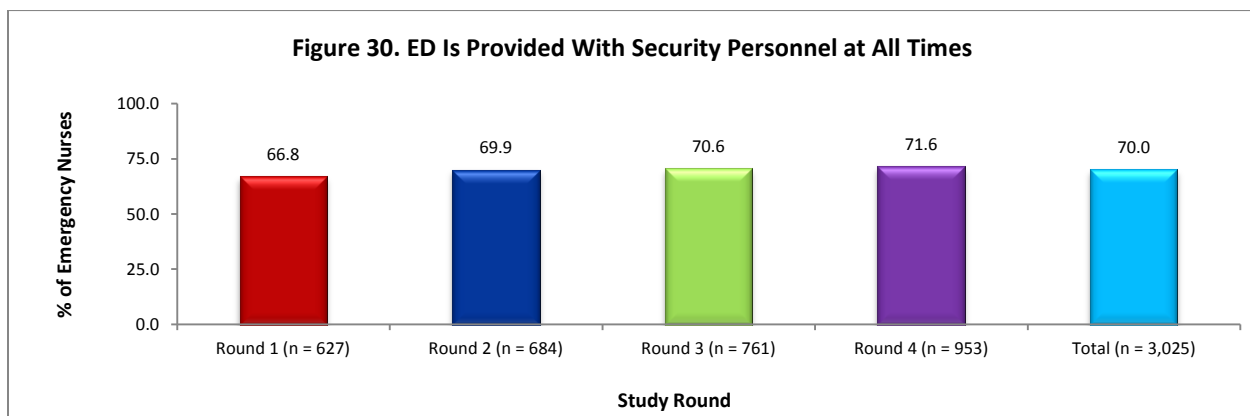
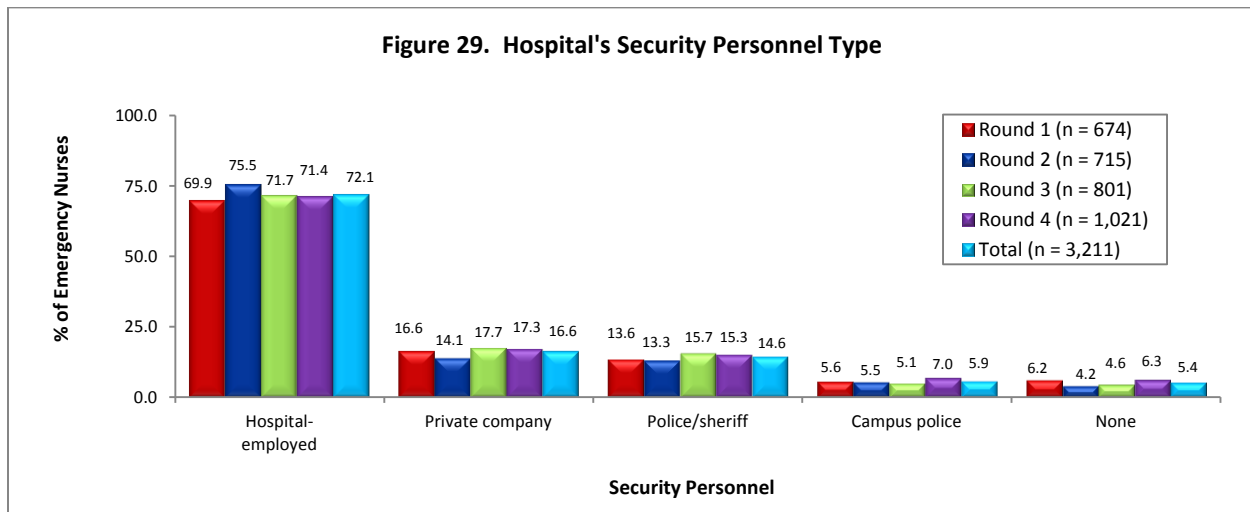
†Percentages do not equal 100% as respondents could select more than one response.

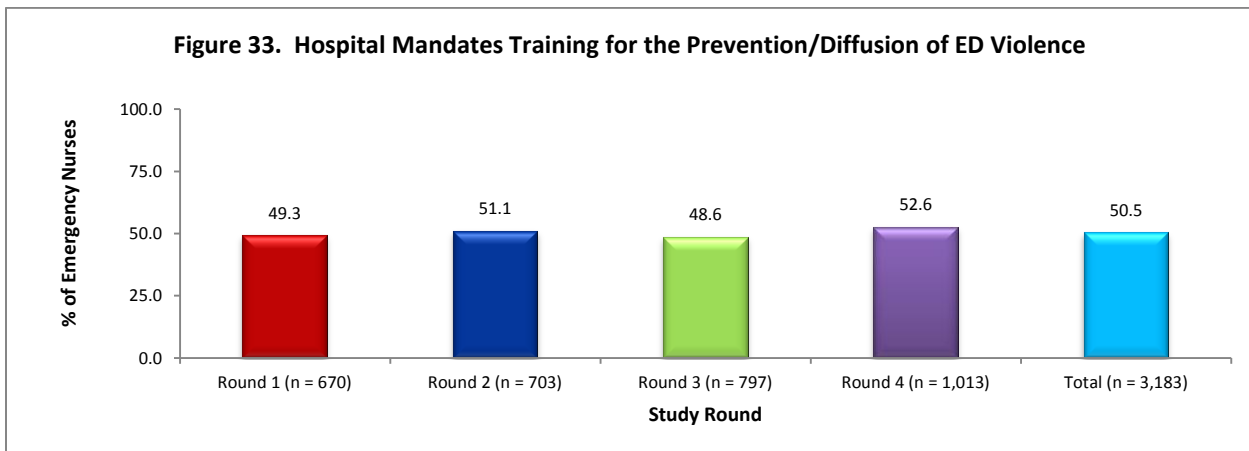
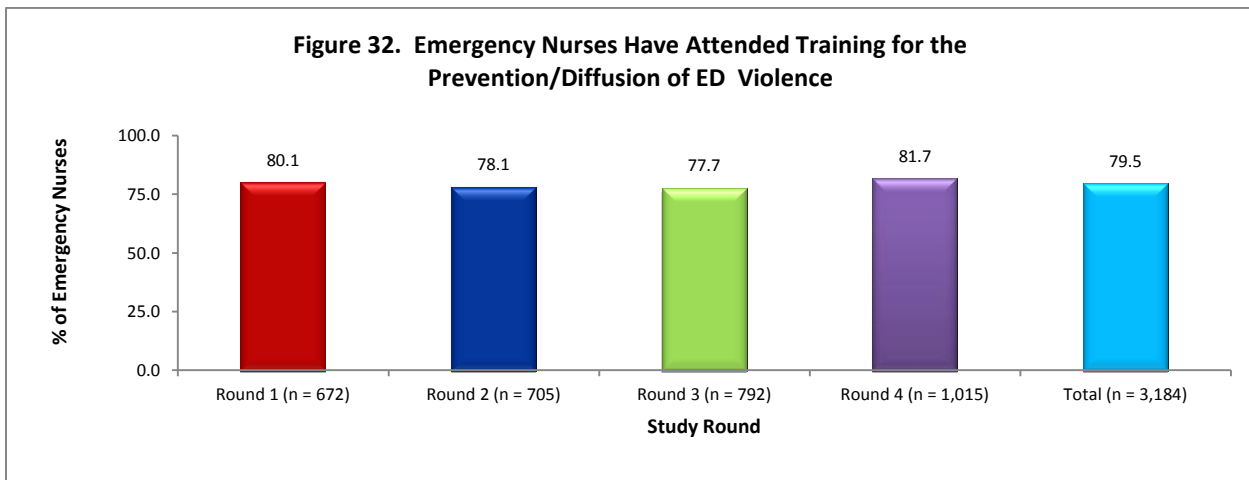
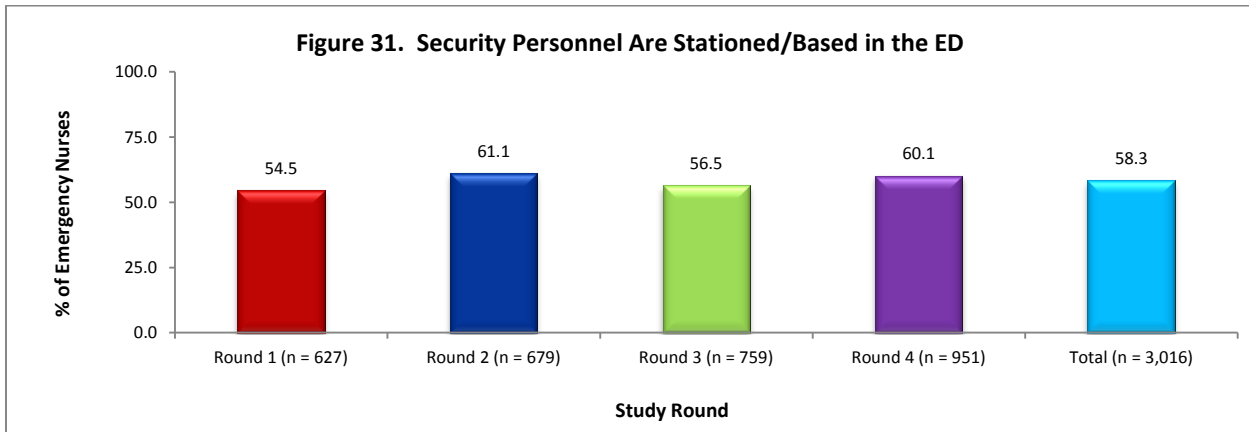
When asked whether the state in which they worked had a law to protect health care workers from workplace violence, 30.2% reported that the state did have this type of legislation in place, 23.2% reported the state did not, and almost half (46.6%) did not know. Over half (57.8%) of participants reported that they did not feel safe from workplace violence while at work in the ED (mean =  $5.1 \pm 2.1$ ) and 52.7% felt unprepared to handle violence from ED patients and/or visitors (mean =  $5.4 \pm 2.2$ ) (Figure 28).



According to the emergency nurse participants, the five most commonly reported factors that precipitate incidents of ED workplace violence were: 1) caring for psychiatric patients in the ED (89.4%); 2) drug-seeking behavior by patients/visitors (87.5%); 3) ED crowding (81.6%); 4) patients/visitors under the influence of alcohol (80.9%); and 5) patients/visitors under the influence of illicit drugs (77.3%).

Figures 29-31 represent data on ED security personnel. Approximately three-quarters of nurses reported that their facility had hospital-employed security personnel (72.1%) and that security was provided to the ED at all times (70.0%). For those EDs without continuous availability of security personnel (30.0%), they averaged 6.58±6.68 hours of security personnel coverage per day. While 20.5% of emergency nurses reported that they had never attended training for handling ED workplace violence prevention/diffusion, half of emergency nurses (50.5%) reported that training for the prevention/diffusion of workplace violence is mandatory within their hospital (figures 32-33).





The five most commonly reported environmental controls used in the ED to prevent violence from patients/visitors were making sure areas were well-lit (91.0%), physical/leather restraints

(88.0%), security cameras (85.3%), locked/coded ED entries (80.6%), and a pseudonym to call a code to alert other staff to a situation (77.5%) (Table 34).

**Table 34. Environmental Controls Used in EDs**

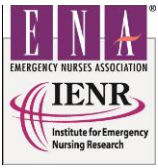
Environmental Control	% of Emergency Nurses				
	Round 1	Round 2	Round 3	Round 4	Total
	(Average n = 664)	(Average n = 694)	(Average n = 789)	(Average n = 1,001)	(Average n = 3,148)
Bullet-proof glass	8.3%	10.0%	9.8%	11.4%	10.0%
Enclosed nurses' station	11.7%	11.7%	9.8%	12.0%	11.4%
Handcuffs	16.7%	20.9%	19.9%	20.9%	20.0%
Security batons	13.0%	16.8%	13.4%	16.8%	14.6%
Pseudonym to call a code	76.5%	78.7%	76.6%	78.7%	77.5%
Mace	8.1%	9.3%	9.7%	9.3%	9.5%
Limits on number of visitors	60.5%	63.7%	59.9%	63.7%	62.0%
Locked treatment room	24.3%	23.4%	24.6%	23.4%	24.7%
Locked/coded ED entries	79.1%	82.2%	80.4%	82.2%	80.6%
Mirrors to show hidden spaces	30.8%	32.0%	29.2%	32.0%	29.9%
Panic button/silent alarm	74.6%	72.8%	73.1%	72.8%	73.6%
Personal belongings search	45.3%	54.5%	55.0%	54.5%	53.3%
Physical/leather restraints	87.4%	88.1%	87.8%	88.1%	88.0%
Chemical restraints	69.3%	75.5%	76.0%	75.5%	74.3%
Lock box/safe for cash	58.8%	63.8%	62.8%	63.8%	61.6%
Security cameras	85.2%	85.0%	84.0%	85.0%	85.3%
Security signage	38.8%	46.1%	40.9%	46.1%	42.4%
Visitor tag/badge	41.9%	47.8%	44.5%	47.8%	44.4%
Well-lit areas in the ED	89.6%	90.7%	90.7%	90.7%	91.0%

## IV. Summary of the Findings

This report represents analysis of the first four consecutive rounds of data collected approximately three months apart, from May 2009 to February 2010. A total of 3,211 ED nurses (average of 802 across the four rounds) participated in the study.

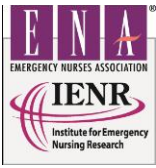
- Overall physical violence and verbal abuse rates during a seven-day period (during which the nurses worked an average of 36.8 hours) were fairly high across all rounds (mean = 54.8%, ranging from 50.7% in round 1 to 58.4% in round 2). The overall rate is primarily a function of verbal abuse. Physical violence rarely occurred without verbal abuse (22 cases, or 0.8%, summed across all rounds).
- The physical violence and verbal abuse rates remain high across all rounds with minimal variation. Specifically, an average of 11.0% (ranging from 8.3% to 12.8%) of the participants reported experiencing physical violence, and 43.8% (ranging from 42.4% to 45.7%) reported experiencing verbal abuse only.
- Based on the pooled data, the most prevalent types of physical violence and verbal abuse were having been grabbed/pulled by a person (47.0%) and having been yelled/shouted at (89.6%).
- The majority of the participants who were victims of workplace violence did not file a formal event report for the physical violence (64.2%) or the verbal abuse (87.2%) that they experienced.
- Over three-quarters (80.6%) of incidents of physical violence against emergency nurses occurred in a patient's room, 23.2% in a corridor/hallway/stairwell/ elevator, and 14.7% at the nurses' station.
- The most frequently reported activities that the emergency nurses were involved in at the time of a physically violent incident were triaging a patient (38.2%), restraining/subduing a patient (33.8%), and performing an invasive procedure (30.9%).
- Patients and their relatives were the main perpetrators in all incidents of physical and verbal violence, with 97.1% of physical incidents and 91.0% of verbal incidents having involved a patient.
- Exactly 15% of emergency nurses in the study who indicated being victims of workplace physical violence sustained a physical injury, with the most common type of injury being a bruise/contusion/blunt trauma (64.6%).
- Of the emergency nurses who indicated experiencing physical violence, almost half (44.9%) reported that no action was taken against the perpetrator as a result of the violence, and just under a quarter (23.4%) reported that the perpetrator was given a warning. When asked about the hospital's response/recommendation to the nurse, nearly three-quarters of nurses (74.4%) stated that the hospital gave them no response concerning the physical violence they experienced. Similarly, half (50.5%) of the nurses who indicated being victims of verbal abuse responded that no action was taken against the perpetrator(s), and just over a quarter (29.6%) reported that the perpetrator was given a warning. In regard to the hospitals' responses to the nurses who experienced verbal abuse, more than three-quarters (81.3%) indicated that the hospital gave them no response.

- Physical violence rates tended to increase as population density increased, rising from Rural (8.3%) to Large Urban (13.4%) settings with middling rates in Suburban and Small Urban settings. The rate was significantly above average in Large Urban settings (OR=1.42,  $p=.005$ ), and significantly below average in Rural settings (OR=0.69,  $p=.027$ ). The same pattern holds true for verbal abuse.
- Nurses working in a Pediatric Only ED are less likely (OR=.047) to experience physical violence compared to nurses working in General and/or Adult EDs. Again, the same pattern holds true for verbal abuse.
- Overall, as Total ED Beds, Additional Treatment Space, Use of Added Space, and Total ED Visits increased, the odds of physical violence and verbal abuse increased.
- The use of a panic button/silent alarm is associated with lower physical violence rates while the presence of an enclosed nurses' station, security signage and well-lit areas were associated with significantly lower verbal abuse rates.
- In general, higher perceived safety ratings by nurses were associated with lower rates of physical violence and verbal abuse.
- Male nurses reported higher physical violence rates than female nurses (15.0% versus 10.3%, OR=1.53,  $p=.005$ ). Physical violence rates tended to decline as nurses' age increased, from 13.8% in the youngest category (18 to 34) to 8.2% in the oldest category (55 or older). The odds of physical violence were 1.78 times higher in the youngest category of nurses versus the oldest category (OR=0.56,  $p=.005$ ). Again, the same pattern holds true for verbal abuse.
- Higher commitment to violence mitigation from hospital administration and ED management and the presence of reporting policies (especially zero-tolerance policies), were associated with a lower odds of physical violence and verbal abuse. Specifically, hospitals with no reporting policy had an 18.1% physical violence rate, hospitals with a non-zero tolerance reporting policy had a 12.3% physical violence rate, and the lowest rate was in settings with a zero-tolerance reporting policy (8.4%).
- Nurses whose hospital administration (OR = 0.73) and ED management (OR = 0.76) are committed to workplace violence control are less likely to experience workplace violence.



## **V. Limitations**

As is true for most studies based on self-report, this study is limited by the potential inaccuracy of self-reported data. No self-report study can conclusively identify factors related to ED workplace violence. Because all participants were ENA members, the generalizability of the study is limited. Despite these limitations, the results indicate the extent and severity of workplace violence experienced by emergency nurses and the need to continue to address the issues of preventing, mitigating and reporting ED violence.



Emergency Nurses Association  
Institute for Emergency Nursing Research  
August 2010

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