# Development and Evaluation of a Hospital Violence Surveillance System

## Final Project Report

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**FINAL PROJECT REPORT**

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Project Title: Development and Evaluation of a Hospital Violence Surveillance System


Principal Investigator: Lisa A. Pompeii, PhD, COHN-S[a]
Associate Professor

Co-Investigators: John M. Dement, PhD[b]
Professor

Hester J. Lipscomb, PhD[b]
Professor

Claudia Smith, PhD[c]
Director of Nursing Research

Ashley L. Schoenfisch, PhD[b]
Assistant Professor

Sarai H. Conway, PhD[a]
Assistant Professor

Affiliations: School of Public Health[a]
Department of Epidemiology, Human Genetics & Environmental Sciences
University of Texas Health Science Center at Houston
1200 Herman Pressler
Houston, Texas 77030

Division of Occupational and Environmental Medicine[b]
Duke University Medical Center
PO Box 3834
Durham, N 27710

Baylor - St. Luke's Medical Center[c]
6720 Bertner Avenue
Houston, Texas 77030

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## A. Specific Aims

Violence against workers in the hospital setting, including both physical and verbal assaults, has become a growing public health concern. Recent studies have demonstrated a 12-month prevalence of reported workplace violent assaults experienced by nursing staff and physicians ranging from 24% to 74%, with verbal assaults ranging from 23% to 80%. These estimates are considered conservative as several studies have observed significant underreporting of violent episodes experienced by hospital workers. Violence perpetrated by patients and visitors is the most common type of violence reported in this setting. The lack of standardized surveillance methodology to capture incident cases of workplace violence, as well as details about the circumstances surrounding these in the hospital setting means that preventive policy development is often made on an ad hoc basis or triggered by sentinel events.

We propose to design and implement a comprehensive violence surveillance system that effectively captures episodes of workplace violence inflicted on hospital workers by patients and visitors. This system will record circumstances surrounding these violent episodes and generate information that will be used to inform more detailed etiologic analyses and violence prevention efforts by hospital stakeholders. The work will take place in two large medical systems which include two tertiary care hospitals and four community hospitals located in Texas and North Carolina. We will partner with key stakeholders at the study hospitals to develop an enhanced online mechanism for capturing incident cases of workplace violence, as well as develop supporting policies and procedures that detail the mechanisms in place for reporting these events. We will conduct a preliminary assessment of the level of integration of the workplace violence surveillance system and their corresponding policies in each hospital. This research study addresses NIOSH's strategic goal for promoting effective occupational health surveillance conducted by employers.

**AIM 1.** Conduct a baseline needs assessment that will: (1) examine the types of violent events captured through existing surveillance and reporting methods in place at all study hospitals; and, (2) identify the magnitude and nature of under-reporting. In this process, we will also assess workers' knowledge about the violence reporting policies and procedures in place within each hospital and work unit by means of survey and focus group methods. Attention will be paid to identifying both the formal and informal reporting structures for violent episodes in order to determine deficiencies in reporting that need to be addressed with the enhanced surveillance system. This process will allow us to determine if we need to expand our study definition of workplace violence in order to capture appropriate events as the surveillance system is more clearly defined and improved.

**AIM 2.** Conduct baseline and ongoing analyses of existing administrative data for purposes of characterizing the frequency and type of reported episodes of workplace violence among hospital workers. Through rate-based analyses of workers' compensation and first report of injury data, we will describe reported violent events by hospital and work unit, as well as explore factors associated with violent episodes that are reported based on worker, job, unit and perpetrator characteristics.

**AIM 3.** Develop and implement the enhanced workplace violence surveillance system that includes both an online mechanism for reporting violent events and reporting policies and procedures that support this system. Using data from the baseline needs assessment, we will collaborate with occupational safety and security personnel (who manage the hospitals' online first report of injury programs) to develop and implement the Enhanced Online First Report of Injury form. Simultaneously, we will collaborate with key hospital stakeholders to update/develop new violence policies and procedures that detail the mechanisms for reporting violent events through the enhanced surveillance system. We will partner with these hospitals to promote this new system through an official "roll-out" through promoting and educating workers about the system.

**AIM 4.** Conduct a preliminary evaluation of the integration of the enhanced violence surveillance system, as well as the integration of unit level violence reporting policies and procedures. These findings will be provided to hospital stakeholders for purposes of continued refinement of both the surveillance system and reporting policies and procedures.

## B. Study Overview

This five year study was conducted in two large medical centers in Texas (TX) and North Carolina (NC). Each system consisted of one level-3 medical center and two smaller community hospitals, with an estimated sample size of 11,000 workers. We proposed to conduct this study in three phases, including: phase 1- needs assessment of existing workplace violence reporting systems in the study hospitals, and a baseline assessment of the 12-month prevalence of type II violence; phase 2- design and implementation of an enhanced surveillance system; and phase 3- preliminary evaluation of the enhanced surveillance system.

Prior to the start of phase 1, we successfully completed a large systematic review of published studies pertaining to type II violence in the general medical hospital setting. More specifically, we reviewed articles that had been published in the prior 11 years. Findings from this review were used to develop a draft of our type II workplace violence study definition. This definition was pilot tested among workers in our study hospitals prior to the implementation of phase 1.

Phase I (aims 1 and 2) of this study was very successful. We gathered baseline workplace violence data among 5,385 workers in the 6 study hospitals through the use of a survey (available online and paper; available in English and Spanish). We called this a "Blitz" survey because it was our intention to keep the survey brief, taking no longer than 5 minutes to complete. The term "blitz" is commonly used in our study hospitals when describing short, quick training approaches (blitz training) for nurses and other staff. Participants were asked to indicate the number of times they had been physical assaulted, physically threatened and verbally abused in the prior 12-months. Among those that reported an event, they were asked about patient and care-taking activities surrounding these events, and if and to whom they reported the event. The large sample of responders to this survey allowed us to conduct in-depth analyses of these events, including a broad examination of reporting patterns for type II violent events. These data were further enhanced by the conduction of focus groups and key informant interviews among more than 100 workers (e.g., managers, physicians, nursing staff and other frontline workers). This mixed methods approach provided important contextual details surrounding these events that have not previously been published. During the Blitz survey, workers who experienced a type II violent event were recruited to participate in an in-depth telephone interview, in which we conducted 104. In addition, we analyzed data captured through the hospitals' existing occupational injury, illness and safety systems for purposes of describing the type II violent events captured relative to what was reported through the baseline Blitz survey. This assessment allowed us to identify gaps in traditional occupational injury reporting systems with respect to capturing type II violent events.

Phase II and III (aims 3 and 4) of this study were not fully completed due to unforeseen circumstances within the study hospitals. The TX study hospital system was purchased by a larger health system during the third year of the study. The new hospital leadership were not ready to make changes to the existing hospital surveillance systems. The NC study hospital system worked to incorporate a new type II violence surveillance system under the direction and guidance of the study investigators at that site. However, the implementation of this system did not occur during the study period. Although we were not able to implement and evaluate new workplace violence surveillance systems in our study hospitals, the rich data we collected during Phase 1 allowed us to develop and publish recommendations for surveillance of type II violence (as well as types I, II and IV) by hospitals. We discovered many novel findings in this study which we believe will help hospitals to develop appropriate surveillance systems that are based in workplace violence reporting policies.

We have successfully disseminated our study findings in five published manuscripts, with an additional three manuscripts that are being finalized for submission. We have conducted at least 20 presentations (with more scheduled) to numerous audiences at occupational epidemiology and/or occupational health conferences, including one in which we won best scientific abstract. Our work was highlighted in the recent GAO Workplace Violence Report, and is being used in a current Canadian Institute for Work & Health task force aimed at improving workplace violence surveillance in hospitals nationally. Further, focus group study findings presented at the American Public Health Association conference were used by Dr. Jane Lipscomb in her recent book, "Not Part of the Job: How to Take a Stand Against Violence in the Work Setting." This following is a summary of the salient findings from this NIOSH funded study.

## C. Executive Summary of Study Findings

**C.1. Literature Review of Hospital-Based Type II Violence Studies:** We began our study by conducting a systematic review of general medical hospital-based studies that examined type II violence between 2000 - 2010 (see E.1.). This review was used to inform the development of our data collection surveys and focus group guides. In summary:

- We identified 17 studies (18 manuscripts) in the eleven year date range that focused specifically on type II violence in general hospitals settings that met our study criteria of having a sample size of at least 150 participants.
- Contrary to limitations stated in prior workplace violence literature, we found consistency in how type II violence was defined, including subcategories of physical assault, physical threat and verbal abuse.
- Although there was consistency in workplace violence definitions, there was inconsistencies in how analyses were conducted with respect to how subcategories (e.g., physical assault, physical threat, verbal abuse) were analyzed, limiting our comparisons of findings across studies.
- The prevalence of type II violence ranged considerably across studies: verbal abuse (22%-90%), physical threats (12%-64%) and physical assault (2%-32%).
- The literature lacked contextual details surrounding type II violent events.
- No consistent patterns of type II violence perpetrators emerged. Event types and perpetrator characteristics varied by hospital unit/specialty and patient demographics, suggesting that a one-size-fits-all approach to workplace violence prevention may not be effective. Tailored prevention efforts in some hospital units or patient populations would be beneficial.
- Adverse consequences reported by the victims (workers) included job dissatisfaction, physical and mental injury, feelings of anger, irritation, fear, self-blame, with a small prevalence of those that lost time from work. One study found almost half of workers coped with the event by "pretending" it did not happen.
- Two studies reported a large proportion of workers (25%-42%) armed themselves with a weapon for protection while at work.

**C.2. Type II Violence Events Reported into Existing Occupational Injury Surveillance Systems:** At the outset of the study, we examined the existing occupational injury surveillance systems in one of the study hospital systems (three hospitals) with respect to the prevalence and types of type II violent events being captured from 2004-2009 (see E.1.). In summary:

- 484 physical assaults were identified in the 6-year time period, with a type II violence injury rate of 1.75 events/100 full-time equivalents, which is in stark contrast to the 12-month prevalence of events reported through our cross-sectional survey (see E.2.).
- While these systems captured physical assault, they did not capture physical threat or verbal type II violent events. In addition, they only patient-perpetrated events, with no visitor-perpetrated events being captured.
- Victims of physical assault perpetrated by patients were higher for Blacks and those of Other races relative to White workers. Those with fewer years (<5) of work tenure at the study hospitals had a significantly higher rate relative to all other work tenure groups.
- Nurses, nurses' aides, respiratory care technicians, public safety personnel (e.g., security guards), and physical therapists/technicians had the highest rate of being victims of type II physical assaults.
- Many of the expected work areas had an elevated risk of type II violence (e.g., emergency room workers, psychiatry), as well those in float pool, intensive care units, neurology, and police/security.
- The assessment of the existing surveillance systems revealed the limited amount of information captured with respect to contextual details. Little was gleaned from the first report of injury, workers' compensation and OSHA log text descriptions, warranting the need for improved surveillance methodology of type II violent events.

**C.3. Type II Violence Prevalence Estimates by Workgroups and Circumstances:** We conducted a baseline survey (the Blitz Survey, see Appendix A) to examine the prevalence of type II violence among all workers. Approximately 11,000 workers were surveyed, in which 5,385 responded (49%). To date, this is one of the largest type II violence surveys conducted and published in the U.S.

- The overall 12-month prevalence of at least one type II violent event was 39%, including physical assaults (19%), physical threat (19%), and verbal abuse (62%) (mutually exclusive).
- Workers reported the number of times they were victims including 1,180 physical assaults, 2,260 physical threats, 5,576 verbally abused (not mutually exclusive). The number of times workers experience this type of treatment is masked with an overall prevalence estimate. These measures highlight the pervasiveness of violent behavior perpetrated by patients and visitors on to healthcare workers.
- As expected, direct patient care providers (nurse managers, nurses, nurses' aides, patient transporters) were at risk. Patient sitters, in which little has been studied on this work groups, had a significant risk (see E.5.) as well as nurse managers (see E.6.) which was unexpected.
- Some worker that do not provide direct care were also at an elevated risk including social worker/case manager, security guard/police, and administrative staff.
- Food service and housekeepers were at a reduced risk relative to all other workers. These workgroups have not previously been studied with respect to hospital violence and a negative finding is noteworthy.
- Some form of weapon (e.g., body part, body fluids, furniture) were used in 30% of the events, include 8% that the worker reported in the survey as "verbal abuse" only.
- The majority of events occurred in the patient's room, with significantly fewer happening in the hallway, waiting room, or elsewhere.
- A large proportion (63%) of events the worker attributed to the patient having mental health or behavioral issues, followed by medication/drug/pain management issues (37%), and feeling unhappy with their care/having conflict with a provider or family member (33%).
- Workers attributed most (72%) of the visitor-perpetrated events to the visitor being unhappy with the care the patient was receiving, followed by illicit drug use/alcohol (10%) and receiving bad news (9%).

**C.4. Reporting Patterns of Type II Violence by Workers**: We examined patterns of reporting type II violent events (n = 2,098) among respondents who incurred at least one type II violent event in the prior year. If participants incurred more than one type II violent event, they were asked to provide details about the one they deemed the most serious (see E.3. and E.6.). We also conducted focus groups and key informant interviews of more than 100 workers in which they discussed motivators & barriers to reporting.

- Contrary to prior study findings, 75% (1,574) of workers indicated that they reported their type II violence event.
- Only 9% of reported events were reported into a traditional occupational injury system of first report of injury (FRI) and/or general safety reporting system (1% were reported into both). If only the formal occupational injury reporting systems were examined by hospital management, these findings would suggest that type II violence rarely occurred in this 12-month time period.
- Workers' reporting patterns were disparate, with workers reporting more to coworkers, managers, physicians, security, and into the patient's medical record – compared to their reporting into hospital injury and safety reporting systems (i.e., first report of injury, safety reporting systems, patient safety reporting systems).
- None of the study hospitals had policy pertaining to the reporting expectations for type II violent events. This may explain the disparate nature of reporting on the part of the worker, who indicated in focus groups that they have their own "threshold" for when they report.
- Workers' threshold for reporting varied considerably based on workers' personal beliefs and feelings about the event, the patient/perpetrator characteristics, and their role as a healthcare professional.
- The capturing of violent events on the part of the hospitals was uncoordinated. For example, nurse managers expected workers to directly report these types of events to them, but they did not follow-through to ensure that these events were then reported into the first-report of injury.
- Hospitals did not have a coordinated method for pooling workplace violence event data across systems or groups, such as occupational health, hospital security, nursing management, human resources, and risk management.
- Factors associated with reporting type II violent events included violence sub-type of physical assault or physical threat relative to verbal abuse; feeling frightened for personal safety due to the event; incurring

an injury, if a weapon was used; worker perceived that the perpetrator intended to harm them; not being alone during the event.
- Workers were significantly less likely to report a type II violent event if they were along during the event.
- No differences in reporting prevalence was observed based on perpetrator type (patient or visitor).
- Patient satisfaction and patient satisfaction scores was a barrier to reporting. The employer's emphasis on patient satisfaction made the workers feel marginalized, and gave them the impression that worker safety was not a priority.
- Workers felt supported by their immediate supervisors (see E.6.) with respect to reporting events, but they did not feel supported by the hospital administration. There was a lack of follow-up on the part of the hospitals.
- The lack of follow-up on the part of the employer post-event reinforced workers' feelings that type II violence is "part of the job." Workers found a way to covertly "tell their side of the study" by reporting these serious events in the patients' medical records.

**C.6. Workgroups at High Risk for Type II Violence**

**Patient Sitters** (see E.5.) (or "Sitters") are commonly utilized by hospitals to provide direct/constant observation for patients cannot be left alone due to their health (e.g., dementia, suicidal, disoriented). Although sitters serve a vital role in patient care, little has been published about their occupational health and injury risk. In fact, little was provided from study hospitals about their defined roles, responsibilities, or required training before and/or after hiring.
- Focus groups were conducted among these workers, who reported seriously unsafe working conditions with respect to type II violence. Concerns about sitters' safety were expressed by nurse managers more so than sitters themselves.
- They lacked training on job responsibilities and tasks with respect to their sitter duties, as well as training on violent event de-escalation and mitigation.
- Sitters were not integrated into the work flow of a nursing unit and were often left in isolation to deal with difficult and violent patients. Their isolation seemed to place them at greater risk for becoming victims.
- Often, sitters were not given the appropriate information needed at the outset of the work shift about the patient's potential for being violent.

**Nurse Managers** (see E.6.): Nurse managers had a higher than expected prevalence of type II violence. Their risk was similar to that of nurses and nurses' aides.
- Nurse managers play a significant role in the mitigation and management of violent events.
- They are the go-to person for staff when assistance is needed with a violent patient and/or visitor.
- This workgroup seems to be shouldering a significant responsibility for managing these events with little training or support from administration.
- Some nurse managers were frustrated and overwhelmed with managing these events.

**Emergency Room Workers** (see E.7.): The 12 month prevalence of type II violence (among 282 ED workers) was 26.2% that experienced physical assault, 47.2% physical threat, and 73.8% verbal abuse; prevalence was highest among nurses.
- Workers described situations that presented risk for violence including drug seekers, repeat patients, individuals en route to jail, psychiatric patients and more.
- The physical environment of the emergency rooms provided little physical protection for workers. Many were set up to ensure open access to the patient and family members. In the event of a violent patient or visitor, the workers did not have a safe-space to go for protection.
- The emergency rooms were typically staffed with security police or guards. The security police were able (legally) to intervene in ways that security guards could not. Differences in what these security personnel could and could not do created confusion for workers when they called upon security for assistance.
- The emergency department workers seemed to have more methods in place (relative to inpatient units) to protect themselves from becoming victims, such as working in pairs and calling for help from others

when needed. This is based on focus group data and should be further explored. Lessons learned by emergency room workers could be valuable for inpatient units with respect to workplace violence prevention.

**C.7. Adverse Consequences Experienced by Worker Victims of Type II Violence:** We gathered data as part of the Blitz survey, focus groups, telephone interviews and existing administrative and health data.

- In the blitz survey, among workers that experienced at least one violent event in the prior year, 38% of the 2,098 workers indicated that the violent event made them feel scared or frightened for their personal safety at work, while 18% perceived that the perpetrator intended to harm them.
- The prevalence of injury reported in the blitz survey was low (5%); however, the bulk of injuries were incurred by nurses, nurses' aides and patient transporters. These findings differ from those reported in our in-depth telephone interviews (see E.8.).
- Nurse managers and front-line staff indicated repeatedly in the focus group discussions that there were times when they did not feel safe at work and/or they were concerned about the safety of other workers. This is highlighted in several of our papers.
- Among the 104 workers that participated in the in-depth telephone interviews (see E.8.), almost all (88%) indicated experiencing an injury and missing time from work. Almost half indicated that the event made them feel stressed at work, with one-fourth that were considering leaving the job and/or the profession. These workers also expressed a decrease in job satisfaction and had problems performing their job.

Existing occupational health surveillance data (2004-2009) from the Duke Health and Safety Surveillance System (DHSSS) were used to examine associations between type II violent events (e.g., captured from the first report of injury, workers compensation, OSHA log, safety reporting system) with private health insurance (in-patient and out-patient) and pharmacy claims (see E.4.). Associations between type II violent events and psychological health outcomes and related medication use was examined. In summary:

- Workers that experienced type II violence events were significantly more likely to use anti-depressant and anxiolytics relative to workers that did not report experiencing a violent event.
- No associations were found with experiencing type II violence and seeking mental health services; however, this null association could be due, in part, to workers having free access to Employee Assistance Program (EAP) services for a number of visits before they are charged or the visits appear in the medical claims data. Further, studies have suggested that a large number of individuals taking medications for anxiety and depression do not concurrently receive professional counseling or therapy.
- Analyses of medication usage during one-month prior to the event compared to post-event revealed an elevated usage of antidepressants and anxiolytics during the post-event period.

**D. Recommendations for Improved Surveillance of Workplace Violence in Hospitals** (see E.3.)
Findings from our study contradict the long-held believe that workers significantly under-report type II violent events. The majority of workers report these events, but outside the formal occupational surveillance reporting systems. Findings from this study highlight the need for coordinated type II violence surveillance efforts on the part of hospital administration. The following is a list of our recommendations for improved hospital-based surveillance of type II violent events:

- Using OSHA's recently published "Guidelines for Preventing Workplace Violence in Healthcare and Social Services Workers", we re-iterate their suggestions for using the OSHA log data to track type II violent events, but we underscore that this is not enough. Our study found that using only using OSHA log and workers' compensation data results in a significant under-counting of type II violent events.
- Institutions need a stand-alone workplace violence reporting systems AND a written workplace violence reporting policy that the supports the use of the reporting system.
- The workplace violence reporting policy should include an explicit definition of workplace violence including definitions of violence sub-types (e.g., physical assault, physical threat, verbal abuse, etc). This ensures that the employer, not the worker, is determining where the threshold is for reporting these events.
- The reporting policy should explicitly state where workers should "formally" report the event, in addition to "informally" reporting (e.g., if they informally report to a coworker or manager, they must also formally report into the stand-alone reporting or the first report of injury system).
- The reporting policy should guide the manager and/or security to formally report what workers report to them (or ensure that the worker formally reports).
- Train workers on reporting procedures (formally and informally), including training upon hire, and then annually.
- Hospitals should have a mechanism in place for pooling all type II violent event data captured outside the main reporting systems (e.g., managers, security, human resources, risk management, occupational health, patient charts).
- The reporting system should be easily accessible to all workers. The intake event form should be short, avoiding time consuming reporting.
- Having a link within the medical record system (e.g., EPIC) in which workers could access while documenting about patient care could save additional time.
- Follow-up post reporting of a type II violent event on the part of management, security, risk management, and occupational safety should always be conducted.
- A process should be in place to evaluate the effectiveness of the reporting policy and reporting system.
- Hospitals should conduct short surveys of workgroups to assess their knowledge of where/when to report.
- Hospitals should conduct short, intermittent surveys to assess the prevalence of type II violence in select workgroups and departments. Findings from the survey should be compared to what is captured in the formal reporting system (similar to what we conducted in this study).
- Hospitals cannot develop and evaluate the effectiveness of targeted workplace violence prevention programs without this type of surveillance system in place – which must be supported by type II violence reporting policies.

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# Perpetrator, worker and workplace characteristics associated with patient and visitor perpetrated violence (Type II) on hospital workers: A review of the literature and existing occupational injury data☆

Lisa Pompeii *, John Dement, Ashley Schoenfisch, Amy Lavery, Megan Souder, Claudia Smith, Hester Lipscomb

*The University of Texas, School of Public Health, 1200 Herman Pressler, RAS E617, Houston, Texas 77030, USA*

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*Problem:* Non-fatal type II violence experienced by hospital workers (patient/visitor-on-worker violence) is not well described. *Methods:* Hospital administration data (2004-2009) were examined for purposes of calculating rates of type II violent events experienced by workers. We also conducted a review of the hospital-based literature (2000-2010) and summarized findings associated with type II violence. *Results:* 484 physical assaults were identified in the data, with a rate of 1.75 events/100 full-time equivalents. Only few details about events were captured, while non-physical events were not captured. The literature yielded 17 studies, with a range proportion of verbal abuse (22%–90%), physical threats (12%–64%) and assaults (2%–32%) reported. The literature lacked rigorous methods for examining incidence and circumstances surrounding events or rates of events over time. *Discussion:* For purposes of examining the impact of type II violence on worker safety, satisfaction and retention, rigorous surveillance efforts by hospital employers and researchers are warranted.



## 1. Problem

Workplace violence perpetrated by patients and visitors towards hospital staff (Type II violence) has received increased attention in recent years; however, this workplace issue is not new. In 1985, Jones reported that among hospital staff at a Veterans Administration Hospital, nurses' aides and nurses reported that the majority of injuries were due to workplace violence, and patients were more likely to be the perpetrator of these assaults. More recently, a large cross-sectional study of nurses working in various health care settings in Minnesota reported rates of physical assault by patients and visitors as high as 13.2 per 100 person-years of work (Gerberich et al., 2005).

Despite the publication of numerous studies over the past two decades, little is known about the risk factors of Type II violence in the hospital setting, as well as rates of violence and changes in these rates over time. In 2001, a report by a team of violence research experts highlighted the lack of informative data pertaining to nonfatal workplace violence relative to the "enormous scope of the problem" (Merchant & Lundell, 2001; Peek-Asa, Runyan, & Zwerling, 2001). The implementation of coordinated surveillance efforts of nonfatal workplace violence for purposes of creating prevention programs based in scientific evidence was encouraged.

The purpose of this study was to identify risk factors of Type II violence experienced by hospital workers and to describe what is known about these events including: (1) perpetrator characteristics; (2) worker characteristics; (3) circumstances surrounding violent events; (4) potentially relevant work environment factors; (5) warning signs; and (6) consequences experienced by workers who were victims of Type II violence. These elements were identified through a systematic review of the literature, as well as analysis of existing administrative data among hospital workers employed in three study hospitals. Findings from these analyses will be used to inform the development of an online hospital violence surveillance system aimed at capturing circumstances surrounding these types of events from workers, which is part of a larger, ongoing study.

## 2. Methods

These data were collected through a systematic review of the literature and analyses of reported Type II violent events among workers at a major university medical center and two community hospitals that are part of the same health system.

### 2.1. Existing worker injury reports

Data sources: Data for these analyses came from the Duke Health and Safety Surveillance System (DHSSS) (Dement et al., 2004), that includes occupational data for employees in the Duke University Health System (DUHS) which includes a tertiary care academic medical center and two community hospitals. Events of interest for these analyses originated from three different potential sources including reported

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* Corresponding author.

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workers' compensation claims, Occupational Safety and Health Administration (OSHA) logs, and the hospitals' Safety Reporting System (SRS). SRS is an online voluntary reporting system where workers can report any safety concerns related to patients, visitors, clinicians or employees regardless of whether the event resulted in an injury.

Administrative data from Human Resources were used to define the study population at risk. Workers were included if they: (1) contributed work hours during years 2004 through 2009; (2) worked as a nurse, nurses' aide, clinical technical worker (with the exception of those working in the morgue or animal handling facility), police officer or security worker; and (3) worked in one of the three health system hospitals. For each worker, time at risk was estimated each year using available data on their work schedules (hours/week) and months employed during a given study year. Time at risk was defined as the number of full-time equivalents (FTE), where 1 FTE=2,000 hours worked. Injury surveillance and Human Resources data were de-identified and linked at the individual worker level for analyses.

Six years (2004 through 2009) of workers' compensation (WC) claims, incident reports in the Safety Reporting System (SRS), and OSHA logs were used to capture and characterize Type II violence events. Events were identified through a review of all text descriptions provided in each of these data sources. Initially, injury events were flagged if the text description contained a keyword(s) suggesting a violent event. Keywords were similar to those used to identify physical assaults in previous research using DHSSS data (Rodríguez-Acosta et al., 2010), and included patient/visitor characteristics (e.g., "confused," "combative," "disoriented"), patient/visitor actions toward staff (e.g., "scratch," "kick," "bite," "grab," "pull"), and staff actions toward the patient/visitor (e.g., "restrain," "struggle"). The flagged events were then manually reviewed and events were retained if they pertained to Type II violence. If an event was present in multiple data sources, it was counted as a single event.

Data Analysis: Violent events were described in terms of the cause, nature, and body site of injury, which are existing codes in WC. Similar codes were assigned for the claims from SRS and the OSHA log based on information available in text descriptions of the events. Events were characterized by whether they resulted in days away from work (for events in WC or OSHA logs only) and/or received medical care. Event text descriptions were also used to gather additional event details, including the perpetrator (i.e., patient, visitor) and their characteristics, patient/visitor actions toward staff, staff actions toward the patient/visitor and characteristics of the patient/visitor.

The study cohort was described in terms of the number of workers, time at risk and frequency of work-related Type II violent events overall, over time and by worker gender, age, race, institutional tenure, occupational group and work location. The overlap of reported events between the three reporting systems was described. Violent events were described by occupational group. Crude rates, rate ratios (RR) and 95% confidence intervals (CI) were estimated using Poisson regression, with the natural log of full-time equivalents as the offset.

### 2.2. Review of the literature

Inclusion/exclusion criteria: A known limitation of the literature is the inconsistency with which Type II violence has been defined ranging from verbal threats, physical threats, and/or physical assault including sexual assault. Since no definition has been broadly accepted or applied we chose not to restrict our review to any one definition. We included peer-reviewed studies that (1) addressed Type II violence experienced by any type of worker in the hospital setting; (2) were written in English; and (3) were published from January 2000 through February 2010. We excluded studies conducted in other healthcare settings such as nursing homes and psychiatric hospitals. If a study examined Type II violence in various healthcare settings and presented findings specific to workers in the hospital setting, the article was included. Similarly, if a study examined various types of workplace violence (e.g., worker-on-worker violence/ Type III), but presented analyses stratified by Type II violence, the article was included. References were excluded that were tagged as anonymous, letters or editorials.

Search terms: The search terms used in OVID Medline included: (1) violence, violent assault, assault; (2) occupational health, occupational exposure, occupational accidents, workers' compensation, safety management, safety; (3) hospital personnel, health personnel, nurses, physicians, doctors, housekeepers, dieticians, pharmacists, orderlies, technicians, therapists, emergency department, professional-patient relations, nurse-patient relations, physician patient relations; (4) hospitals, general; hospitals, group practice; hospitals, packaged; hospitals private; hospitals, teaching; hospitals, rural; hospitals, satellite; hospitals, urban; hospital units; hospital departments; (5) English. Initially, we conducted a review of article titles and abstracts and excluded those that did not meet the 5 criteria stated above.

For articles that were not discernible from the title and abstract, as well as articles that met the criteria, we conducted a full-text article review. We chose to include studies that reported a mix of Type II and Type III (worker-on-worker) violence where the prevalence of Type III violence was small (~ 10%) relative to Type II. During the full-text review we chose to further exclude studies that met our study criteria, but had fewer than 150 observations. Upon review of these studies, we observed that a large proportion did not provide details pertaining to worker or workplace characteristics associated with Type II violence, and for those that did the cell sizes were small.

All procedures were approved by the Institutional Review Boards at The University of Texas Health Science Center at Houston and Duke University Medical Center.

## 3. Results

### 3.1. Review of existing worker injury reports from the DHSSS

The study cohort was made up of 12,804 workers who contributed a total of 27,681 full-time equivalents over the 6-year study period. Most of the workers were female (82%). White and Black/African American were the more common racial groups represented (68% and 24%, respectively). By occupation, inpatient nurses contributed the most FTEs (51%), followed by clinical technical/professional workers (36%), nurses' aides (10%) and public safety workers (3%).

A total of 484 work-related Type II violent events were identified from 2004 through 2009 in at least one of the three data systems (Table 1). All of these events were patient-perpetrated (i.e., no visitor-perpetrated events were reported). The 484 events were reported by 458 workers; 25 workers reported more than 1 event.

The Safety Reporting System (SRS), Workers' Compensation, and OSHA log, all incorporated within the DHSSS, have different case definitions and reporting requirements. Among the three reporting systems, the highest proportion of the events was captured by the WC system (82%, n=399/484). Only 40 events (8%) were reported in more than one data system. Notably, for the years 2004 through 2006, only 6% of the reported events were identified in the SRS or the OSHA log, compared to 27% in 2007 through 2009. No events were captured by all three systems during the study period. Of the 422 events identified through WC claims and/or OSHA logs, 2.4% (n=10) had associated lost work days. These results point to the importance of integrating data across multiple reporting systems using a surveillance system such as the DHSSS in order to capture workplace violence events more thoroughly.

In this study cohort, an overall violent event rate of 1.75 per 100 FTEs (95% CI 1.60-1.91) was observed. Rates of reported violence were higher among males compared to females (RR: 1.27, 95% CI 1.03-1.56) while rates were 50% higher among Black workers compared to Whites (RR: 1.47, 95% CI 1.21-1.79) (Table 1). Rates decreased with increasing age and tenure. By occupational group, higher rates were observed among public safety workers (5.14 events per 100 FTEs) and nursing aides

Table 1
Incidence rates, crude rate ratios and 95% confidence intervals of reported type II violence events over time and by worker demographics, 2004 – 2009.

| | FTEs | Number of events | Rate per 100 FTEs | Rate Ratio | 95% CI LB | 95% CI UB |
|---|---|---|---|---|---|---|
| Year | | | | | | |
| 2004 | 4188 | 64 | 1.53 | 1.00 | | |
| 2005 | 4326 | 59 | 1.36 | 0.89 | 0.63 | 1.27 |
| 2006 | 4517 | 88 | 1.95 | 1.28 | 0.92 | 1.76 |
| 2007 | 4669 | 81 | 1.73 | 1.14 | 0.82 | 1.58 |
| 2008 | 4871 | 72 | 1.48 | 0.97 | 0.69 | 1.35 |
| 2009 | 5110 | 120 | 2.35 | 1.54 | 1.13 | 2.08 |
| Gender | | | | | | |
| Female | 22120 | 367 | 1.66 | 1.00 | | |
| Male | 5561 | 117 | 2.10 | 1.27 | 1.03 | 1.56 |
| Age (in years) | | | | | | |
| b30 | 6005 | 127 | 2.11 | 1.00 | | |
| 30 to b40 | 7561 | 136 | 1.80 | 0.85 | 0.67 | 1.08 |
| 40 to b50 | 7434 | 117 | 1.57 | 0.74 | 0.58 | 0.96 |
| 50 to b60 | 5499 | 88 | 1.60 | 0.76 | 0.58 | 0.99 |
| 60+ | 1182 | 16 | 1.35 | 0.64 | 0.38 | 1.08 |
| Tenure (in years) | | | | | | |
| b5 | 14982 | 344 | 2.30 | 1.00 | | |
| 5 to b10 | 5390 | 74 | 1.37 | 0.60 | 0.47 | 0.77 |
| 10 to b15 | 2410 | 24 | 1.00 | 0.43 | 0.29 | 0.66 |
| 15+ | 4899 | 42 | 0.86 | 0.37 | 0.27 | 0.51 |
| Race | | | | | | |
| White | 18723 | 290 | 1.55 | 1.00 | | |
| Black | 6669 | 152 | 2.28 | 1.47 | 1.21 | 1.79 |
| Other* | 2277 | 41 | 1.80 | 1.16 | 0.84 | 1.61 |

* Includes Hispanic, American Indian or Alaskan Native, Native Hawaiian or other Pacific Islander, Asian.

Table 2
Incidence rates, crude rate ratios and 95% confidence intervals of reported type II violence events by worker characteristics, 2004 – 2009.

| | FTEs | Number of events | Rate per 100 FTEs | 95% CI LB | 95% CI UB |
|---|---|---|---|---|---|
| Work location | | | | | |
| University | 788 | 38 | 4.82 | 3.51 | 6.63 |
| Medical Center | 18616 | 294 | 1.58 | 1.41 | 1.77 |
| Community Hospital 1 | 4871 | 100 | 2.05 | 1.69 | 2.50 |
| Community Hospital 2 | 3407 | 52 | 1.53 | 1.16 | 2.00 |
| Job title | | | | | |
| Public Safety | 953 | 49 | 5.14 | 3.89 | 6.80 |
| Nursing Aides | 2779 | 130 | 4.68 | 3.94 | 5.56 |
| Nursing Inpatient | 14119 | 253 | 1.79 | 1.58 | 2.03 |
| Respiratory Care | 828 | 14 | 1.69 | 1.00 | 2.85 |
| Physical/Occup Therapy | 830 | 13 | 1.57 | 0.91 | 2.70 |
| Radiology & Imaging | 2130 | 15 | 0.70 | 0.42 | 1.17 |
| Other Clinical Tech/Prof | 6041 | 10 | 0.17 | 0.09 | 0.31 |
| Work unit* | | | | | |
| Psychiatry | 269 | 21 | 7.81 | 5.10 | 11.99 |
| Police/Security | 887 | 49 | 5.52 | 4.17 | 7.31 |
| Float pool | 1249 | 56 | 4.48 | 3.45 | 5.82 |
| Emergency | 1731 | 76 | 4.39 | 3.51 | 5.50 |
| Neurology | 846 | 29 | 3.43 | 2.38 | 4.93 |
| Other adult inpatient | 5010 | 122 | 2.43 | 2.04 | 2.91 |
| ICU/CCU | 1903 | 41 | 2.15 | 1.59 | 2.93 |
| Respiratory care | 853 | 15 | 1.76 | 1.06 | 2.92 |
| PT/OT/Rehab | 1042 | 12 | 1.15 | 0.65 | 2.03 |

* Data not shown for units with rates b 1 per 100 FTE: anesthesia, surgery, radiology, pediatrics, women's, social work, pharmacy, parking/transportation.

(4.68 events per 100 FTEs) compared to inpatient nurses (1.79 events per 100 FTEs) and clinical technical/professional workers (Table 2). Work locations with higher rates of violence events included psychiatry, police/transportation, emergency department, float pool, neurology, ICU/CCU and adult medicine.

Patient behaviors were described in 92.2% of the event narratives. More common patient actions toward staff members were hitting (27.1%), scratching (24.8%), grabbing (14.1%), kicking (13.2%), and biting (12.4%). Staff actions toward the patient were described in 5.8% of the event narratives and included restraining (4.6%) or struggling with (1.2%) the patient. Finally, patient characteristics were described in 24.0% of the event narratives. Patients were described as combative (e.g., "combative," "aggressive," "violent," "hostile") in 17.2% of the events. Confused/disoriented was used to describe patients in 3.3% of the events.

### 3.2. Review of the literature

Our initial search resulted in 2,036 articles, which yielded 17 studies (18 research papers) for the final review. As outlined in Fig. 1, articles were excluded because they were not related to violence (n=562), not peer reviewed (n=578), they pertained to violence not related to employment (e.g., domestic violence) (n=498), they were workplace violence studies conducted in settings other than the acute care hospital (n=213), they did not present data stratified by Type II violence in the hospital setting (n=109), and for those studies that did, 39 had sample sizes less than 150 observations. Nineteen articles could not be accessed.

Included Studies: Eighteen research articles addressing 17 studies met the criteria for this review (Table 3), including 4 studies (El-Gilany, El-Wehady, & Amr, 2010; Farrell, Bobrowski, & Bobrowski, 2006;

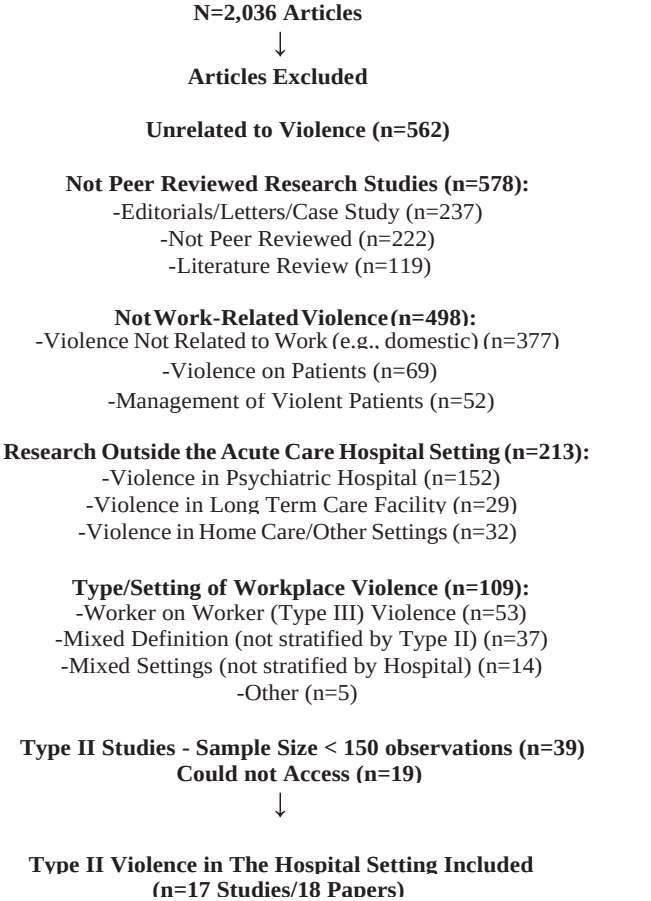


Fig. 1. Systematic Review for Identifying Hospital-Based Type II Violence Studies: January 2000- February 2010.

Table 3
Peer Reviewed Manuscripts Included in the Literature Review (n= 17 Studies).

| | Author(s) Year, Country | Study Design | Sample Size | Hospital Dept. | Work Group(s) | Data Collection Methods | Response Rate | Type II Violence Definition | Prevalence Period | Violence Prevalence | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | Verbal Abuse | Threat of Assault | Physical Assault |
| 1 | Ayranci et al., 2006, Turkey | CS | 1,209 | All | All | WS | 88% | V,T,P,S | 12 mos. | 36% | | 14% |
| 2 | Chapman et al., 2009, Australia | CS/QT | 113/20 | All | RN | MS/FG | 34%/31% | NS | 12 mos. | | | |
| 3 | El-Gilany et al., 2010, Saudi Arabia | CS | 1,091 | All | All | WS | 96% | V,P | 12 mos. | 52% | 37% | 11% |
| 4 | Farrell et al., 2006, Australia | CS | 2,407 | All | NM, RN | MS | 38% | V,P | 4 weeks | 74% | | 50% |
| 5 | Fernandes et al., 2002, Canada | S-CS | 217 | ED | All | WS | 60%-72% | V,P | 2 weeks | 50% | | 19% |
| 6 | Findorff et al., 2004, 2005, U.S. | CS | 1,751 | All | All | MS | 42% | V,P | 12 mos. | 13% | | 7% |
| 7 | Gacki-Smith et al., 2009, U.S. | CS | 2,456 | ED | NM, RN | WB | 11% | V,T | 36 mos. | 70% | | 50% |
| 8 | Gates et al., 2006, U.S. | CS | 242 | ED | All | WS | 40% | V,T,P,S | 6 mos. | ~ 84% | ~ 66% | 48% |
| 9 | Hesketh et al., 2003, Canada | CS | 9,174 | All | RN | MS | 53%/48% | V,T,P,S | Previous 5 shifts | | | |
| 10 | James et al., 2006, U.K. | RR | 218 | ED | All | RR | NA | V,T,P | 12 mos. | 90% | 52% | 32% |
| 11 | Kowalenko et al., 2005,U.S. | CS | 171 | ED | MD | MS | 71% | V,T,P | 12 mos. | 75% | 12% | 28% |
| 12 | Landau & Bendalak, 2007, Israel | CS | 2,356 | ED | All | WS | 79% | V,T,P | 12 mos. | | | |
| 13 | Luck et al., 2007, Australia | QT | 20 | ED | RN | DO/FG | 37% | NS | NA | | | |
| 14 | Peek-Asa, Cubbin, & Hubbell, 2002,U.S. | S-CS | 198 EDs | ED | All | MS | NS/53% | V,T,P | 10 years | | | |
| 15 | Rodríguez-Acosta et al., 2010, U.S. | RC | 13,290 FTEs | All | RN, NA | WC | NA | P | 8 years | | | |
| 16 | Salerno, Dimitri, & Talamanca, 2009, Italy | RR | 2,196 | Psych | RN, MD | RR | NR | V,P | 1.7/100 FTE 4 years | 7% | | 12% |
| 17 | Winstanley & Whittington, 2004, U.K. | CS | 375 | All | All | WS | 33% | V,T,P | 12 mos. | 68% | ~ 23% | 27% |

+ Definition of violence included both Type II and III, but majority of verbal and physical violence events were Type II events
++Definition of violence included both Type II and III, but majority of physical violence events were Type II events
Study Design: CS = cross sectional; QT = qualitative; S-CS = serial cross sectional; RC = retrospective cohort; RR retrospective record review; PC = prospective cohort
Violence Definition: V = verbal abuse, T = threat of violence, P = physical assault, S = sexual assault/harassment
NA = not applicable; NS = not specified FTE = full-time equivalent
Data Collection: WS = survey distributed at work; FG = focus group; MS = mail survey; RR = record review; WC = workers' compensation; WB = web survey; DO = direct observation
Department: All = all hospital units; ED = emergency dept.
Work Groups: RN = nurse; NM = nurse manager; NA = nurses' aide/patient care attendant; MD = physician;
FTEs = Full Time Equivalents.

Fernandes et al., 2002; Findorff, McGovern, Wall, & Gerberich, 2005; Findorff, McGovern, Wall, Gerberich, & Alexander, 2004) that examined both Type II and Type III violence where the prevalence of violence by coworkers was small (~10%) relative to patients/visitors. These studies represented workers in the United States, Saudi Arabia, Turkey, Australia, Israel and England. The majority of the studies (n= 12) were cross-sectional by design with data collected through worksite or postal mail surveys. Most (n=8) studies asked workers to recall violent events in the previous 12-months, and the response rates ranged from 11% to 88% with half (n=6) reporting rates greater than 50%. Eight studies examined the prevalence of violence in various hospital departments, while 8 focused specifically on the Emergency Departments (ED), and 1 on inpatient psychiatry. More than half (n= 9) of the studies examined violence in several workgroups, while several (n=7) examined nursing staff or physicians (n=2) only.

Study Definitions: Consistency in study definitions of Type II violence was noted, with several studies (n=9) including elements of: (1) verbal assault or abuse; (2) verbal and/or physical threat; and (3) physical assault, with a few studies (n=3) that also included (4) sexual assault/harassment (Table 3). Analyses, however, often did not reflect these distinct definitions, with only 5 studies reporting data stratified by these sub-types of violence, and fewer (n=2) that considered these distinctions throughout their analyses. The prevalence of verbal abuse ranged from 22% to 90%, threat of violence from 12% to 64%, and physical assault from 2% to 32%. Consistently, studies reported a higher prevalence of verbal assault followed by threats and physical abuse, respectively. Three studies (Gates, Ross, & McQueen, 2006; Hesketh et al., 2003; Landau & Bendalak, 2007) reported this same pattern when examining the frequency of these forms of violence stratified by perpetrator (patient and visitor) (data not shown).

Worker Characteristics: Five studies examined the frequency of violence experienced by a mix of workgroups in various hospital departments. High proportions of events were reported by nurses, nurses' aides, and physicians, followed by other workgroups including paramedics, security guards, technicians, and triage/front desk workers (Table 4). Rodríguez-Acosta et al. (2010) and Findorff et al. (2004) identified inpatient psychiatry as having significantly higher rates of injury from physical assault relative to other departments. Intensive care, emergency, inpatient medical/surgical, neurology, orthopedics, physical/occupational therapy and outpatient clinics were other departments identified. Female workers were more likely to report violent events in four studies, while inconsistencies in years of age and years of job tenure were reported across studies.

Perpetrator characteristics: Nine studies detailed aspects of perpetrator characteristics (Table 5), with three of five studies indicating that the perpetrator was more likely to be a patient than visitor, while conversely two studies conducted in Turkey and Saudi Arabia reported that the perpetrator was more likely to be a visitor. Studies specific to

emergency departments consistently reported that perpetrators with mental illness (8%-88%), dementia (~57%) and/or suicidal behavior (21%) were factors that contributed to the violent events, as well as perpetrators who were under the influence of alcohol (45% to 94%) and/or illicit drugs (57% to 94%). Only a few studies asked about warning signs or activities preceding the event. Ayranci, Yenilmez, Balci, and Kaptanoglu (2006) reported that 13% of the events occurred in the context of telling the perpetrator bad news, while only a few (2.5%) occurred while examining or treating the patient. However, 47% of participants in this same study indicated they had a feeling in advance that something was about to happen. Two qualitative studies detailed specific behaviors displayed by patients/visitors prior to a violent event (Chapman, Perry, Styles, & Combs, 2009; Luck, Jackson, & Usher, 2007). Through the use of semi-structured focus groups involving ED staff, Luck et al. (2007) reported specific behaviors (using the acronym "STAMP") including Staring and eye contact, Tone and volume of voice, Anxiety, Mumbling and Pacing. Chapman et al. (2009) extended this work using similar methods and reported nine components of predicting violence and aggression including the five STAMP in addition to (EDAR) Emotions (fear, frustration), Disease process (confusion, intoxication, mental illness), Assertive/non-assertive (e.g., confrontational or not assertive), and Resources/organization pertaining to (e.g., long wait times). Repeat hospital admissions by patients in the ED and inpatient psychiatric unit were also identified as a risk factor, with 14 patients accounting for 45 (21%) of 218 violent incidents in the ED in a 12-month time period (James, Madeley, & Dove, 2006).

Work Environment: Environmental conditions present at the time of the violent events were identified through these studies which are listed in Table 5. Long wait times for procedures or care was considered a contributing factor to the event among participants in several studies. However, only one study by Ayranci et al. (2006) examined the actual length of time as a predictor and observed no significant differences (p=0.38) when comparing wait times. James et al. (2006) observed a reduction in risk for physical violence in the ED (OR 0.18; 95% CI: 0.04, 0.85) when long wait times were examined as a predictor of physical violence when modeled with perpetrator factors such as being a patient (vs. visitor), being under the influence of drugs/alcohol and expressing suicidal ideation. Conflict or misunderstanding between the health care worker and the patient, as well as unmet patient demands were identified. Short staffing and lack of security guards present were reported as contributing factors, while Gates et al. (2006) also reported a lack of assistance by security guards who were present. While working alone was identified in several studies as a contributing factor, a specific work shift was not.

Consequences: Studies reporting workers' emotional responses to workplace violence suggest that it is not uncommon for them to experience anger and irritation (56% to 70%), as well as fear of being at work (17% to 44%) (Table 6). A large proportion (89%) of physicians surveyed in Minnesota reported that they were occasionally fearful of workplace violence, while 11% were frequently or constantly fearful (Kowalenko, Walters, Khare, Compton, & Michigan College of Emergency Physicians Workplace Violence Task Force, 2005). In this same study, 44% of physicians indicated feeling "less secure at work" because of violence in the ED, with a large proportion (42%) indicating that they carried some type of weapon to protect themselves (e.g., mace, knife, gun). Studies reported that workers felt humiliation and self-blame (42% to 26%) after an event, which was further highlighted by Gacki-Smith et al. (2009) who indicated that ED nurses (20%) considered the reporting of physical assault a sign of weakness. In one study, almost half (41%) of the hospital workers who experienced violence in the previous year indicated that they coped by "pretending it didn't happen" (El-Gilany et al., 2010).

Table 4
Frequency of Workplace Violence Stratified by Occupational Characteristics in the Hospital Setting.

| | Ayranci N= 598 Violent Events | El-Gilany N= 302 Violent Events | Findorff N= 127 Physical Assaults | Rodiguez-Acosta N= 220 Physical Assaults | Winstanley N= 375 Physical Assaults |
|---|---|---|---|---|---|
| Work Group | | | | | |
| Nurse/ Midwife | 34% | 35% | 17.8/100^ | 2.3/100* | 66% |
| Nurses' Aide/PCA | | | 8.9/100^ | 1.5/100* | 13% |
| Physician | 12% | 29% | | | 19% |
| Paramedic | | | 25/100^ | | |
| Pharmacist | | 9% | | | |
| Security Guard | | | 50/100^ | | |
| Ancillary | 15% | | | | |
| Physical Therapist | | | | | 12% |
| Technician | | 31% | | | |
| Counselors/ Social Worker | | | 17/100^ | | |
| Driver/ Servant | | 18% | | | |
| First meeting | 4% | | | | |
| Other | | | | | |
| Gender | | | | | |
| Men | 40% | 63% | 18% | 1.6/100* | |
| Women | 60% | 37% | 82% | 2.3/100* | |
| Race | | | | | |
| White | | | 92% | 1.6/100* | |
| Nonwhite | | | 8% | 1.7/100* | |
| NR | | | 2% | | |
| Age (years) | | | | | |
| b=29 | 46% | 25% | | 1.7/100* | |
| 30-39 | 39% | 74% | | 1.7/100* | |
| 40-49 | 13% | | | 1.5/100* | |
| >49 | | | | 1.6/100* | |
| Job Tenure (years) | | | | | |
| b5 | 60% | 38% | | 1.9/100* | |
| 5-10 | 25% | 20% | | 1.7/100* | |
| >10 | 15% | 41% | | 1.3/100* | |
| Work Department | | | | | |
| Emergency (ED) | 19% | 19% | 17/100^ | 1.3/100* | 4% |
| Outpatient Clinic | 25% | 3% | | | |
| Medical Surgical | 15% | | 8/100^ | | 52% |
| Psychiatry | | | 28/100^ | 12.7/100* | |
| Pharmacy | | 10% | | | |
| ICU | | | 36/100^ | 1.6/100* | |
| PT/OT/ Rehab | | | 7/100^ | 3.6/100* | 11% |
| Neurology | | | | 4.4/100* | |
| Ortho | | | | 2.0/100* | |
| Float | | | | 1.2/100* | |
| Other | 4% | | | | |

^per 100 workers.
* per 100 FTEs-full time equivalents.

## 4. Discussion

The purpose of these analyses was to assess the utility of existing hospital data reported by workers that pertained to Type II violence with regard to identifying risk factors and examining rates of injury over time. In addition, we sought to identify risk factors for Type II violence that have been reported in the literature over a 10-year period. Findings from these analyses will be used as part of a larger study aimed at improving internal hospital reporting systems for capturing of hospital violent events.

Analyses of hospital data indicated that existing systems primarily captured events that involved physical assault, while no events that involved verbal abuse and/or threat of assault were captured. Given that these injuries were considered severe enough to be captured through workers' compensation, and the high prevalence of verbal abuse and

Table 5
Perpetrator and Environmental Characteristics for Reported Type II Violent Events.

| | Ayranci n= 598 violent events | El-Gilany N= 972 perpetrators/ 913 events | Fernandes N= 114 physical assaults | Gacki-Smith N= 811 Workers with > 20 physical assaults | Gates n= 115 workers who experienced 329 physical assaults | James+ n= 218 violent events | Kowalenko N= 1,908 violent events | Peek Asa+ N= 198 EDs | Salerno N= 688 violent events |
|---|---|---|---|---|---|---|---|---|---|
| Setting | Hospital | Hospital | ED | ED | ED | ED | ED | ED | Psychiatry |
| Demographics | | | | | | | | | |
| Patient | 31% | 23% | | | 51% | 88% | 72% | | 100% |
| Visitor | 58% | 68% | | | 49% | 12% | 28% | | |
| Males | 77% | | 54% | | | 65% | | | |
| Mental Health | | | | | | | | | |
| Dementia | | | | 59% | 56% | | | | NS |
| Mentally Ill | 8% | 5% | 29% | 92% | 63% | 14% | | | |
| Suicidal/Self-destructive | | | | | | | 21% | | |
| Involuntary Admission | | | | | | | | | 48% |
| Restraint Treatment | | | | 68% | | | | | 19% |
| Did not know | 24% | | | | | | | | |
| Lifestyle/Behavior | | | | | | | | | |
| Intoxicated - Alcohol | 10% | | 47% | 95% | 80% | 52% | 45% | 76% | |
| Illicit drug use | | | 45% | 94% | 76% | 5% | | 57% | |
| Drug seeking | | | | 94% | | | | | |
| Gang Related | | | | | 10% | | | 42%* | |
| History of Violence | | | 31% | | | | | | |
| Repeat Patient | | | 30% | | | 6% | | | 94% |
| In pain/reaction to treatment | | 57% | | | | | | | |
| Environmental Characteristics | | | | | | | | | |
| Area open to public | | | | | 37% | | | | |
| Wait Time | 45% | | | 86% | 69% | 12% | | | |
| Payment/Billing Issues | 21% | | | | | | | | |
| Conflict between health care professional and patient | | 37% | | 70% | | | | | |
| Unmet demands | | 72% | | | | | | | |
| Over crowding | | 66% | | 91% | | | | | |
| Lack of security guard/ security guard not helpful | | 39% | | | 36%/21% | | | | |
| Short staffed | | 9% | | 66% | 32% | | | | |
| Limited visitor policy | | | | 70% | | | | | |
| Lack of policy/procedure for handling violence | | 67% | | | 17% | | | | |
| No check point for weapons | | | | | 22% | | | | |
| Working alone | 48% | 38% | | | 15% | | | | 26% (MD)/ 4% (RN) |
| Worked Day Shift | 54% | 19% | 47% | | | | | | |
| Worked Evening Shift | 23% | 50% | 14% | | | | | | |
| Worked Night Shift | 22% | 31% | 31% | | 28% | | | | |
| Worked Rotating Shift | | | 9% | | | | | | |
| Door Closed | | 46% | | | | | | | |

ED = Emergency Department.
+Post Intervention data presented.
* combined estimate of drugs and gang.

threats reported in prior studies, we assume this is a conservative estimate of Type II workplace violence occurring among staff these institutions. In similar analyses, Bensley et al. (1997) observed that 85 cases of workplace violence reported through workers' compensation among psychiatric hospital nurses were considerably less than the 197 cases capture from these same workers during the same time period through survey methods. Verbal threats, which are considered "pre-events" (Runyan, 2001) or near misses, could be informative for the development of prevention strategies but were not captured. We were able to calculate rates of injury across workgroups, work departments, and over several years. However, these data were limited in details about the circumstances of the events, warning signs, whether the patient was in pain, if they were impaired, if situational factors triggered or escalated the event, and the consequences experienced by workers beyond a physical injury or lost work-time. There was also a lack of information on methods, if any, that staff used to handle these situations.

Through the review of 17 studies, we captured information pertaining to workplace, worker and perpetrator characteristics associ- ated with Type II violence, as well as the consequences to workers resulting from these events. While these data were informative, they were limited with regard to assisting us with identifying established risk factors to include in our new system. The majority of included stud- ies were cross-sectional that reported period prevalence of violence. Only two studies (Findorff et al., 2004, 2005; Rodríguez-Acosta et al., 2010) examined rates of violence; only one examined rates over time. With a lack of rate-based measures, the determination of risk from asso- ciated factors that were reported was not feasible. Moreover, compari- son of high risk workgroups and work departments across studies was

Table 6
Reported Consequences Among Workers Exposed to Type II Violence.

| | Ayranci 1,209 | El-Gilany N= 302 | Fernandes N= 217 | Findorf N= 127 | Kowalenko N= 171 |
|---|---|---|---|---|---|
| Workgroup | All | All | All | All | MD |
| Setting | Hospital | Hospital | ED | All | ED |
| Job Satisfaction | 27% | 70% | | | |
| Changed place of work | | 2% | 2% | | 16% |
| Considered leaving profession | | | | | 19% |
| Physical injury | 18% | | | | |
| Mental/physical treatment | 12% | | | 2%/13% | 1% |
| Lost time from work | | 5% | | | |
| Anger/Irritation | 56% | 70% | 18% | 49%/16% | |
| Fear/ Afraid at work afterwards | | 38% | 17% | 31% | 11%/44% |
| Blamed Self/ Humiliation | 26% | 4% | 2% | 11% | |
| Careful/Super Alert | | 46% | | | |
| Carried weapon to protect self | 25% | | | | 42%+ |
| Pretend it didn't happen | | 41% | | | |

+Weapons included gun, knife, mace, club.

limited. Examination of combined associations of multiple factors and the risk of Type II violence was missing. For example, several studies reported descriptive details about perpetrator and work environment factors for ED events including being male, having a mental illness, being intoxicated and long wait times, but only one (James et al., 2006) examined the risk of violence relative to these factors through multivariate modeling. The contradictory findings by James et al. (2006) in which they indicated that being a female patient increased the risk, while longer wait times reduced the risk of violence, illustrates the need for more rigorous analyses for purposes of developing informed prevention strategies. We found the qualitative studies that detailed perpetrator characteristics to be extremely informative, highlighting the importance of utilizing a mixed methods approach.

Due to the large number of studies ascertained in our initial query (January 1990 to February 2010) we chose to limit the time frame to studies published after 1999. For purposes of developing targeted workplace violence prevention strategies, Howard (1996) proposed defined workplace violence "types" (I through IV) due to their differences in the perpetrator's profile and motives, as well as differences in the characteristic of the workplaces and workers affected. Unfortunately, a large number of studies were not included in the review because violence types were mixed and we were not able to determine details specific to patient/visitor perpetrated violence.

### 4.1. Preliminary recommendations

Based on findings from the analysis of our existing administrative data and systematic review of the literature, we have outlined preliminary recommendations of broad categories to be included in a hospital violence surveillance system. These elements include: worker demographics (e.g., job title, work department); Type II violence sub-types (e.g., verbal abuse, threat of assault, physical assault); perpetrator characteristics (e.g., patient, visitor, gender); event setting (e.g., in person, phone, email); hospital location (e.g., emergency department, intensive care unit); physical location (e.g., hallway, exam room); hospital factors (e.g., emergency/acute situation, long wait time for care, short staffing, payment issue); perpetrator factors (e.g., receiving bad news, mental illness, drug seeking, medication withdrawal); warning signs (e.g., perpetrator's behavior of staring, anxiety, mumbling); type of weapon (e.g., knife, gun, body fluid); involvement of others (e.g., coworkers, security); interventions used (e.g., called security, restraint, verbal de-escalation); immediate consequences of the event for the worker (e.g., injured, worried about personal safety); workers' text description of the event; workers' text description of recommendations for future prevention efforts.

Some studies included in this review indicated that the under-reporting of Type II violent events is a significant problem, which suggests that a system aimed at capturing these events would need to be easily accessible to the worker (e.g., online intranet reporting system) in a central location, with minimal time requirement on the part of the worker to report. Capturing these initial data could foster more thorough violent event investigation by occupational safety and health professionals beyond what is typically captured in a first-report of injury report. In addition, these data could be supplemented with discussions with workers involved in the event to gain a better understanding of event circumstances and consequences. Ideally, data from this system would be linked to worker demographic and administrative data for purposes of examining injury rates within and between workgroups over time, as illustrated in the DHSSS analyses. This linkage would also enable hospitals to examine changes in rates relative to their violence prevention efforts.

## 5. Summary

The purpose of examining our existing hospital violence reporting systems, and reviewing 10 years of previously published work, was to inform the development of an improved hospital violence reporting system. Our conclusions and recommendations are focused specifically on the reporting and capturing of circumstances surrounding violent events rather than broader contextual issues within a hospital or health care system. The existing literature and administrative data focused specifically on violent episodes, but does not address more macro-level factors that may contribute to workplace violence such as inadequate staffing, or pressure from management for workers to place high patient satisfaction ratings before their own safety, or lack of health insurance or poor access to care among patients. In addition, our recommendations do not address issues that influence reporting that were revealed in our review, including workers blaming themselves for violent events or perceiving reporting as a sign of weakness.

A large proportion of hospital workers in some of the studies we reviewed reported feelings of anger and irritation, as well as fear upon returning to work after being physically assaulted or verbally abused. In addition, some indicated that they had taken protective measures by arming themselves with weapons. These findings clearly support the need for prevention strategies aimed at protecting these workers. Our analyses of the DHSSS data, and those of others, document the need for more detailed surveillance methods that capture incident cases of workplace violence including circumstances surrounding these events. Such improvements will foster the development of targeted workplace violence prevention policies and strategies at the patient care unit and hospital level.

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Lisa Pompeii, PhD, is an occupational injury epidemiologist and an Associate Professor in the Division of Epidemiology, Human Genetics and Environmental Sciences at the University of Texas Health Science Center at Houston. Dr. Pompeii's research interests include musculoskeletal and violence-related injuries incurred by healthcare workers. She is currently the Principal Investigator for the NIOSH funded Hospital Violence Surveillance Study with which this manuscript is based.

John M. Dement, PhD, CIH, is a Professor in the Division of Occupational and Environmental Medicine, Duke University Medical Center. Prior to joining the Duke University faculty in 1993, Dr. Dement served in the U.S. Public Health Service for 22 years where he was employed in various research and management positions by the National Institute for Occupational Safety and Health (NIOSH) and the National Institute of Environmental Health Sciences (NIEHS). His research interests include occupational lung diseases, occupational cancers, exposure assessment for occupational epidemiology, workplace violence, and development surveillance systems for occupational diseases and injuries.

Ashley Schoenfisch, MSPH is a research analyst in the Division of Occupational and Environmental Medicine at Duke University Medical Center. Ms. Schoenfisch has research interests in occupational safety and health, including the evaluation of interventions to prevent work-related injuries, the use of both quantitative and qualitative research methods, and the use of surveillance data to address work-related public health questions. Her research experience primarily includes studies of workers in healthcare and construction sectors.

Amy M. Lavery, MPH is currently a graduate student in the doctoral epidemiology program at the University of Texas, School of Public Health. Her research interests in occupational and environmental epidemiology, specifically as they relate to indoor air quality.

Megan Souder, MPH conducted a practicum with the Hospital Violence Study as part of her graduate school program. Her research interests include environmental and occupational epidemiology, disease outbreak investigation and clinical trials.

Claudia DiSabatino Smith, PhD, RN, NE-BC earned her doctoral degree from The University of Texas Health Science Center at Houston. Dr. Smith currently serves as the Director of Nursing Research at St. Luke's Episcopal Hospital in Houston Texas where she is a co-investigator on several studies. Her research interests include nursing clinical credibility and the nursing workforce.

Hester Lipscomb, PhD is an occupational injury epidemiologist. She is a Professor in the Division of Occupational and Environmental Medicine at Duke University Medical Center, Durham, NC. Her research focus includes injuries incurred by workers in healthcare, construction and poultry.

# Physical Assault, Physical Threat, and Verbal Abuse Perpetrated Against Hospital Workers by Patients or Visitors in Six U.S. Hospitals

Lisa A. Pompeii, PhD,[1] Ashley L. Schoenfisch, PhD,[2] Hester J. Lipscomb, PhD,[2] John M. Dement, PhD,[2] Claudia D. Smith, PhD, RN, NE-BC,[3] and Mudita Upadhyaya, MPH[4]

Background *An elevated risk of patient/visitor perpetrated violence (type II) against hospital nurses and physicians have been reported, while little is known about type II violence among other hospital workers, and circumstances surrounding these events.*
Methods *Hospital workers (n ¼1,000) in different geographic areas were invited to participate in an anonymous survey.*
Results *Twelve-month prevalence of type II violence was 39%; 2,098 of 5,385 workers experienced 1,180 physical assaults, 2,260 physical threats, and 5,576 incidents of verbal abuse. Direct care providers were at significant risk, as well as some workers that do not provide direct care. Perpetrator circumstances attributed to violent events included altered mental status, behavioral issues, pain/medication withdrawal, dissatisfaction with care. Fear for safety was common among worker victims (38%). Only 19% of events were reported into official reporting systems.*
Conclusions *This pervasive occupational safety issue is of great concern and likely extends to patients for whom these workers care for.* Am. J. Ind. Med. © 2015 Wiley Periodicals, Inc.

*KEY WORDS: workplace violence; hospital workers; type II violence*

## BACKGROUND

Although non-fatal violence perpetrated against health care workers is not a new public health issue, it has, with good reason, received significant attention in recent years. Bureau of Labor Statistics 2010 estimates [BLS, 2010] indicate that 3,350 non-fatal workplace violence-related injuries that required at least one day away from work occurred among workers in general medical and surgical hospitals, with a rate of 7.7 injuries per 10,000 workers. This accounted for 4.8% of all injuries and illnesses requiring days away from work in this occupational setting, which is an increase from 3.7% reported in 2009 [BLS, 2009]. While these estimates serve to highlight the problem, they lack details about the circumstances surrounding these events. Given that these estimates include only cases that involved injury with lost workdays, they do not represent the full burden of workplace violence. Furthermore, there is growing recognition that workplace injuries are not accurately reported to BLS, and that violent events are under-reported by workplace victims [Wuellner and Bonuato, 2014].

To guide prevention efforts, Howard [1996] and Peek-Asa et al. [1997] defined four types of workplace violence that consider the perpetrator's characteristics and motives for

[1]Division of Epidemiology, Human Genetics, Environmental Sciences, School of Public Health, The University of Texas Medical Center, Houston, Texas
[2]Department of Occupational Medicine, Duke University Medical Center, Durham, North Carolina
[3]St. Luke's Medical Center, Houston, Texas
[4]Division of Management, Policy and Community Health, School of Public Health, The University of Texas Medical Center, Houston, Texas
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Correspondence to: Lisa A. Pompeii, PhD, Division of Epidemiology, Human Genetics, Environmental Sciences, School of Public Health, The University of Texas Medical Center, Houston, TX 77030. E-mail: lisa.pompeii@uth.tmc.edu

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violence. Type II violence, in which violence is perpetrated by a customer receiving services from an establishment, such as a patient or visitor; is common in hospitals. Specific hospital workgroups such as nurses [Hesketh et al., 2003; Gacki-Smith et al., 2009; Rodr'ıguez-Acosta et al., 2010; Pompeii et al., 2014] and physicians [Kowalenko et al., 2005; Salerno et al., 2009] are at high risk for type II violence, as are those employed in hospital emergency departments [Kowalenko et al., 2005; Gates et al., 2006; James et al., 2006; Gacki-Smith et al., 2009] and in-patient psychiatric units [Salerno et al., 2009]. While these workgroups are typically highlighted, few studies have examined type II violence across hospital workgroups [Pompeii et al., 2013], including those outside of nursing and medicine who also provide patient care, and/or services to hospital patients and visitors.

Physical assault, physical threat of assault, and verbal abuse are sub-types of type II violence that have been consistently used to define the nature of violent events perpetrated by patients and visitors [Pompeii et al., 2013]. Occupational and hospital department specific studies have reported a lower prevalence of physical assaults relative to verbal abuse, but not at an insignificant frequency. For example, 12-month prevalence estimates of 75–90% for verbal abuse have been reported for emergency room workers, with a prevalence of physical assault ranging from 28% to 32% [Kowalenko et al., 2005; James et al., 2006]. To date, studies have not examined these violence sub-types across hospital worker and workplace characteristics, or circumstances surrounding the events which could be relevant to informing workplace violence prevention and mitigation strategies.

The purpose of this study was to examine the 12-month prevalence, circumstances, and immediate consequences surrounding sub-types of type II violent events among a large sample of hospital workers likely to interact with patients and/or visitors as part of their job, in 6 U.S. hospitals.

## METHODS

### Definition of Sub-Types of Type II Workplace Violence

Our study definition of type II workplace violence included the three sub-types used in prior studies: physical assault, physical threat, and verbal abuse [Pompeii et al., 2013]. After pilot-testing at three study hospitals, we modified the working definitions of: (i) physical assault which included aggressive physical contact such as hitting, biting, scratching, pushing, shoving, spitting and/or sexual assault where a physical injury may or may not occur; (ii) physical threat included threatening or aggressive physical behavior or physical force that makes the worker feel that they may be harmed such as shaking fists, throwing furniture, destroying property, having an aggressive stance, physically moving toward the worker, moving into the worker's physical space; and (iii) verbal abuse included aggressive or inappropriate language that makes the worker feel threatened, scared and/or uncomfortable such as yelling, name calling, rude language, and verbal bullying. In each case, violence was perpetrated by patients or visitors towards the worker.

### Study Hospitals and Data Collection

This study took place in two large hospital systems in Texas (TX) and North Carolina (NC); each system included one large medical center hospital and two community hospitals. Approximately 11,000 workers from the 6 hospitals who were likely to interact with patients and/or visitors as part of their job were invited to participate in a survey referred to as the *Blitz* (URL to BlitzSurvey) which was anonymous, and designed to take no longer than 5 minutes to complete.

Participants provided demographic and occupational information, career prevalence of type II violence, as well as the number of times they had experienced each sub-type of violence in the previous 12 months (which could involve all three sub-types in a single event). Workers were asked to provide details about one violent event in this time period; those who experienced more than one event were asked to report on the event they deemed most serious. Details were sought regarding the perpetrator (patient/visitor), if staff were alone during the event, location, perception of the perpetrator's intent to harm, weapons used (e.g., body part, gun) and factors the participant perceived to contribute to the event. Participants were asked if they were injured, lost workdays, sought medical treatment or counseling, if they reported the event, to whom (e.g., manager, security) and/or through which reporting system (e.g., first report of injury, general hospital patient and/or worker safety reporting system). Two open-ended questions asked for event details, and if the event made the worker feel frightened or concerned about their personal safety.

The hospital's Chief Executive Officer (TX sites) or study investigator (NC sites) sent an initial email invitation to workers, with a direct link to the online *Blitz* survey offered in English and Spanish, and weekly reminder emails for three weeks. Workers without intranet access (e.g., housekeepers) were provided paper surveys and a stamped envelope, which were distributed during staff meetings by study investigators.

### Data Analysis

Descriptive statistics were used to describe respondents and examine demographic and occupational characteristics associated with type II violence and each sub-type. Twelve-month prevalence was assessed using a hierarchy of mutually exclusive categories of the sub-types: (i) physical assault that

could also include physical threat and/or verbal abuse; (ii) physical threats that could also include verbal abuse; and (iii) verbal abuse only. Using log-binomial regression, crude and adjusted prevalence ratios (PRs and aPRs) and 95% confidence intervals (CIs) were calculated to examine relative differences in prevalence across worker characteristics.

Using survey responses related to circumstances surrounding these events supplemented with open-ended text descriptions, each event was categorized into sets of perpetrator circumstances surrounding the event, including: (i) mental health/behavioral problems; (ii) medication or pain issues including illicit drug and alcohol use; and (iii) dissatisfaction with care, family and/or physician conflict, and receiving bad news. Frequencies were examined for these categories, and for nested sub-categories, which were stratified by violence sub-types. Analyses were conducted using SAS 9.3. [2002–2004].

All study methods and procedures were approved by the Institutional Review Boards at The University of Texas Health Science Center at Houston and Duke University Medical Center.

## RESULTS

Half (49.0%; n¼5,385/11,000) of the workers likely to interact with patients and/or visitors as part of their job responded to the Blitz survey (Table I). The demographic characteristics of respondents are reflective of the underlying population of workers surveyed. Most were female (79.7%), half (48.8%) were white, one-fourth (23.3%) black, and more than half (56.6%) older than age 40. Larger occupational groups included nurses (36.5%), physical therapist/patient and medical tech (14.8%), administrative staff (12.7%), and nurses' aide/patient sitter/patient transporter (10.0%). Smaller workgroups included nurse manager/unit manager (4.8%), physicians/nurse practitioner/physician (3.1%), and security guard/police officer (1.1%).

### Type II Violence Prevalence

Career prevalence of type II violence among respondents was 50.4%, with a 12-month prevalence among respondents of 39.0%. A total of 2,098 workers experienced at least one type II violent event in the prior year, with most (91%) experiencing more than one event. These 2,098 workers reported being physically assaulted 1,180 times, physical threatened 2,260 times and and verbally abused 5,676 times in the prior 12 months (Fig. 1). These were not measured as mutually exclusive events. Workers could have experienced these three type II violence sub-types in a single event.

No meaningful differences of type II violence were observed across the two health systems including by hospital type (i.e., medical center vs. community—data not shown). No differences were observed by gender, while white workers had a modestly higher prevalence of violence relative to other racial/ethnic groups (Table I). The prevalence of type II violence did not vary by years in the profession, with the exception of a low prevalence among workers with <1 year of experience. There was a steady increase in the prevalence of assault by decreasing age categories; workers under age 30 had an adjusted PR of 2.0 (95%CI 1.6, 2.5) compared to those over age 60. Security/police officers (63.8%), nurses (53.8%), nurses' aides/sitters/transporters (45.8%), social workers/case managers (44.6%) and department/unit managers (42.1%) had the greatest 12-month prevalence. These groups had an adjusted 1.5 to 2.2-fold increase in the prevalence of type II violence relative to administrative workers. Relatively low prevalence values were observed among pharmacists/pharmacy techs (10.5%) and food service/housekeeping workers (9.3%).

### Sub-Types of Type II Violence

For the events deemed more serious by workers, verbal abuse was common (62.0%; n¼1,301) followed by physical threats (19.2%; n¼394) and assaults (18.8%; n¼403). Verbal abuse was modestly higher among women (aPR ¼ 1.2; 95%CI 1.0, 1.3), with no difference in physical assault or threat by gender (Table II). Across sub-types, and particularly for physical threats, whites had a higher prevalence of violence than blacks. Regardless of violence sub-type, those under the age of 61 reported a higher prevalence, with younger age groups (18–40) at particularly high risk. Those under age 40 had nearly four times greater prevalence of physical assault (aPR¼3.7; 95%CI 1.8, 7.6) than workers over age 60.

Participants in jobs typically involving direct patient care were more likely to indicate physical assault, including 30.5% (75/246) of the events experienced among nurses' aides, 24.5% (62/253) among physical therapists/techs, and 21.5% (229/1,093) among nurses (Tables I and II). In contrast to their relatively low overall type II violence risk, physical therapists/techs had higher prevalence of physical assaults (aPR¼5.6; 95%CI 2.6, 12.3) and physical threats (aPR¼1.9; 95%CI: 1.1, 3.3). Among workers in jobs that require more verbal interaction (than direct care) with patients and visitors, they were more likely to indicate verbal abuse relative to other sub-types, including 61.0% (66/108) of events experienced by nurse managers, 78.1% (32/41) experienced by social workers/case managers, 86.7% (13/15) by pharmacists, 80.8% (21/26) by food service workers and 80.7% (152/177) by administrative staff.

### Circumstances Surrounding Events

The majority (72.4%) of violent events in the prior 12 months occurred in patient rooms or exam rooms

TABLE I. Twelve-month Prevalence, Crude and Adjusted Prevalence Ratios (PR)[a], and 95% Confidence Intervals (CI) of Type II Violence in Six U.S. Hospitals (n ¼5,385)

| | Respondents | | Twelve-month prevalence estimates of type II violence | | |
|---|---|---|---|---|---|
| | No. | % | % (No.) | Crude PR (95%CI) | Adjusted PR (95%CI)[a] |
| All respondents | 5,385 | 100.0 | 39.0 (2,098) | Ç | Ç |
| Hospital system location[b] | | | | | |
| North Carolina Study Hospitals | 2,430 | 45.1 | 42.7 (1,037) | 1.2 (1.1, 1.3) | 1.1 (0.99, 1.1) |
| Texas Study hospitals (ref) | 2,955 | 54.9 | 35.9 (1,061) | 1.0 | 1.0 |
| Gender | | | | | |
| Female | 4,290 | 79.7 | 40.3 (1,728) | 1.2 (1.1,1.3) | 1.0 (0.95, 1.1) |
| Male | 1,021 | 19.0 | 33.7 (341) | 1.0 | 1.0 |
| Race | | | | | |
| Asian | 484 | 9.1 | 41.1 (199) | 0.96 (0.86, 1.1) | 0.89 (0.79, 1.0) |
| Black | 1,256 | 23.3 | 28.7 (361) | 0.67 (0.61, 0.74) | 0.83 (0.75, 0.91) |
| Hispanic /Latino | 419 | 7.8 | 34.4 (144) | 0.80 (90.70, 0.92) | 0.94 (0.82, 1.1) |
| Other | 125 | 2.3 | 41.6 (52) | 0.97 (90.79, 1.2) | 0.97 (0.80, 1.2) |
| Preferred not to answer | 472 | 8.8 | 46.0 (217) | 1.1 (0.96, 1.2) | 1.0 (0.91, 1.1) |
| White (ref) | 2,629 | 48.8 | 42.8 (1,125) | 1.0 | 1.0 |
| Age (years) | | | | | |
| 18^30 | 960 | 17.8 | 46.8 (449) | 2.2 (1.8, 2.8) | 2.0 (1.6, 2.5) |
| 31^40 | 1,338 | 24.9 | 45.3 (606) | 2.2 (1.7, 2.7) | 1.9 (1.5, 2.4) |
| 41^50 | 1,436 | 26.7 | 38.9 (559) | 1.9 (1.5, 2.3) | 1.7 (1.3, 2.1) |
| 51^60 | 1,271 | 23.6 | 31.3 (398) | 1.5 (1.2, 1.9) | 1.3 (1.1, 1.7) |
| 61years and older (ref) | 338 | 6.3 | 21.0 (71) | 1.0 | 1.0 |
| Years in profession | | | | | |
| <1 | 390 | 7.2 | 24.9 (97) | 0.66 (0.55, 0.79) | 0.58 (0.48, 0.70) |
| 1^5 | 1,447 | 26.9 | 44.9 (650) | 1.2 (1.1, 1.3) | 0.99 (0.91, 1.1) |
| 6^10 | 864 | 16.0 | 39.8 (344) | 1.1 (0.96, 1.1) | 0.96 (0.87, 1.1) |
| 11þ (ref) | 2,669 | 49.6 | 37.6 (1,004) | 1.0 | 1.0 |
| Occupational group | | | | | |
| Administrative staff (ref) | 684 | 12.7 | 25.9 (177) | 1.0 | 1.0 |
| Food service, housekeeping | 280 | 5.2 | 9.3 (26) | 0.36 (0.24, 0.53) | 0.40 (0.27, 0.60) |
| Nurse | 1,976 | 36.5 | 53.8 (1,063) | 2.1 (1.8, 2.4) | 1.8 (1.6, 2.1) |
| Nurses' aide, patient sitter, patient transporter | 537 | 10.0 | 45.8 (246) | 1.8 (1.5, 2.1) | 1.7 (1.4, 1.9) |
| Nurse manager, unit manager | 256 | 4.8 | 42.1 (108) | 1.6 (1.4, 2.0) | 1.5 (1.3, 1.8) |
| Pharmacist, Pharmacy Tech | 143 | 2.7 | 10.5 (15) | 0.41 (0.25, 0.67) | 0.33 (0.20, 0.57) |
| Physical therapist, medical tech, patient tech | 799 | 14.8 | 31.7 (253) | 1.2 (1.0, 1.4) | 1.1 (0.93, 1.3) |
| Physician, NP, PA[c] | 167 | 3.1 | 46.1 (77) | 1.8 (1.5, 2.2) | 1.5 (1.2, 1.9) |
| Security guard, police officer | 58 | 1.1 | 63.8 (37) | 2.5 (2.0, 3.1) | 2.2 (1.8, 2.8) |
| Social worker, case manager | 92 | 1.7 | 44.6 (41) | 1.7 (1.3, 2.2) | 1.6 (1.3, 2.1) |
| Other occupational groups | 351 | 6.5 | 12.5 (44) | 0.48 (0.36, 0.66) | 0.51 (0.38, 0.70) |

[a]PR, prevalence ratio calculated with log-binomial regression.
[b]Three hospitals per hospital system.
[c]NP, nurse practitioner; PA, physician assistant.

(Table III). Less than half (39.6%) occurred while the worker was alone with the perpetrator. Aweapon(s) was used in one-third of the events; most (84.3%) being a body part with fewer involving body fluids (14.1%), furniture (7.4%), and gun and/or knife (0.95%). Of note, 111 (8.5%) events reported as verbal abuse also involved a weapon, in which the text description revealed the weapon to be body part for most of these. Workers perceived that perpetrators intended to harm them in 37.2% of physical assaults, 28.7% of threats and 8.1% of verbal abuse events.

Perpetrators were more often patients (76.1%) than visitors (23.9%), with most physical assaults (95.6%),

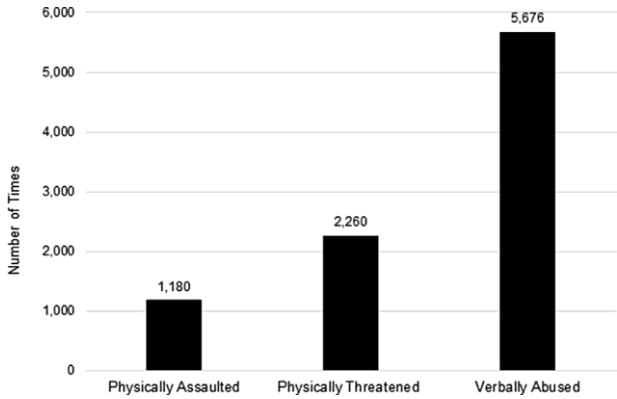


FIGURE 1. The number of times type II violence sub-types were experienced by Workers in 12-months in six U.S. Hospitals, 2012 (n ¼ 2,098 workers).
Not mutually exclusive events.

physical threats (77.2%), and verbal abuse (69.4%) by patients. Mental health/behavioral issues were indicated as contributing factors for 63.7% of patient perpetrated events followed by medication withdrawal, pain, illicit drug/alcohol use (37.8%), and being unhappy with care and/or experiencing conflict with a physician and/or family member (33.3%). The majority of physical assaults (82.1%) and physical threats (75.3%) perpetrated by patients were also attributed, in part, to mental health or behavioral issues.

Visitor perpetrated events were more often verbal abuse (78.7%), and were associated with dissatisfaction with care (72.7%), including concern about patient care, unmet expectations of care, and/or long wait for care/scheduling delays. Fewer visitor-perpetrated events were attributed to alcohol/illicit drug use (10.0%) emergency/acute situations (9.6%), and/or environmental issues (e.g., crowded waiting room; 6.4%).

## Reporting of Events

The majority of victims indicated in the survey that they reported 75% of the events. Physical assaults (82.6%) and threats (82.2%) were more likely to be reported than verbal abuse events (70.5%). Workers could use more than one mechanism for reporting an event. We observed that the act of reporting and the mechanism used to report varied by the violence sub-type (Fig. 2). Reports to coworkers/managers were most common (64.0%) across all violence sub-types including 40.9% physical assaults, 35.0% threats, and 47.4% verbal abuse. Compared to verbal abuse (13.3%), more physical abuse (25.1%), and physical threat (26.4%) events were reported in patient medical records. In contrast, only 7.1% of victims submitted a written report into a hospital reporting system such as the online First Report of Injury system or a general Hospital Safety Reporting System. Sixteen percent called security personnel for assistance with the event including 17.1% for physical assaults, 28.4% physical threats and 12.1% verbal abuse events. Twenty five percent of events were not reported through any these mechanisms.

## Consequences of Type II Violence

Few workers who experienced type II violence were injured (4.6%; n¼96), missed workdays (2.0%; n¼42), sought medical care (2.2%; n ¼47), and/or counseling (1.2%; n¼25). More injuries were experienced by nurses (57.8%; n¼55), nurses' aides/transporters (19.8%; n¼19), and physical therapists/patient techs (11.5%; n¼11), with 5.2% (n¼5) experienced by administrative staff. Over one-third of victims (38.2%; n¼802) indicated feeling frightened or worried about their personal safety including victims of physical assault (44.9%; n ¼ 181), physical threats (58.1%; n¼229) and verbal abuse (30.1%; n¼392).

## DISCUSSION

For purposes of estimating the prevalence, nature and consequences of type II violence, we sought input directly from hospital workers whose jobs likely involved interacting with patients and/or visitors across six hospitals in two large health systems, in geographically distinct regions of the U.S. Eleven thousand workers were invited to participate in our survey with half who responded. Respondents were representative of the underlying study population with respect to the distribution of age, gender, race and occupational groups. An overall prevalence of respondents reporting at least one type II violent event in the prior 12 months was 39%, which is similar to prevalence estimates ranging from 31% to 53% reported in prior hospital-based studies [Hesketh et al., 2003; Winstanley and Whittington, 2004; Findorff et al., 2005; Gates et al., 2006]. We also found several of our findings of type II violence with respect to specific demographic and occupational groups similar to those reported in prior studies, which we highlight in detail below. During the administration of the survey we learned some workers were not participating because they had not experienced a type II event. We took steps to ameliorate this, but acknowledge that this may have inflated our prevalence estimates with respect to workers who experience violence at work were more likely to report. It is expected, however, that a proportion of non-responders experienced workplace violence in the previous 12 months.

Our findings highlight the pervasive nature of patient and visitor perpetrated violence experienced by U.S. hospital workers. While a 12-month type II violence prevalence of 39% among respondents suggests a significant public health issue, the staggering number of times these workers indicated

TABLE II. Twelve-month Prevalence, Crude and Adjusted Prevalence Ratios (PR)[a] and 95% Confidence Intervals (CI) of Type II Violence Sub-Types[b] in Six U.S. Hospitals (n¼5,385)

| | | Physical Assault | | Physical Threat | | Verbal Abuse | |
|---|---|---|---|---|---|---|---|
| | No. | % | Adjusted PR (95% CI) | % | Adjusted PR (95% CI) | % | Adjusted PR (95% CI) |
| All respondents | 5,385 | 7.5 | Ç | 7.3 | Ç | 24.2 | Ç |
| Hospital System Location[c] | | | | | | | |
| N.C. Study Hospitals | 2,430 | 8.6 | 1.1 (0.95, 1.4) | 8.6 | 1.1 (0.93, 1.4) | 25.5 | 1.1 (0.95, 1.2) |
| Texas Study Hospitals | 2,955 | 6.6 | 1.0 | 6.3 | 1.0 | 23.1 | 1.0 |
| Gender | | | | | | | |
| Female | 4,290 | 7.6 | 0.84 (0.67, 1.1) | 7.3 | 1.0 (0.81, 1.3) | 25.4 | 1.2 (1.0, 1.3) |
| Male | 1,021 | 7.4 | 1.0 | 7.6 | 1.0 | 18.9 | |
| Race | | | | | | | |
| Asian | 484 | 8.1 | 0.77 (0.55, 1.1) | 5.6 | 0.56 (0.38, 0.83) | 27.5 | 0.95 (0.81, 1.1) |
| Black | 1,256 | 5.0 | 0.64 (0.48, 0.86) | 4.2 | 0.58 (0.43, 0.79) | 19.5 | 0.87 (0.76, 1.0) |
| Hispanic/Latino | 419 | 5.7 | 0.70 (0.46, 1.1) | 4.3 | 0.50 (0.29, 0.84) | 24.3 | 1.1 (0.90, 1.3) |
| Other | 125 | 8.0 | 0.96 (0.54, 1.7) | 6.4 | 0.72 (0.38, 1.4) | 27.0 | 1.0 (0.79, 1.4) |
| Preferred not to answer | 472 | 8.8 | 0.91 (0.66, 1.3) | 9.5 | 1.1 (0.83, 1.5) | 27.6 | 1.0 (0.89, 1.2) |
| White (ref) | 2,629 | 8.6 | 1.0 | 9.3 | 1.0 | 24.8 | 1.0 |
| Age (years) | | | | | | | |
| 18 to 30 | 960 | 10.1 | 3.7 (1.8, 7.6) | 8.9 | 2.8 (1.6, 5.2) | 27.8 | 2.1 (1.5, 2.8) |
| 31 to 40 | 1,338 | 9.9 | 3.6 (1.8, 7.2) | 9.3 | 2.8 (1.6, 4.9) | 26.1 | 1.9 (1.5, 2.5) |
| 41 to 50 | 1,436 | 6.6 | 2.5 (1.2, 5.0) | 7.8 | 2.1 (1.2, 3.5) | 24.5 | 1.7 (1.3, 2.2) |
| 51 to 60 | 1,271 | 5.3 | 1.9 (0.93, 3.8) | 4.6 | 1.0 (0.57, 1.8) | 21.5 | 1.4 (1.0, 1.8) |
| 61 years and older (ref) | 338 | 2.7 | 1.0 | 3.9 | 1.0 | 14.5 | 1.0 |
| Years in Profession | | | | | | | |
| < 1 | 390 | 4.4 | 0.41 (0.24, 0.70) | 3.9 | 0.30 (0.17, 0.54) | 16.7 | 0.58 (0.46, 0.74) |
| 1 to 5 | 1,447 | 9.5 | 1.1 (0.87, 1.4) | 8.2 | 0.80 (0.61, 1.1) | 27.2 | 1.0 (0.89, 1.2) |
| 6 to 10 | 864 | 9.4 | 1.2 (0.92, 1.5) | 6.8 | 0.79 (0.60, 1.1) | 23.6 | 0.93 (0.81, 1.1) |
| 11þ (ref) | 2,669 | 6.3 | 1.0 | 7.5 | 1.0 | 23.9 | 1.0 |
| Occupational Group | | | | | | | |
| Administrative (ref) | 684 | 1.0 | | 2.6 | 1.0 | 22.2 | 1.0 |
| Food Service, Housekeeping | 280 | Ç | Ç[d] | 1.8 | Ç[d] | 7.5 | 0.37 (0.24, 0.58) |
| Nurse | 1,976 | 11.6 | 11.5 (5.4, 24.3) | 10.0 | 4.1 (2.5, 6.6) | 32.2 | 1.6 (1.4, 1.9) |
| Nurses Aide, Patient Sitter, Patient Transporter | 537 | 14.0 | 13.4 (6.2, 28.8) | 7.1 | 3.3 (1.9, 5.7) | 24.8 | 1.3 (1.0, 1.6) |
| Nurse Manager, Unit Manager | 256 | 4.7 | 4.9 (2.0, 12.2) | 11.7 | 4.1 (2.4, 7.2) | 25.8 | 1.3 (1.0, 1.6) |
| Pharmacist, Pharmacy Tech | 143 | Ç | Ç[d] | 1.4 | Ç[d] | 9.1 | 0.33 (0.19, 0.59) |
| Physical Therapist, Med Tech, Patient Tech | 799 | 7.8 | 5.6 (2.6, 12.3) | 6.0 | 1.9 (1.1, 3.3) | 17.9 | 0.83 (0.68, 1.0) |
| Physician, NP, PA[e] | 167 | 3.6 | 2.9 (0.97, 8.4) | 15.0 | 4.7 (2.6, 8.4) | 27.5 | 1.3 (1.0, 1.8) |
| Security Guard, Police Offcr | 58 | 6.9 | 9.5 (3.0, 30.2) | 24.1 | 9.6 (5.2, 17.7) | 32.8 | 2.0 (1.4, 2.8) |
| Social Worker, Case Mgr | 92 | Ç | Ç[d] | 9.8 | Ç[d] | 34.8 | 1.7 (1.2, 2.3) |
| Other Occupational Groups | 351 | 2.0 | 1.8 (0.63, 5.1) | 1.7 | 0.65 (0.26, 1.6) | 8.8 | 0.42 (0.29, 0.61) |

[a]Calculated with log-binomial regression.

[b]Sub-typesoftype IIviolencearemutuallyexclusiveanddefinedas: physicalassault(whichmayalsoincludephysicalthreatand/orverbalabuse); physicalthreat(whichmay also include verbal abuse); and verbal abuse only.

[c]Three hospitals per hospital system.

[d]Excluded from the adjusted model due to small sample sizes; model would not converge.

[e]NP, nurse practitioner; PA, physician assistant.

they were physically assaulted, threatened, and/or verbally abused in this same time period highlights just how significant. Moreover, events of verbal abuse resulted in 30% of respondent victims feeling frightened for their personal safety indicating that it should not be assumed that these events are not as serious as physical assaults or threats. A small proportion of workers who reported a verbal abuse event also indicated that a weapon was involved, with body part (being threatened or hit) as the weapon and context described in most events. These findings may suggest that the verbal nature of the event was perceived on the part of the worker to be a more prominent or serious compared to being threatened or hit. Physical assaults more commonly involved a body part as a weapon followed by body fluids, while traditional weapons were used in less than 1% of events. All study hospitals prohibited concealed weapons; however, we did not ascertain data regarding weapons confiscated by security during the study period.

Non-white respondents had a lower prevalence of physical assaults and physical threats. Estimates were adjusted for occupation and cannot be attributed to differential risk in jobs held by whites and non-whites. Nachreiner et al. [2007] observed that white registered nurses had a reduced risk (OR 0.58; 95%CI: 0.31, 1.08) of physical assault relative to non-whites, but did not find this same association among white licensed practical nurses (OR 1.16; 95%CI: 0.44, 3.05). Before concluding that non-whites are less likely to be victims of violence in hospitals, consideration should be given to the possibility of different cultural definitions of these violence sub-types and/or differences in reporting.

The increased prevalence of workplace violence across all sub-types in workers of younger age suggests that younger workers are more likely to be victims. Older workers may be more accepting of these events resulting in their reporting less [Whittington et al., 1996] or they may be more skilled at event de-escalation. In contrast, the prevalence of violence was fairly steady across categories of time in the nursing profession. The exception was for those with less than 1 year of experience; their relatively low prevalence of violence likely relates to their limited time at risk. Gerberich et al. [2005] similarly reported an inverse trend in physical assault by age, and a lack of association by years in the profession, while Kowalenko et al. [2005] reported emergency room physicians with fewer years of experience were more likely to be victims of physical assault and verbal abuse.

Most workgroups involved in direct patient care were at considerable risk of violence. Nurses had the highest prevalence followed by nurses' aides, and physicians/nurse practitioners/physician assistants. These findings are not surprising given that hands-on patient care is a risk factor for type II violence [Findorff et al., 2005]. We found physical therapists/patient technicians at lower risk of verbal abuse, but at particularly high risk of physical assault. Relative to nursing staff, these workgroups are not the patients' primary care provider and most likely provide care to a greater number of patients in a given work shift, but perhaps for shorter time periods (e.g., therapy session, blood draw).

Several workgroups not responsible for direct care shared the burden of type II violence including nurse/unit managers, security personnel, and case managers/social workers which was observed in a few prior studies [Hesketh et al., 2003; Findorff et al., 2005; Ayranci et al., 2006]. Prior to a workplace violence prevention intervention, Arnetz and Arnetz [2000] found that those in a supervisory position were at twofold increased risk of type II violence in a 12-month time period relative to those not in this type of job. These workgroups are often called on to assist with aggressive patients and visitors. Other groups not typically discussed in the hospital violence literature (e.g., administrative staff, food services workers, housekeeping staff) were not immune to type II violence, including our referent group of administrative staff in which one-fourth of respondents reported an event.

In line with prior findings [Ayranci et al., 2006; Pompeii et al., 2013], workers incurred few injuries; however, those injured were more likely to be nurses, nurse's aides, and physical therapists. Also consistent with other reports [Fernandes et al., 2002; Findorff et al., 2005; Kowalenko et al., 2005; El-Gilany et al., 2010], nearly 40% of victims of type II violence reported being frightened or worried about their safety at work. Other studies have reported victims of assault at work have decreased job satisfaction [Hesketh et al., 2003; Ayranci et al., 2006; El-Gilany et al., 2010], feelings of anger, frustration, and/or blaming themselves [Fernandes et al., 2002; Findorff et al., 2005; Gerberich et al., 2005; Kowalenko et al., 2005; El-Gilany et al., 2010]. In separate analyses of workers' compensation claims and pharmacy claims at our NC study hospitals, an association was observed between reporting a type II violence event and being prescribed anti-depressant and anxiolytic medication [Dement et al., 2014]. Psychological consequences may stem, in part, from the victim's perception that the perpetrator intended to harm them [Cortina et al., 2001]. Response to such fears has been reported to include hyper-vigilance at work, or seeking protection by carrying a weapon [Findorff et al., 2005; Kowalenko et al., 2005; Ayranci et al., 2006]. Others have reported associations between hospital nurses who experienced emotional abuse, as well as decreased quality of care they provided to their patients [Arnetz and Arnetz, 2001].

Type II violence was more often perpetrated by patients than visitors, which is consistent with a recent study of U.S. hospital nurses [Speroni et al., 2014]. This is not unexpected given that these workgroups have greater exposure to patients. Similar to other studies [Gates et al., 2006; Gacki-Smith et al., 2009] workers often attributed physical assaults

TABLE III. Circumstances Surrounding Type II Violent Events and Event Sub-Types[a] in the Prior 12 Months by Patient and Visitor Perpetrator Events (n¼2,098)

| | All Type II events 2,098 | Physical assault 403 | Physical threat 394 | Verbal abuse 1,301 |
|---|---|---|---|---|
| Location of event | | | | |
| Patient room/exam room | 1,518 (72.4) | 358 (88.6) | 295 (75.1) | 865 (66.5) |
| Hallway | 186 (8.9) | 30 (7.4) | 34 (8.7) | 122 (9.4) |
| Waiting room | 129 (6.2) | 2 (0.50) | 25 (6.4) | 102 (7.8) |
| Via telephone | 80 (3.9) | Ç | 1 (0.25) | 79 (6.1) |
| Other area | 161 (7.7) | 12 (2.9) | 34 (8.7) | 115 (8.8) |
| Worker alone during event | 830 (39.6) | 144 (35.7) | 148 (37.6) | 538 (41.4) |
| Worker perceived perpetrator intended to harm | | | | |
| Yes | 368 (17.5) | 150 (37.2) | 113 (28.7) | 105 (8.1) |
| Not sure | 777 (37.0) | 121 (30.0) | 164 (41.6) | 492 (37.8) |
| No | 950 (45.3) | 131 (32.5) | 117 (29.7) | 702 (54.0) |
| Weapon used[b] | 631 (30.0) | 339 (84.1) | 180 (45.7) | 111 (8.5)[c] |
| Body part | (84.3) | (95.0) | (75.6) | (66.7) |
| Body fluids | (14.1) | (13.9) | (18.9) | (7.2) |
| Furniture | (7.4) | (6.5) | (11.7) | (3.6) |
| Food tray | (4.3) | (3.8) | (6.1) | (2.7) |
| Medical equipment | (3.5) | (1.8) | (7.2) | (2.7) |
| Maintenance equipment | (1.6) | (1.8) | (1.7) | (0.90) |
| Gun or knife | (0.95) | (0.60) | (2.2) | ^ |
| Other | (10.8) | (4.7) | (11.7) | (27.0) |
| Patient perpetrator circumstances[d] | No.1596 | No. 386 | No. 304 | No. 903 |
| Mental health /behavioral issues[e] | 1017 (63.7) | 317 (82.1) | 229 (75.3) | 471 (52.2) |
| Altered mental status /sundowning | (58.4) | (74.4) | (57.2) | (48.2) |
| Behavioral or emotional problems | (41.6) | (25.6) | (16.6) | (51.8) |
| Medication /drug/pain related | 603 (37.8) | 153 (39.6) | 136 (44.7) | 314 (34.7) |
| Side effects /medication withdrawal | (47.9) | (56.9) | (62.5) | (37.3) |
| Experiencing pain | (47.3) | (36.6) | (30.1) | (59.9) |
| Drunk/Illicit drugs | (36.7) | (39.9) | (43.4) | (32.2) |
| Conflict /Unhappy with Care[d] | 532 (33.3) | 63 (16.3) | 99 (32.6) | 370 (40.8) |
| Unhappy with care received | (62.8) | (61.9) | (55.6) | (64.9) |
| Patient-doctor conflict | (43.6) | (41.2) | (47.5) | (42.9) |
| Patient-family conflict | (24.2) | (30.2) | (31.3) | (21.4) |
| Receiving bad news | (12.0) | (6.3) | (8.1) | (14.1) |
| Other Issues | 91 (5.7) | 14 (3.6) | 10 (3.3) | 67 (7.4) |
| Did not know | 143 (8.9) | 16 (4.1) | 22 (7.2) | 105 (11.6) |
| Visitor perpetrator circumstances[f] | No. 502 | No.18 | No. 89 | No. 395 |
| Conflict /unhappy with care | 365 (72.7) | 12 (66.7) | 69 (77.5) | 284 (71.9) |
| Concerned or angry about patient care | (61.6) | (58.3) | (66.7) | (60.5) |
| Unmet expectations of care | (39.2) | (50.0) | (33.3) | (41.9) |
| Long wait for care/Scheduling delays | (33.7) | (58.3) | (33.3) | (32.7) |
| Receiving bad news | (22.5) | (33.3) | (26.1) | (21.1) |
| Patient-doctor conflict | (18.4) | (41.7) | (17.4) | (17.6) |
| Patient-visitor conflict | (11.5) | (25.0) | (13.0) | (10.9) |
| Emergency or acute situation | 48 (9.6) | 2 (11.1) | 12 (13.3) | 34 (8.6) |
| Alcohol /Illicit drug use | 50 (10.0) | 2 (11.1) | 12 (13.5) | 36 (9.1) |
| Hospital environment (e.g. crowded wait room) | 32 (6.4) | 2 (11.1) | 4 (4.5) | 26 (6.6) |
| Other issues | 54 (10.8) | 1 (5.6) | 7 (7.9) | 47 (11.9) |
| Did not know | 64 (12.8) | 5 (27.8) | 11 (12.4) | 48 (12.2) |

[a]Sub-types of type II violence are mutually exclusive and defined as: physical assault (which may also include physical threat and/or verbal abuse); physical threat (which may also include verbal abuse); and verbal abuse only.

[b]Includes nested frequencies for this category Ç which are not mutually exclusive. [c]Participants indicated a weapon was used for verbal abuse Ç text description revealed that body part was weapon used. [d]Broad categories of Mental Health, Medication, and Conflict are not mutually exclusive. [e]Includes nested frequencies for this category - which are mutually exclusive. [f]Broad categories of Conflict, Emergency, Alcohol, and Hospital Environment are not mutually exclusive.

and physical threats by patients to altered mental status or behavioral problems. These findings highlight the challenges workers face when caring for patients with mental illness in the general medicine hospital setting, and emphasizes the need for these workers who are outside the psychiatric care setting to be trained on how to best care for these patients. Less than half, but not an insignificant proportion of patient perpetrated events, were attributed to drug/alcohol use, pain, or some form of conflict. Visitor perpetrated events, which were mostly verbal in nature, centered largely on concern for the patient. Wait times and crowded waiting rooms were not as prominent as we expected based on other reports; however, these prior findings were largely from emergency room studies [Gates et al., 2006; Gacki-Smith et al., 2009; El-Gilany et al., 2010].

The diverse nature of violent events highlights the need for broad workplace policies and staff training that allows workers to gain necessary skills to recognize, de-escalate, and manage these events. Application of a universal precautions approach to workplace violence prevention has been suggested [Hill, 2012; Gillespie et al., 2014] with all patients/visitors being treated as potentially violent. Suggested precautions include having chaperones during interactions with high-risk patients/visitors, maintaining safe physical distance when possible, and consistently enforcing visitor restriction policies. The high proportion of events in which the perpetrator was unhappy with care reinforces the need for workers to be trained to recognize early cues and verbal de-escalation techniques as forms of prevention and mitigation [Joe et al., 2014].

Workplace violence is under-reported through established mechanisms making it difficult to study [Wuellner and Bonuato, 2014]. The use of multiple data sources has recently been called for to improve occupational injury surveillance [Arnetz et al., 2011] and our use of a self-report survey that included established definitions of type II violence, that ascertained staff reactions and perceptions of contributing circumstances, demonstrates that active surveillance efforts are essential for supplementing information gleaned through existing hospital resources such as workers' compensation.

Limitations of our study are worth noting. Information on circumstances surrounding these events was ascertained from workers who were victims, rather than a third party, or from the perpetrator. We believe workers would have knowledge about the perpetrator if they were caring for them. Still, details about these events may not have been captured. The three study hospitals in Texas do not directly employ physicians, which most likely resulted in a less robust estimate of type II violence for this work group, which remains in need of further study. Numerous studies have highlighted the risk of type II violence in emergency and psychiatric units. We did not have a refined measure of work departments, but prior research in our study hospitals and others have identified these departments, in addition to critical care, medical-surgical, neurology, rehabilitation/orthopedics, and nursing float pool as high risk [Rodriguez-Acosta et al., 2010; Pompeii et al., 2013].

The large sample size enabled us to examine sub-types of type II violence across occupational groups and perpetrator circumstances, which has not previously been done. We were able to examine adjusted prevalence estimates with respect to worker characteristics, and workgroups not typically considered to be at risk for type II violence in the hospital setting, as well as smaller workgroups that are often overlooked.

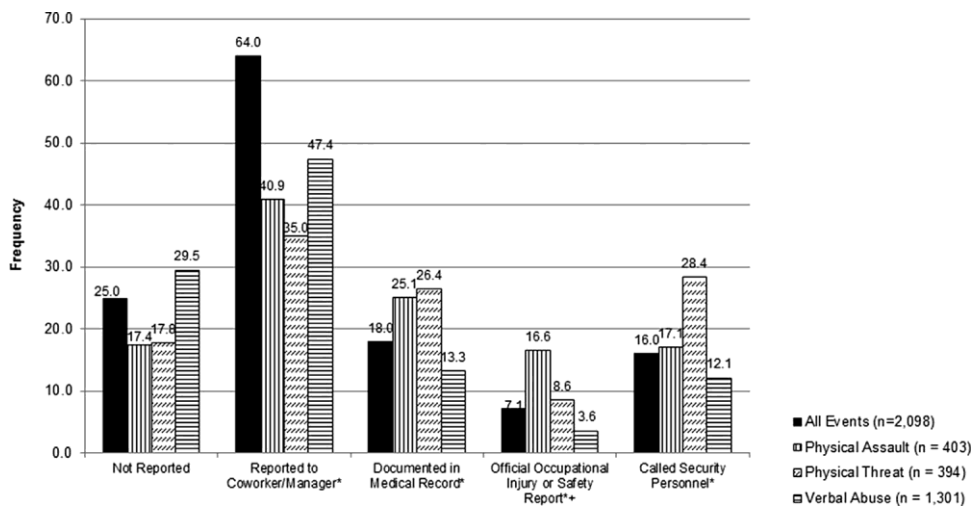


FIGURE 2. Twelve-month prevalence and mechanism of reporting type II violent events in six U.S. Hospitals, 2012 (n ¼ 2,098 events). Not mutually exclusive. ÞFirst report of injury, general hospital safety reporting system pertaining to patient and/or worker safety.

## CONCLUSION

Type II violence is pervasive in hospitals across occupational groups. While patients are more often to be perpetrators than visitors, there is no clear perpetrator profile. The diverse nature of these violent events highlights the need for prevention strategies that go beyond keeping weapons out of institutions. Hospital workers need the skills to recognize and diffuse a wide range of potentially violent circumstances that they may encounter in the course of caring for patients and visitors, as well as institutional support when de-escalation strategies fail. Further consideration by hospital administration should be given to the impact of having workers, who are caring for patients and visitors, while they are frightened and fear for their safety while at work. There have been numerous calls to move occupational safety into mainstream public health. The issue of workplace violence in the hospital setting provides a clear opportunity to implement a change; effectively addressing this pervasive problem could benefit healthcare workers and their patients—who, at some point, are likely to be all of us.

## ACKNOWLEDGEMENTS

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# Hospital Workers Bypass Traditional Occupational Injury Reporting Systems When Reporting Patient and Visitor Perpetrated (Type II) Violence

Lisa A. Pompeii, PhD,[1] Ashley Schoenfisch, PhD,[2] Hester J. Lipscomb, PhD,[2] John M. Dement, PhD,[2] Claudia D. Smith, PhD, RN, NE-BC,[3] and Sadie H. Conway, PhD[1]

Background *Under-reporting of type II (patient/visitor-on-worker) violence by workers has been attributed to a lack of essential event details needed to inform prevention strategies.*

Methods *Mixed methods including surveys and focus groups were used to examine patterns of reporting type II violent events among ~11,000 workers at six U.S. hospitals.*

Results *Of the 2,098 workers who experienced a type II violent event, 75% indicated they reported. Reporting patterns were disparate including reports to managers, co-workers, security, and patients' medical records—with only 9% reporting into occupational injury/safety reporting systems. Workers were unclear about when and where to report, and relied on their own "threshold" of when to report based on event circumstances.*

Conclusions *Our findings contradict prior findings that workers significantly under-report violent events. Coordinated surveillance efforts across departments are needed to capture workers' reports, including the use of a designated violence reporting system that is supported by reporting policies.* Am. J. Ind. Med. © 2016 Wiley Periodicals, Inc.

*KEY WORDS: type II violence; reporting violence; occupational injury surveillance; hospital workers*

## INTRODUCTION

Violence perpetrated by patients and visitors against hospital workers (type II violence) is recognized as a significant public health issue. Most of what we know about the risk of type II violence in the general medical hospital setting comes from cross-sectional studies which offer 4-week to 12-month period-prevalence estimates that range from 13% to 90% [Pompeii et al., 2013]. Little is known about non-fatal workplace violence with respect to rates of type II violence, including changes over time, and differences between occupational groups, departments, and hospital settings.

In 2001, experts recognized this gap and called for improved surveillance of non-fatal violence, including type II violence in healthcare settings [Peek-Asa et al., 2001; Runyan, 2001]. In order to develop and evaluate appropriate interventions, an emphasis was placed on the importance of rate-based estimates, as well as the understanding of contextual details surrounding type II

[1]Division of Epidemiology, Human Genetics, Environmental Sciences, School of Public Health, University of Texas Medical Center, Houston, Texas
[2]Department of Occupational Medicine, Duke University Medical Center, Durham, North Carolina
[3]St. Luke's Medical Center, Houston, Texas
Contract grant sponsor: National Institute for Occupational Safety and Health.
Correspondence to: Lisa A. Pompeii, PhD, Division of Epidemiology, Human Genetics, Environmental Sciences, School of Public Health, University of Texas Med- ical Center, Houston, Texas. E-mail: lisa .pompeii@uth.tmc.edu

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violent events. Since that date, few studies have reported improved surveillance efforts and/or rates of type II violence experienced by hospital workers [Rodríguez-Acosta et al., 2010; Arnetz et al., 2011; Pompeii et al., 2013; Gomma et al., 2015].

Traditional occupational injury surveillance systems (e.g., OSHA Log, Workers' Compensation) are populated by reports made by workers into a first report of injury (FRI) system. The utility of these data are dependent, however, on workers submitting the initial report into this system. As early as 1983, Lanza [1983] highlighted the problem of under-reporting by nursing staff of type II violent events, which has continued to persist [Arnetz and Arnetz, 2000; Arnetz et al., 2015; Duncan et al., 2001]. Under-reporting of these types of events have been attributed to various factors including workers accepting violence as part of the job [Bensley et al., 1997; Jackson et al., 2002; Gerberich et al., 2004], not being physically harmed [May and Grubbs, 2002], lack of perceived intent on the part of the perpetrator [Henderson, 2003], and lack of follow-up or support from management [Erickson and Williams-Evans, 2000]. Studies also suggest that workers are more likely to report type II violent events to their managers than through a formal occupational safety reporting system [Findorff et al., 2004; Chapman et al., 2010; Speroni et al., 2014].

For purposes of improving the capture of type II violent events into the FRI system and/or a larger type II violence surveillance systems, we sought to better understand reporting patterns of type II violent events in a large cohort of workers in two U.S. hospital systems. We employed a mixed-methods approach to describe where and to whom workers reported violent events, the circumstances surrounding the events that influenced reporting, and hospital follow-up after events were reported.

## METHODS

This study took place in two large hospital systems in Texas (TX) and North Carolina (NC), with each including one general medical center hospital and two community hospitals. Type II violence was defined broadly to include three sub-types of violence: physical assault, physical threat, and verbal abuse. Details about the construction of our study definition are described elsewhere [Pompeii et al., 2015]. A mixed methods approach was employed in which we implemented an anonymous, cross-sectional survey. Separately, we invited front-line workers and managers from these study hospitals to participate in focus groups and key informant interviews, regardless of whether they participated in the survey.

At the time of data collection, four of the six study hospitals did not have a system-wide workplace violence reporting policy to guide workers and managers about where and how these events should be reported. Two hospitals had policies in which workers were guided to report to their supervisor, Human Resources/Labor Relations representatives, or hospital police. These policies did not specify reporting into an occupational injury reporting systems.

Cross-Sectional Survey (URL: BlitzSurvey [2011]): Quantitative data were collected to measure the 12-month prevalence and reporting of type II violent events by workers through an anonymous, 5-min survey, offered online and on paper in English and Spanish. All workers ($n \approx 11{,}000$) in the six hospitals who were likely to interact with patients and/or visitors as part of their job were invited to participate regardless of job title or work department. Workers were invited to participate through email invitations from hospital chief operating officers at the TX hospitals, and by study investigators at the NC hospitals. A direct link to the survey was also placed on the hospitals' intranet system. Information regarding worker demographics, experiences with type II violence in the prior year for one event, details about circumstances surrounding the event, and event consequences were ascertained. If workers experienced more than one event, they were asked to respond about the event they deemed the most serious. Workers were asked if they reported the event, to whom (e.g., co-worker, manager, physician, security, patient's medical record), and/or through an existing occupational injury/safety reporting system in their hospital (i.e., FRI system, hospital safety reporting system). Both hospital systems had an online and paper FRI system in which workers could report work-related injuries and events. In addition, both hospital systems had a general hospital safety reporting system for workers to report safety concerns, including type II violent events. If the worker did not report the event, they were asked to indicate the reason(s) from a list of options, as well as an open-ended field for other reasons which were categorized. This list of options was constructed based on prior study findings pertaining to barriers to reporting type II violence for hospital workers violence [Bensley et al., 1997; Arnetz and Arnetz, 2000; Erickson and Williams-Evans, 2000; Jackson et al., 2002; May and Grubbs, 2002; Henderson, 2003; Gerberich et al., 2004].

Focus groups and key informant interviews: Workers across the hospitals were invited to participate in focus group discussions, regardless of whether they participated in the survey. Department managers assisted in recruiting front-line workers through email invitation, hanging flyers in worker break rooms and bathrooms, and making announcements at staff meetings. Staff were incentivized $25 for their participation. Managers were verbally recruited by study staff at hospital leadership meetings and by email invitation. A semi-structured guide was used to facilitate discussions that included the following domains: (i) knowledge of formal and informal policies and procedures for reporting type II violent events; (ii) reporting procedures by perpetrator type (patient or visitor) or violence sub-type (physical vs. verbal);

(iii) workers' experiences with the existing hospital violence reporting systems; and (iv) methods used to communicate to co-workers about violent patients and visitors.

Descriptive statistics were employed to examine the frequency and reporting mechanism of type II violent events by violent event subtypes, worker demographic and occupational characteristics, and circumstances surrounding events. This same approach was employed to examine reasons workers did not report their type II violent events. Reporting and reporting mechanism(s) were compared across event circumstances and consequences. Unadjusted and adjusted prevalence ratios (PRs) and 95% confidence intervals (CIs) were calculated to examine differences in reporting of type II violent events by worker characteristics and event circumstances. Data analyses were conducted using SAS 9.3 (SAS Institute Inc., 2002–2004).

Focus groups and key informative interviews were digitally recorded and transcribed. Content analysis [Patton, 2002] was performed using qualitative data analysis software [QSR International Pty Ltd., 2010]. Initial coding concurred with the domains outlined in the focus group or key informant interview guides. Additional constructs were created and coded as they arose. This study was approved by the Institutional Review Boards at The University of Texas Health Science Center at Houston and Duke University Health System.

## FINDINGS

Half of those invited to participate responded to the survey (49%, n⅕5,385/11,000), Workers who participated in the cross-sectional survey reflected the underlying target population with respect to demographic and occupational characteristics. A large proportion were female (72.0%), with more than half (56.6%) over 40 years of age. Half (48.8%) were white and one-fourth (23.3%) were black. Nurses (36.5%), physical therapist/patient and medical technicians (14.8%), administrative staff (12.7%) and nurses' aide/patient sitter/patient transporter (10%) were some of the larger workgroups represented, with smaller groups including nurse manager/unit managers (4.8%), physicians/nurse practitioner/physician assistants (3.1%), and security guard/police officers (1.1%). Additional details about the study cohort demographics and occupational characteristics are reported elsewhere [Pompeii et al., 2015]. We conducted 21 focus groups and 3 key informant interviews among 98 workers including nurse managers (n¼21), nurses (n¼36), nurses' aides (n¼21), patient sitters (n¼17), and unit clerks (n¼3). Workers from the emergency department, intensive care units, medical-surgical units (e.g., orthopedics, neurology), and float pool participated.

More than one-third (39%, n¼2,098) of survey respondents indicated that they experienced at least one type II violent event in the prior year with the majority (n¼1,574, 75.0%) indicating that they reported the event in some way (e.g., co-worker, manager, FRI system) (Table I). No differences in reporting were observed across most demographic and occupational characteristics, except for workers who had 1–5 years of employment at the study hospital were slightly more likely to report (PR: 1.07; 95% CI: 1.01, 1.14) relative to those employed more than 10 years. Nurses, nurses' aides/sitters/patient transporters, security guards/police officers and social worker/case managers were more likely to report the event relative to administrative staff. No differences were observed between the unadjusted and adjusted analysis; therefore, the unadjusted estimates are presented. One-fourth of participants (25%, n⅕524) did not report. Reasons for not reporting type II violent events are summarized in Figure 1.

### Event Severity

Workers were more likely to report if they were physically assaulted (PR: 1.17, 95% CI: 1.11, 1.24) or physically threatened (PR: 1.17, 95% CI: 1.10, 1.24) relative to being verbally abused, or if they incurred an injury (1.22; 95% CI: 1.14, 1.31) relative to not being injured (Table II). Similarly, among those who did not report the event (n¼524), a large proportion indicated that they did not report because they were not physically harmed (36.6%) and/or the event was not serious enough (52.3%) (Figure I). During focus groups and interviews, workers indicated that event severity was a key factor in reporting. They varied widely in the degree to which they considered themselves in danger or that an event merited reporting. Some stated that "a threatening situation" was one where they would report, while others indicated that circumstances had to "[get] physical" before a report was made:

> I'd probably have to be beat up pretty good.

> I think each person has a threshold that they could tolerate. For me personally, I don't tolerate a lot of people cursing or saying degrading things to me, or to the staff or anything like that. So, when they cross that line, that's when I will at least document something in the chart that something was said.

> If they were to physically come after me, then yes, that would be something worth me reporting. But just sitting there and cussing me out, I'm not going to report that.

### Intent to Harm

Reporting was positively associated with feeling worried about personal safety at work following a type II

TABLE I. Frequency of Total and Reported Type II Violent Events, Proportion Reported, and Unadjusted Prevalence Ratios (PR) and 95% Confidence Intervals (CI) by Workers' Demographic and Occupational Characteristics: Findings From A Cross-Sectional Survey (n ¼ 2,098)

| | Type II violent event[a] (n) | Event reported[b] % (n) | PR (95% CI)[c] |
|---|---|---|---|
| | 2,098 | 75.0 (1,574) | Ç |
| Study hospital system | | | |
| North Carolina study hospitals | 1,037 | 76.3 (791) | 1.03 (0.98, 1.09) |
| Texas study hospitals (ref) | 1,061 | 73.8 (783) | 1.0 |
| Gender | | | |
| Female | 1,728 | 75.5 (1,304) | 1.05 (0.98, 1.13) |
| Male (ref) | 341 | 71.9 (245) | 1.0 |
| Race | | | |
| Asian | 199 | 71.4 (142) | 0.95 (0.86, 1.04) |
| Black | 361 | 74.5 (269) | 0.99 (0.92, 1.06) |
| Hispanic /Latino | 144 | 71.5 (103) | 0.95 (0.85, 1.06) |
| Other | 52 | 73.1 (38) | 0.97 (0.82, 1.15) |
| Preferred not to answer | 217 | 79.7 (173) | 1.04 (0.96, 1.13) |
| White (ref) | 1,125 | 75.5 (849) | 1.0 |
| Age (years) | | | |
| 18^30 | 449 | 73.1 (328) | 0.97 (0.84, 1.13) |
| 31^40 | 606 | 77.9 (472) | 1.04 (0.90, 1.19) |
| 41^50 | 559 | 74.6 (417) | 0.99 (0.86, 1.14) |
| 51^60 | 398 | 73.1 (291) | 0.97 (0.84, 1.13) |
| 61years and older (ref) | 71 | 74.7(53) | 1.0 |
| Years at hospital | | | |
| <1 | 181 | 69.6 (126) | 0.96 (0.86, 1.07) |
| 1^5 | 918 | 78.7 (717) | 1.07 (1.01, 1.14) |
| 6^10 | 403 | 72.5 (292) | 0.99 (0.91, 1.07) |
| 11þ (ref) | 592 | 73.7 (436) | 1.0 |
| Occupational group | | | |
| Administrative staff (ref) | 177 | 67.8 (120) | 1.0 |
| Food service, housekeeping | 26 | 69.2 (18) | 1.02 (0.78, 1.35) |
| Nurse | 1,063 | 78.9 (839) | 1.16 (1.05, 1.29) |
| Nurses' aide, patient sitter, patient transporter | 246 | 77.6 (191) | 1.15 (1.01, 1.29) |
| Nurse manager, unit manager | 108 | 66.7 (72) | 0.98 (0.83, 1.16) |
| Pharmacist, pharmacy tech | 15 | 53.3 (8) | 0.79 (0.48, 1.28) |
| Physical therapist, medical tech, patient tech | 253 | 67.2 (170) | 0.99 (0.87, 1.13) |
| Physician, Nurse Practitioner, Physician Assistant | 77 | 59.7 (46) | 0.88 (0.71, 1.09) |
| Security guard, police officer | 37 | 86.5 (32) | 1.28 (1.08, 1.50) |
| Social worker, case manager | 41 | 78.1 (32) | 1.15 (0.95, 1.39) |
| Other occupational groups | 44 | 84.1 (37) | 1.24 (1.05, 1.46) |

[a]Type II violence defined as physical assault, physical threat, verbal abuse perpetrated by hospital patient or visitor on a worker.
[b]Events reported could include reporting to coworker, manager/supervisor, security/police, physician, patient medical record, first report of injury system, and/or hospital general safety reporting system.
[c]No differences were observed between unadjusted and adjusted prevalence ratios (PR) in the analysis.

violent event (PR: 1.29; 95% CI: 1.23, 1.35), perceiving that the perpetrator intended to harm them (PR: 1.33; 95% CI: 1.25, 1.41), and use of a weapon (e.g., body part, body fluid, knife, gun) (PR: 1.18; 95% CI: 1.12, 1.24) (Table II). Similarly, 35.3% of respondents did not report because the patient/visitor had no intent to harm (Figure I). Evidence from the focus groups concurred with that of the surveys:

> If they're hitting us on purpose, then I would report [the incident] to the supervisor and security.

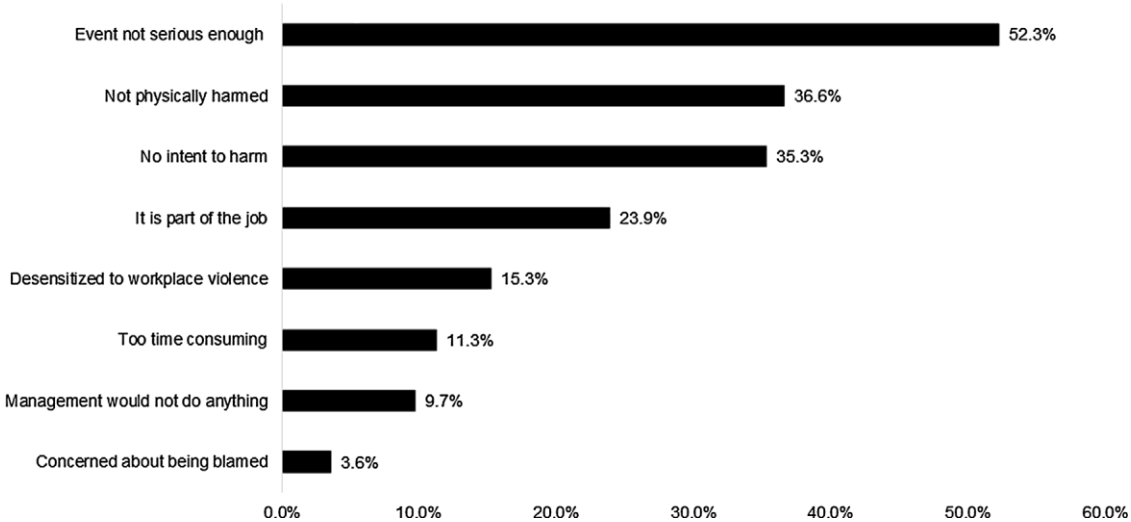


FIGURE 1. Reasons workers did not report type II violent events: findings from a cross-sectional survey (n¼524) (not mutually exclusive).

However, participants indicated that they subjectively differentiated the intent of the perpetrator to harm workers based on the patient's medical condition. Workers expressed compassion for patients with psychiatric diagnoses and less tolerance for patients who were intoxicated or being treated for illicit drug use:

> The drug-seeking people, I don't have a tolerance for that, but if it's true psychiatric patients I have a tendency to have a little bit higher threshold.

> If it's a psych patient and they're not clear, they don't know what they're saying—or an older person that's got dementia, we don't report that because it's based on their condition.

## Part of the Job

Among victims, non-reporting was attributed to accepting violence as part of the job (23.9%) and feeling desensitized to workplace violence (15.3%) (Figure I), which was also a common theme in focus groups and interviews:

> If somebody just came into triage and called me a bitch or something, I don't know if I would necessarily report that because that happens a lot.

> It becomes, well, acceptable as just part of the job. I am going to go home, I am going to clock out and not think about it again.

Nurse managers expressed concern for workers' acceptance of type II violence as part of the job and its influence on reporting:

> Staff do not always tell me [about an event] unless it's really, really bad. I think they hear it so much that they're kind of used to it.

> I think there's quite a bit that goes on that's not reported by the staff.

## Time Consuming

Among survey respondents that did not report, 11.3% indicated not doing so because it was too time consuming, particularly given the frequency of events that occurred (Figure I). In the discussions, staff described lack of time and the burden to officially report events through the FRI or the general hospital safety reporting system:

> Many, many [violent events] happen [in the ED]—we just do not report them in the system. I would have to do the report from home or stay after a 12-hour shift to have time. We just don't have time; we don't even report blood and body fluid exposures.

> People don't report stuff because that's just another place where you have to go to fill something out.

> It's just so commonplace we just put it in the chart. If we tried to do something formal [reporting] for every event it would be too time-consuming.

TABLE II. Reporting of Type II Violent Events By Event Circumstances and Consequences: Frequencies, Unadjusted Prevalence Ratios (PR) and 95% Confidence Intervals (CI) (n¼2,098)

| | n | Reported event[a] % (n) | PR (95% CI) |
|---|---|---|---|
| | 2,098 | 75.0 (1,574) | Ç |
| Type of violence[b] | | | |
| Physical assault | 403 | 82.6 (333) | 1.17 (1.11, 1.24) |
| Physical threat | 394 | 82.2 (324) | 1.17 (1.10, 1.24) |
| Verbal abuse | 1,301 | 70.5 (917) | 1.00 |
| Perpetrator | | | |
| Patient | 1,596 | 74.3 (1,186) | 0.96 (0.91, 1.02) |
| Visitor | 502 | 77.3 (388) | 1.00 |
| Frightened/worried about personal safety | | | |
| Yes | 802 | 87.3 (700) | 1.29 (1.23, 1.35) |
| No | 1,295 | 67.5 (874) | 1.00 |
| Injured in the event | | | |
| Yes | 96 | 90.6 (87) | 1.22 (1.14, 1.31) |
| No | 1,998 | 74.3 (1,484) | 1.00 |
| Weapon used[c] | | | |
| Yes | 630 | 84.3 (531) | 1.18 (1.12, 1.24) |
| No | 1,298 | 71.4 (927) | 1.00 |
| Perceived intent to harm | | | |
| Yes | 368 | 88.6 (326) | 1.33 (1.25, 1.41) |
| Not sure | 777 | 78.9 (613) | 1.18 (1.12, 1.25) |
| No | 950 | 66.6 (633) | 1.00 |
| Alone during the event | | | |
| Yes | 830 | 71.9 (597) | 1.00 |
| No | 1,183 | 78.4 (922) | 1.30 (1.11, 1.51) |

[a]Event reporting could include reporting to coworker, manager/supervisor, security/police, physician, patient medical record, first report of injury system, and/or hospital general safety reporting system.
[b]Type of violence including 3-sub-types that are mutually exclusive and defined as: physical assault (which may also include physical threat and/or verbal abuse); physical threat (which may also include verbal abuse); and verbal abuse only.
[c]Weapons such as gun, knife, body part, body fluid, hospital /room equipment.

## Patient Satisfaction

Among those that did not report, a small proportion (3.6%) indicated that they did not because they were concerned that they would be blamed (Figure I). Nurse managers described, in the discussions, the challenges with patient satisfaction surveys being tied to Medicare/Medicaid reimbursement as part of the Hospital Value Based Purchasing Program [CMS, 2015]. About one-fourth of patients discharged receive a patient satisfaction survey. As one manager described:

> If we've fought with this patient all the time because we're not giving them morphine, and then the question [on the satisfaction survey] says, 'Was my pain relieved?' that's tied to our [patient satisfaction] score, which is tied to value-based purchasing. This is the whole of nursing. We're all getting evaluated on that.

Staff participants indicated that they get feedback consistently about patient satisfaction scores from their managers. One nurse expressed her frustration with the hospital's emphasis on this:

> With customer service and patient satisfaction and everything, it feels like that makes us report it less—we're just supposed to take it.

Rather than file a formal report, participants indicated in the focus groups that they often recorded type II violent events in the patient's medical record to ensure that their side of the story was documented, in the event that a violent patient/visitor complained on a satisfaction survey:

> We just chart whatever happened, and that will be our defense later on if it comes back to us.

> That's why you have to chart if they [patient/visitor] say they're going to make a complaint or whatever. You can have my name. That's fine. I will document everything that you've said and express my side of it—that we attempted every which way but upside down and inside out to appease, and we just can't win.

## Reporting Mechanisms

Workers could report through multiple mechanisms for a single event. Among workers who reported ($n = 1,574$), only a small proportion (9.0%) reported into an established occupational safety and health reporting system including the FRI (1.1%) and/or the hospital safety reporting system (9.0%) (Table III). Participants employed in the NC Hospital System and who reported their event, were more likely to do so through their hospital safety reporting system compared to those in the TX Hospital System (14.3% vs. 3.6%, $P < 0.0001$, data not shown). No differences across hospital systems were noted for reporting into the FRI (0.76% vs. 1.4%, $P = 0.30$, respectively). Among workers who indicated they incurred an injury during the event, and reported, only 11.5% ($n = 10/87$) did so into the FRI, while 46% reported into the hospital safety reporting system. Far more of these injurious events were reported to the workers' manager (71.3%).

The bulk of reporting was to co-workers (59.4%) and managers (49.3%) (Table III). The high proportion of reporting to co-workers was reflected in the focus groups and interviews, in which participants consistently indicated that they typically share this information during shift report and team huddles.

> We have our shift huddle with our staff, and then we go and get [shift] report. That's when that information is communicated.

Workers also passed information to their coworkers and other healthcare providers by documenting the event in the patient medical record, which occurred in 24.2% of reported events.

In the focus group discussions, staff participants consistently debated and/or informed one another about where reporting type II violent events should occur. While some workers stated they would report to a "supervisor, if it's a bad event," others mentioned that they complete a hospital-based safety report "if the event is something significant". Similarly, nurse managers provided disparate information about where workers should report, and at times indicated they did not know. However, if the event was serious, nurse managers described how they informed staff to report directly to them via email, phone text or face-to-face:

> My staff knows that if anybody is verbally abusive, they need to contact me right away so that I can be involved in the situation. I just have a zero tolerance for that.

> I like to tell my staff to email me or write a statement when stuff happens, anything happens, and when I get it via email, I actually have a file, and I have it labeled "Staff Issues/Patient Issues," because I'll forget, but I'll go back to that file… ..But it's nothing official. It's just something I do.

> I want them to report it to me so that we can keep an eye out—because in the ED we have a lot of frequent flyers. They'll come in a lot, and it's the same people doing the same thing.

Variation in patient/visitor circumstances was associated with the disparate recording mechanisms. Of survey respondents who reported their event, security personnel were called for assistance in one-fifth (21.6%) of reported events, which were more likely to be for a physical threat (34.7%) relative to physical assaults (20.8%) or verbal abuse (17.3%) (Table III). The mere presence of security personnel was perceived as effective in de-escalating potentially violent situations, as indicated in the focus group discussions and interviews:

> I don't think [security personnel] have to do anything, except be there in that uniform.

In hospitals where security personnel were allowed to carry weapons, some nurse managers believed it was the threat of force that deescalated tense situations:

> They have their gun in the holster, and those people immediately deflate.

## Follow-Up/Support

A small proportion (9.7%) of non-reporters did not report because they believed that "management would not do anything" (Figure I). Focus group discussions indicated that staff rarely knew of actions taken as a result of a formal report. Staff described feeling that with the current system, they "report into a black hole", rarely receiving notification that their report had been received: "It is pretty clear what to report, but it's not clear what happens to the information when it is reported." In fact,

TABLE III. Frequencies of Where Staff Indicated They Reported the Type II Violent Event by Event Circumstances: Findings From a Cross-Sectional Survey (n ¼ 1,574)

| | | Established reporting systems[a,b] | | Other mechanisms for reporting[b] | | | | |
|---|---|---|---|---|---|---|---|---|
| | n | FRI (%) | HSRS (%) | Patient's medical record (%) | Security called (%) | Unit manager (%) | Coworker (%) | Physician (%) |
| All reported events | 1,574 | 1.1 | 9.0 | 24.2 | 21.6 | 49.3 | 59.4 | 25.6 |
| Type of violence[c] | | | | | | | | |
| Physical assault | 332 | 3.9 | 18.4 | 30.4 | 20.8 | 46.1 | 65.4 | 29.2 |
| Physical threat | 323 | 0 | 10.5 | 32.2 | 34.7 | 50.8 | 61.0 | 34.1 |
| Verbal abuse | 910 | 0.44 | 5.1 | 19.0 | 17.3 | 50.0 | 56.7 | 21.2 |
| Injured in the event | | | | | | | | |
| Yes | 87 | 11.5 | 46.0 | 27.6 | 25.3 | 71.3 | 55.2 | 36.8 |
| No | 1,475 | 0.47 | 6.9 | 24.0 | 21.4 | 48.0 | 59.7 | 25.0 |
| Perpetrator | | | | | | | | |
| Patient | 1,180 | 1.3 | 9.6 | 27.7 | 18.4 | 46.6 | 61.2 | 26.7 |
| Visitor | 385 | 0.52 | 7.3 | 13.3 | 31.4 | 57.6 | 54.0 | 22.1 |
| Frightened/worried about personal safety | | | | | | | | |
| Yes | 696 | 1.7 | 13.5 | 22.7 | 30.9 | 57.8 | 63.5 | 31.5 |
| No | 869 | 0.58 | 5.4 | 21.3 | 14.2 | 42.6 | 56.2 | 20.8 |
| Perceived intent to harm | | | | | | | | |
| Yes | 324 | 3.7 | 17.3 | 36.7 | 30.0 | 61.4 | 62.4 | 33.6 |
| Not sure | 611 | 0.16 | 8.4 | 21.6 | 24.4 | 49.8 | 58.0 | 22.1 |
| No | 628 | 0.64 | 5.3 | 20.1 | 14.5 | 42.7 | 59.1 | 24.8 |
| Alone during the event | | | | | | | | |
| Yes | 597 | 0.84 | 5.9 | 16.0 | 10.4 | 33.7 | 45.5 | 16.4 |
| No | 927 | 0.85 | 7.6 | 19.9 | 20.6 | 38.9 | 43.7 | 20.6 |

[a]Established reporting systems including the FRI first report of injury system, and the HSRS hospital safety reporting system which captures general safety information on patients and workers.
[b]Reporting categories are not mutually exclusive.
[c]Type of violence including 3-sub-types that are mutually exclusive and defined as: physical assault (which may also include physical threat and/or verbal abuse); physical threat (which may also include verbal abuse); and verbal abuse only.

the single most common result of reporting was described by workers as "nothing". Staff described feeling ignored or that their concerns were not viewed as important by the institution. They perceived that the organization would provide them with information only if they were being blamed: "We usually don't hear back unless there's something we end up being at fault for or something." Some also expressed a backlash by administration when they reported, with one nurse indicating:

> The [perpetrator] said, "It's only going to take me one phone call and someone here will be dead." I'm sorry, that's a sentinel event in my book. [Hospital administration] was not happy with me at all [about reporting], but I had the support of witnesses, my coworkers, and my assistant manager.

In contrast, reporting directly to a manager or the charge nurse was viewed as more likely to result in immediate action. Consistently, the staff expressed in the focus groups that they received support from their immediate manager: "Once we've escalated it [to the manager], we call it done. I just step away." Following a violent event, efforts to support victims of type II violence varied. However, workers and managers both stressed in the discussions the importance of listening and responding to individuals who had experienced workplace violence:

> Someone needs to call the injured employee and tell them, "We are listening."

> [Staff] want to know, 'Oh, wow. Somebody heard what I said. Thank you for listening.' People really feel better just knowing that somebody is listening

to them. Just having somebody there to listen, and say, 'I hear your frustrations, and we are trying to come up with a better way to do things.'

## DISCUSSION

We examined the patterns of reporting type II violent events among a large cohort of workers at six U.S. hospitals, including where and to whom they report. A large proportion of survey respondents who were violence victims indicated they had reported the event; however, only a fraction reported the event through the hospitals' FRI system. The study hospitals' general safety reporting systems captured more events than the FRI, but the overall proportion was significantly less than events reported elsewhere. While workers indicated in the focus group discussions that an event would have to be "rather serious" before they would report, a large proportion of workers that incurred an injury during a violent event also bypassed these systems. If data from these traditional occupational injury/safety reporting systems alone were used to examine type II violence in these hospitals, it would suggest that these workers rarely incurred these types of events, and/or rarely reported them, neither of which the case. The reporting of type II violence into these systems is essential to examining rate-based estimates of violence in these settings, across occupational groups and over time. Contextual data surrounding these events must also be captured in these systems for purposes of developing and evaluating workplace violence prevention programs.

Our study respondents, as well as those in prior studies among nursing staff [Findorff et al., 2004; Chapman et al., 2010; Speroni et al., 2014], indicated that workers do report these types of events to their managers. Speroni et al. [2014] recently reported that 73.4% of violent events incurred by nursing staff were reported to managers, while only 15.5% were reported through employee/occupational health. While managers indicated in our focus groups that they expected workers to report these events to them (and two study hospitals had policies requiring this method of reporting), there was no mechanism or policy in place for managers to then report these events into the occupational injury/safety reporting systems. While managers serve a vital role in the management of type II violent events, this reporting process served as a barrier to occupational injury information reaching these reporting systems. Azaroff et al. [2002] recognized this as a common barrier across organizations and emphasized the importance of managers taking the necessary final step in this process by reporting these events into these system.

Workers reporting events through various mechanisms, and the patterns we observed indicated that perpetrator and event circumstances influenced where the report was made—which in some instances seemed appropriate. For example, security was called for a large proportion of physical threats, suggesting they were needed in an urgent situation to assist with de-escalation. Similarly, coworkers were informed of the events during shift report. However, reporting was also influenced, in large part, by their "personal threshold" for determining if and/or where an event should be reported based on their perception of the perpetrator's intent, the patient's health condition, if they were injured in the event, and/or if they felt scared or concerned for their safety. The worker's perception of their situation, rather than explicit workplace violence reporting policies, seemed to drive the patterns of reporting. Staff and managers alike in our study expressed that they did not know when and where the institution expected them to report, especially with respect to if/when they should report into a formal occupational injury/safety reporting system. This disparate reporting pattern has been previously observed in a study that examined type II violence reporting in hospitals in California [Peek-Asa et al., 2007] which they, too, attributed to a lack of standard reporting policies and procedures. Findings from both studies also highlight the need for hospitals to develop methods in which type II violence data that are captured across various systems can be linked and pooled.

Other widely recognized barriers to reporting that we observed in our study included accepting violence as part of the job [Bensley et al., 1997; Duncan et al., 2001; Nachreiner et al., 2007], as well as a lack of post-event follow-up by the institution [Arnetz and Arnetz, 2000; Mayhew and Chappell, 2001]. Post-event investigation and support by the institution are recommended for purposes of reducing the psychological impact for the victim [U.S. DOL, 2015]. Our participants expressed dissatisfaction regarding the lack of follow-up by administration post-reporting, and survey respondents indicated this as a reporting barrier. Findings from the focus groups suggested that managers and workers were left to deal with these events on their own, sending the message from administration that type II violence is, in fact, "part of the job." Workers expressed in focus groups and interviews that their acceptance or tolerance of these events could be due to the institution's expectation that workers focus on patient satisfaction first, as well as their own fears of retribution by administration. This may explain why workers were more likely to report if others were present during the event compared to workers that were alone. Having witnesses may have assuaged their concern for retribution. In a prior study, emergency room nurses who were physically assaulted on the job perceived administration's concerns about customer service scores as a barrier to reporting their injury [Gacki-Smith et al., 2009]. It is important to note that while patient satisfaction scores deterred our participants from formally reporting, they sought to find a way, albeit covertly, to tell "their side of the story" by documenting it in the patient medical record. Their motivation, unfortunately, was to protect themselves rather than seek support from their employer.

This study is not without limitations. Our estimates of reporting patterns may not be representative of reporting for all type II violent events experienced by this cohort given that we asked them about the reporting of the event they perceived to be the most serious. Our findings are consistent, however, with prior findings [Speroni et al., 2014; Findorff et al., 2004]. Four of our six study hospitals did not have explicit type II violence reporting policies or procedures. The prevalence of type II violence, as well as the patterns of reporting, and where workers reported, may be different compared to hospitals that have these workplace violence prevention policies and programs in place. Further, our study was conducted in general medical hospitals, and our findings may reflect reporting patterns specific to these types of hospitals. These factors should be considered before generalizing our findings to other types of healthcare facilities. Our assessment of where workers reported these events is based on their reporting in our study survey. Given the anonymous nature of the survey, we were not able to directly compare findings from our survey data to those based on data from the hospitals' reporting systems. However, among similar occupational groups in the three NC study hospitals, we observed that the number of unique type II violent events captured through workers' compensation, the hospitals' safety reporting system, and the OSHA Log were small (average of 81 events per year, 2004–2009) [Pompeii et al., 2013] relative to the 1,061 events reported in our survey for a 12-month period at these same hospitals (Table I). This disparity lends credence to our survey and focus group findings that the occupational injury/safety systems were not typically used by workers to report events of type II violence. There are several strengths of this study including the large sample size and respectable response rate, as well as the qualitative data that provided important contextual details about reporting patterns. This approach provided insight regarding the disparate nature with which type II violent events are reported, and why traditional occupational injury reporting systems fail to capture a large proportion of events.

## RECOMMENDATIONS

Findings from this study contradict the long-held belief that workers significantly under-report type II violent events. We found that the majority of workers do report, but that reporting happens outside of the formal hospital reporting systems. Findings from this and other studies highlight the need for coordinated surveillance of type II violent events on the part of hospitals, given its high prevalence and potentially devastating effects on workers. The goal of our work is to improve type II violence surveillance, but this cannot be achieved without hospitals having comprehensive workplace violence prevention programs that include the ongoing measurement of these events. Recently, OSHA published "Guidelines for Preventing Workplace Violence for Healthcare and Social Service Workers" [U.S. DOL, 2015], with an emphasis on the importance of a written workplace violence prevention program that includes essential program elements that are dependent on surveillance data. In these guidelines, OSHA recommends using existing and newly collected data to examine specific jobs and tasks with high type II violence rates. The guideline emphasizes the use of data from the OSHA log and workers' compensation, but these systems are populated by, and are dependent on, workers filing an initial report of injury. Further, the criteria of a workplace injury being OSHA recordable or compensable excludes a large number of workplace violence events given that most do not result in lost time from work or require medical treatment. Given the limitations of these traditional occupational injury systems, and the findings from our study, we recommend that as part of their workplace violence prevention program that hospitals include: (i) A stand-alone workplace violence reporting system; and (ii) a written workplace violence reporting policy that supports the use of this reporting system.

### Definition of a Reportable Workplace Violence Event

Within the workplace violence reporting policy, the employer should explicitly state their definition of workplace violence, including any various forms or subtypes of violence (e.g., verbal abuse, physical threat, physical assault, sexual assault) and emphasizing that a physical injury or intent to harm does not need to occur for an event to be deemed reportable. The disparate nature of reporting observed in our study was based, in part, on workers' own perceptions and feelings about whether the event was serious enough to be reported. The policy should instruct workers to report an event when it meets the employer's stated definition of workplace violence. The purpose of this is to ensure that the employer, not the worker, is defining the threshold for when an event should be reported. The definition of workplace violence should also provide clarification that an event should be reported regardless of the perpetrator type (e.g., patient, visitor, patient's family member, or others). While our study focused on type II violent events, hospitals may choose to include violent events perpetrated by others: violence perpetrated by coworkers, worker's family members (e.g., domestic violence that occurs at work), or individuals that have no official business with the hospital that perpetrate violence with criminal intent. If workers are to follow different procedures for reporting violent events by these other perpetrators, then the reporting policy should explicitly state where the workers should report these other events.

## Where to Report a Workplace Violence Event

It is recommended that hospitals include in their workplace violence reporting policy the details about where the worker is expected to report the event. The policy should outline the importance of "formally" reporting an event into a reporting system, in addition to "informally" reporting to a coworkers or manager. As we described, workers reported far more frequently to managers and security personnel than into the FRI or patient safety systems. We suggest that the policy requires managers and/or security personnel, who are informed by a worker about a violent event, to report the event into the system on the part of the worker or in collaboration with the worker. Removing these types of barriers that preclude data from reaching the formal reporting system needs to be considered when developing the workplace violence reporting policy.

## Train Workers About Reporting Procedures

The reporting policy needs to indicate that all workers and managers should be formally trained on when and how to use the reporting system. Training should be provided for newly hired employees, in addition to current workers with designated time periods for required refresher training.

## A Stand-Alone Workplace Violence Reporting System

Hospitals should have a designated system for capturing formal workplace violence reports with coordinated oversight by relevant stakeholders, such as unit supervisors/managers, security personnel, occupational safety and health professionals, and risk management. We recommend that hospitals use a single workplace violence reporting system to avoid confusion on the part of the worker about where to report. In our study, occupational safety captured events through the FRI system, risk management captured events through a patient safety reporting system, and security had a separate system that security officers used to report. OSHA recommends that employers pool their workplace violence data from varied systems; however, the need to pool data for the initial violent event report could be minimized by developing a single system that can capture these events and data elements that will serve multiple hospital departments and services.

A proportion of workers indicated that they did not report the event because it was too time consuming. For purposes of fostering reporting, it would be ideal to design an initial intake form that is short in length, while saving the collection of more in-depth details for a follow-up assessment by management, occupational health, risk management and/or security. This intake form should also include the definition of workplace violence that is stated in the reporting policy. Additional guidance with regard to specific data elements for workplace violence reporting can be found in the CDC Occupational Health Safety Network (OHSN) module related to violence [CDC, 2015; Gomma et al., 2015].

A large proportion of workers reported their events into the electronic medical record (EMR). While not all hospital workers have access to the EMR, for workgroups that do, it would be ideal to have a link to the workplace violence reporting form embedded in the EMR system to ensure easy access, while minimizing the need for reporting or documenting the event in multiple systems.

## Follow-Up Post Reporting

The workplace violence reporting policy should outline the follow-up procedures that occupational health, security, management and others must follow when a report is made. This will provide workers with an understanding of what to expect after they report an event and will avoid workers feeling ignored or that they are "reporting into a black hole." Following-up with workers in a timely manner shows concern and consideration, and will most likely foster workers' willingness to report if/when future violent events occur.

## Evaluating and Updating the Reporting Policy and Reporting System

The workplace violence reporting policy and system should be routinely evaluated for its effectiveness. Similar to the assessment we conducted in this study, we recommend that hospitals and/or unit managers conduct regularly scheduled, online anonymous surveys among workers about their experiences with workplace violence as defined in the hospital's written workplace violence policy. More specifically, they should query workers about recent events that they experienced in a designated time period, if/where they reported the events (formally and informally), and if they received any follow-up from their report. If they did not formally report the event, the worker should be asked to provide the reason for not reporting. Workers should also be assessed for their knowledge about the reporting policy as it pertains to when and where violent events should be reported. Comparing these survey results with what is captured in the formal workplace violence reporting system can provide valuable information about the hospital's success with violent event surveillance, as well as with workplace violence prevention programs and procedures. Findings from this survey, including reasons workers indicated not reporting the event, should be used to update and refine the workplace violence reporting policy and reporting system.

## CONCLUSIONS

Surveillance of type II violence on the part of hospitals is needed given the high prevalence and potentially devastating effects of type II violence on workers. Coordinated efforts across hospital departments and disciplines is essential to the development and implementation of a workplace violence reporting system, workplace violence reporting policies and procedures, as well as pooling other workplace violence data. Efforts should also be coordinated with respect to using these data to develop and evaluate targeted workplace violence prevention procedures and training. It is important to note that many of our recommendations are not new. In 2001, workplace violence experts made a call for improved type II violence surveillance when they indicated, "Without basic information about who is most affected and which prevention measures work in which settings, we cannot move forward in addressing this problem" [Merchant and Lundell, 2001]. The response to this call on the part of hospitals is long overdue.

## AUTHORS' CONTRIBUTIONS

Drs. Pompeii, Schoenfisch, Lipscomb, Dement, and Smith have made substantial contributions to the design of the work, while Dr. Conway has contributed to the data analysis and manuscript writing. All authors have been integrally involved in the interpretation of data in the submitted manuscript. All authors contributed to the drafting the work or revising it critically for important intellectual content. They will remain involved through the final approval of the version to be published; and agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

## DISCLOSURE (AUTHORS)

The authors report no conflicts of interest.

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## DISCLOSURE BY AJIM EDITOR OF RECORD

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# Impact of Hospital Type II Violent Events: Use of Psychotropic Drugs and Mental Health Services

John M. Dement, PhD,[1] Hester J. Lipscomb, PhD,[1] Ashley L. Schoenfisch, PhD,[1þ] and Lisa A. Pompeii, PhD[2]

Background *While violence can adversely affect mental health of victims, repercussions of violence against workers is not as well characterized.*
Materials and Methods *We explored relationships between workplace violent events perpetrated by patients or visitors (Type II) against hospital employees and the employee use of psychotropic medications or mental health services using a data system that linked violent events with health claims.*
Results *Significant associations were observed between reported Type II workplace violent events and employee prescription claims for anti-depressants and anxiolytics combined (RR¼1.45, 95% CI¼1.01–2.33) and anti-depressants alone (RR¼ 1.65, 95% CI¼1.10–2.48). No significant association between reported violent events and health claims for treatment of depression or anxiety was observed.*
Conclusions *Type II violence experienced by hospital workers may lead to increased use of psychotropic drugs, particularly anti-depressants but also anxiolytics. Our results suggest an important role of employee assistance programs in mitigating the psychological consequences of workplace violent events.* Am. J. Ind. Med. 57:627–639, 2014. 

*KEY WORDS: workplace violence (Type II); health care workers; mental health services; psychotropic medications; employee assistance programs*

## INTRODUCTION

It is well-established globally that exposure to violence can adversely affect the mental health of victims including examples from intimate partner violence [Volpe et al., 2012; Dillon et al., 2013], childhood traumatic experiences [Bensley et al., 2003; Hooven et al., 2012], and community violence [Kelly, 2010; Kohrt et al., 2012; Sharkey et al., 2012; Yi et al., 2013] to name a few. Repercussions of workplace violence are less well understood. A large, Danish population-based case-control study of hospitalized patients with affective or stress-related disorders documented increased odds of exposure to workplace violence among both men and women with depression and stress; threats at work were associated with increased risk of depression in males and females [Wieclaw et al., 2006].

Violence against health care workers, including physical assaults and verbal threats, has become a growing public health concern [NIOSH, 2002]. While many events go unreported, a large cross-sectional study of nurses working in various health care settings in Minnesota reported crude rates of physical assault by patients and visitors as high as 13.0 per 100 person-years of work [Gerberich et al., 2005]. As expected, non-physical assault (threats, sexual harassment, and verbal abuse) rates were higher, relative to physical assaults, with 38.4 events per 100 person-years of work.

[1]Divisionof Occupational and Environmental Medicine,Duke University Medical Center, Durham, North Carolina
[2]The University of Texas, School of Public Health, Houston,Texas
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Correspondence to: John M. Dement, Ph.D., Division of Occupational & Environmental Medicine, Department of Community & Family Medicine, Duke University Medical Center, 2200W. Main Street, Suite 400, Durham, NC 27705. E-mail: John.Dement@Duke.edu

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In the hospital setting, violence perpetrated by patients and visitors (Type II violence) is the most common type of reported workplace violence, relative to Type III (worker on worker), and Type IV (domestic violence spilling into the workplace). A variety of mental health effects on workers from Type II violence have been described across several studies [Pompeii et al., 2013]. These include anger and irritation, as well as fear [Fernandes et al., 2002; Findorff et al., 2005; Kowlaenko et al., 2005; Ayranci et al., 2006; El-Gilany et al., 2010]. Workers describe feelings of humiliation and self-blame [Fernandes et al., 2002; Findorff et al., 2005; Ayranci et al., 2006; El-Gilany et al., 2010], and they sometimes consider that reporting such events, even those involving physical violence, is a sign of weakness [Gacki-Smith et al., 2009]. Others report job dissatisfaction, making changes in their place of employment, and even considerations of leaving the health care profession [Fernandes et al., 2002; Kowlaenko et al., 2005; Ayranci et al., 2006; El-Gilany et al., 2010]. Under reporting of workplace violent events in the health care setting likely results in a substantial under estimate of adverse impacts.

Few studies have evaluated the association between exposure to workplace violence and use of mental health services or use of psychotropic medications. Exposure to work-related violence and incident use of anti-depressants, anxiolytics, and hypnotics was recently studied by Madsen et al. [2011]. A cross-sectional sample of 15,246 Danish employees not using psychotropic medications at baseline were linked to a national registry of prescription medication purchases to detect incident use of psychotropic medications over a 3.6 years follow-up period. Exposure to threats of violence or physical violence from patients and co-workers in the previous 12 months was assessed by a questionnaire. Exposure to work-related violence (threats or physical) was found to be associated with purchase of anti-depressants alone (RR ¼ 1.38, 95% CI¼ 1.09–1.75) or in combination with anxiolytics (RR ¼ 1.74, 95% CI ¼ 1.13–2.70). No significant relationship was observed for purchase of hypnotics alone.

The objective of the current analyses was to specifically explore associations between reported Type II workplace violent events in hospitals and victims subsequent use of psychotropic medications or mental health services to treat depression or anxiety.

## MATERIALS AND METHODS

### Study Population Definition and Time at Risk

All data used for these analyses were obtained from the Duke Health and Safety Surveillance System (DHSSS) [Dement et al., 2004]. We have previously reported on the incidence of patient and visitor perpetrated violence (Type II) experienced by health care workers employed in three hospitals during 2004–2009 [Pompeii et al., 2013]. The study population for the current analyses was based on this cohort.

Briefly, human resources' administrative data were used to define the study population at risk. Workers were included if they (i) contributed work hours during 2004 through 2009, (ii) worked as a nurse, nurses' aide, clinical technical worker (with the exception of those working a morgue or animal handling facility), police officer or security worker, and (iii) worked in one of the three health system hospitals. Type II violent events that were physical (versus verbal) in nature were identified using workers' compensation (WC) claims, incident reports in a safety reporting system, and Occupational Safety and Health Administration (OSHA) logs. Events were identified through a review of all text descriptions provided in each of these data sources. Time at risk for calculation of incidence rates was estimated for each follow-up year using data on workers' work schedules (hr/week) and months employed during a given study year and was expressed as full-time-equivalents (FTEs).

For the current analyses the original cohort was restricted to workers with at least 1 month of health plan participation during follow-up period. Cohort members were individually linked to files which defined health insurance participation, health claims, and prescription drug claims for each follow-up month during 2004–2009. All inpatient, outpatient, and pharmacy claims data were abstracted for study members for the period January 2004 through December 2009. Our data does not include health or pharmacy claims incurred as part of workers' compensation claims.

### Identification of Prescriptions for Anti-Depression and Anti-Anxiety Drugs

National Drug Codes (NDC) contained within the line-item pharmacy claims were used to define the number of filled prescriptions for anti-depression and anti-anxiety drugs for each cohort member by month of follow-up. Anti-depressants were based on the National Committee for Quality Assurance (NCQA) list of anti-depression drugs as specified in the 2008 Healthcare Effectiveness Data and Information Set (HEDIS) [NCQA, 2008]. Some anti-depressants are also used for treatment of anxiety; however, benzodiazepines and buspirone are largely used for treatment of anxiety [National Institute of Mental Health, 2012] and these were classified as anxiolytics and considered separate from anti-depressants for some analyses.

In addition to evaluating prescription drug use through counts of pharmacy claims, we also estimated utilization by calculation of days of drug supply. Annual anti-depressant and anxiolytic supply for each cohort member was calculated by summing the days of supply listed for each filled prescription.

### Identification of Mental Health Conditions Using Claims Data

Inpatient and outpatient line-item health claims were used to define mental health services utilization by cohort

members during each year of follow-up. Mental health claims were identified and categorized using the framework developed and evaluated by Frayne et al. [2010] in which a number of algorithms were evaluated to identify mental health conditions based on the *International Classification of Diseases, 9th Revision* (ICD-9) codes found in health claims. A defined a list of ICD-9 codes expected (based on clinical expertise) to have a greater specificity for the presence of mental health conditions was arrived at by a panel of psychologists and psychiatrists using a Delphi technique. A list of these codes is provided in an appendix.

### Stratified Analyses

Because the study population for the current analyses represents a subset of all workers in our prior study, we first assessed the comparability of violent event rates with those reported for the original cohort. Using the current restricted cohort crude reported violent event rates (events per 100 FTE), rate ratios (RR), and 95% confidence intervals (CI) were estimated using univariate Poisson regression, with the natural log of full-time-equivalents as the offset.

Stratified analyses of prescription drugs and mental health services utilization for treatment of depression and anxiety were conducted in a manner comparable to those used for analyses of violent event rates. However, for prescription drugs and mental health services, utilization rates were expressed as health claims or days of drug supply per 100 months of insurance participation (instead of FTE's). Crude rates of utilization, rate ratios (RR), and 95% confidence intervals (CI) were estimated using Poisson regression, with the natural log of months of health plan participation as the offset.

### Multivariate Analyses

We further evaluated the relationship between reported violent events and utilization rates for prescription drugs and mental health services in separate Poisson regression models that controlled for age, race, gender, and year of follow-up. All models included a binomial independent variable indicating occurrence of one or more violent events for cohort members in each follow-up year. To control for a history of anxiety or depression treatment at cohort entry, we developed dichotomous covariates indicating presence of depression or anxiety prescription or mental health claims during the initial 6 months of cohort follow-up. Individuals with claims in the first 6 months of follow-up were classified as having a history of utilization at cohort entry.

Separate models were developed for use of anti-depressants or anxiolytics combined and use of depression or anxiety-related mental health services combined. We also investigated use of anti-depressants and anxiolytics separately in additional models. The initial step in model building was to develop a baseline model incorporating the independent variables age, race, gender, and year of follow-up, interactions of baseline covariates, and the dichotomous covariates indicating presence of depression or anxiety at cohort entry. After the baseline model was defined the binomial independent variable indicating occurrence of one or more violent events was introduced and evaluated. We also explored differential effects of violent events by gender, race, and age through introduction of interactions. Model covariates and interactions were retained if their Type III likelihood ratio statistic was significant ($P < 0.05$) or their inclusion improved model fit by Akaike information criterion (AIC). To account for repeated observations of cohort members over the follow-up period, all final models were based on use of generalized estimating equations (GEE) with an exchangeable correlation structure implemented in the SAS GENMOD procedure.

Further analyses were restricted to individuals with one or more violent events during 2004–2009 in order to investigate use of anti-depressants, anxiolytics and mental health services before and after reported violent events. For each individual, the year of their first reported violent event was determined so that follow-up time could be divided between pre and post first reported violent event. Analyses were again based on GEE methods and were adjusted for age, gender, race, and calendar year and interactions of these covariates. Finally, as part of our sensitivity analyses, an additional model was constructed in which all time for those without a reported violent event was assigned as "pre-event," such that their anti-depressants and anxiolytics utilization rates were included in the baseline rate before an event.

All statistical analyses were conducted using SAS 9.3.

This study was reviewed and approved by the Duke University Health System Institutional Review Board. Study subjects did not sign an informed consent as analyses were conducted using de-identified data as described in our previous publication [Dement et al., 2004].

## RESULTS

### Reported Incidence of Workplace Violence

The study cohort included 9,884 workers who reported 387 Type II workplace physical violent events while working a total of 23,412 full-time-equivalents (FTEs). The 387 violent events were reported by 336 individual workers with the distribution of cases by worker as follows: one (293), two (38), three (2), and four (3). The distribution of reported violent events by data source was: workers' compensation only (79.0%), safety reporting system only (6.7%), OSHA logs (5.2%), and multiple sources (9.1%) and the distribution

of workers' compensation claims by type was: first aid only (54.2%), medical only (39.1%), and 1.1% indemnity (1.1%). While the study cohort is slightly smaller than the original cohort studied by Pompeii et al. [2013], the overall violent event rate of 1.65 per 100 FTEs (95% CI ¼ 1.50–1.83) is comparable to that observed in the larger cohort (RR¼ 1.75, 95% CI¼1.60–1.91). Tables I and II provide comparable analyses of rates and rate ratios by worker demographics, work locations, job titles, and work units to that presented for the original cohort. Rate ratios were lower among females compared to males (RR: 0.80, 95% CI 0.64–1.01) and higher among black workers compared to whites (RR¼ 1.34, 95% CI ¼1.07–1.67). Rates were highest among workers less than 30 years of age and decreased with increasing tenure (Table I). Occupational groups with higher rates included public safety workers (5.09 events per 100 FTEs) and nursing aides (4.29 events per 100 FTEs) compared to inpatient nurses (1.53 events per 100 FTEs) and clinical technical/professional workers (0.19 events per 100 FTEs) (Table II). Work locations with higher rates of violent events included psychiatry, police/security, emergency department, float pool, neurology, adult inpatient medicine, and ICU/CCU.

## Stratified Analyses of Overall Psychotropic Drug and Mental Health Services Utilization

The cohort had a total of 28,935 years of insurance coverage during the follow-up period. Among the whole cohort, 14.8% of workers had a history of anti-depressants or anxiolytics use at cohort entry and 5.1% had a history of using mental services for depression or anxiety. Crude rates (claims per 100 insurance months and days of supply per 100 insurance months) and rate ratios for anti-depressants and anxiolytics combined by time period and cohort demographics are shown in Table III. Medication utilization, measured by both claims for prescriptions filled and days of supply, increased over the study period. Use was substantially higher for females compared to males, was higher for whites compared to blacks and other races, and increased with age.

TABLE I. Incidence Rates, Crude Rate Ratios and 95% Confidence Intervals of Reported Type II Violent Events Over Time and by Worker Demographics, 2004^2009

| | FTEs | Number of events | Rate per100 FTEs | Crude rate ratio | 95% CILB | 95% CIUB |
|---|---|---|---|---|---|---|
| Follow-up year | | | | | | |
| 2004 | 3,443 | 54 | 1.57 | 1.00 | | |
| 2005 | 3,553 | 44 | 1.24 | 0.79 | 0.53 | 1.18 |
| 2006 | 3,762 | 74 | 1.97 | 1.25 | 0.88 | 1.78 |
| 2007 | 3,996 | 68 | 1.70 | 1.08 | 0.76 | 1.55 |
| 2008 | 4,151 | 56 | 1.35 | 0.86 | 0.59 | 1.25 |
| 2009 | 4,507 | 91 | 2.02 | 1.29 | 0.92 | 1.80 |
| Gender | | | | | | |
| Male | 4,842 | 95 | 1.96 | 1.00 | | |
| Female | 18,570 | 292 | 1.57 | 0.80 | 0.64 | 1.01 |
| Age (in years) | | | | | | |
| <30 | 5,227 | 105 | 2.01 | 1.00 | | |
| 30 to <40 | 6,147 | 108 | 1.76 | 0.87 | 0.67 | 1.14 |
| 40 to <50 | 6,189 | 86 | 1.39 | 0.69 | 0.52 | 0.92 |
| 50 to <60 | 4,824 | 73 | 1.51 | 0.75 | 0.56 | 1.02 |
| 60þ | 1,024 | 15 | 1.47 | 0.73 | 0.42 | 1.25 |
| Tenure (in years) | | | | | | |
| <5 | 11,895 | 260 | 2.19 | 1.00 | | |
| 5 to <10 | 4,664 | 62 | 1.33 | 0.61 | 0.46 | 0.80 |
| 10 to <15 | 2,205 | 24 | 1.09 | 0.50 | 0.33 | 0.76 |
| 15þ | 4,648 | 41 | 0.88 | 0.40 | 0.29 | 0.56 |
| Race | | | | | | |
| White | 15,849 | 241 | 1.52 | 1.00 | | |
| Black | 5,610 | 114 | 2.03 | 1.34 | 1.07 | 1.67 |
| Other[a] | 1,949 | 32 | 1.64 | 1.08 | 0.75 | 1.56 |

[a]Includes Hispanic, American Indian or Alaskan Native, Native Hawaiian or other Pacific Islander, Asian.

TABLE II. Incidence Rates and 95% Confidence Intervals of Reported Type II Violent Events by Characteristics of Employment, 2004^2009

| | FTEs | Number of events | Rate per100 FTEs | 95% CILB | 95% CIUB |
|---|---|---|---|---|---|
| Work location | | | | | |
| University | 658 | 35 | 5.42 | 3.82 | 7.42 |
| Medical center | 16,382 | 254 | 1.55 | 1.37 | 1.75 |
| Community hospital 1 | 3,873 | 65 | 1.68 | 1.32 | 2.14 |
| Community hospital 2 | 2,499 | 33 | 1.32 | 0.94 | 1.86 |
| Job title | | | | | |
| Public safety | 766 | 39 | 5.09 | 3.72 | 6.97 |
| Nursing aides | 2,124 | 91 | 4.29 | 3.49 | 5.26 |
| Nursing inpatient | 11,935 | 209 | 1.75 | 1.53 | 2.01 |
| Respiratory care | 757 | 12 | 1.58 | 0.90 | 2.79 |
| Physical /occup therapy | 662 | 13 | 1.96 | 1.14 | 3.38 |
| Radiology & imaging | 1,880 | 13 | 0.69 | 0.40 | 1.19 |
| Other clinical tech /prof | 5,284 | 10 | 0.19 | 0.10 | 0.35 |
| Work unit[a] | | | | | |
| Psychiatry | 215 | 17 | 7.90 | 4.91 | 12.71 |
| Police/security | 724 | 39 | 5.39 | 3.94 | 7.38 |
| Float pool | 498 | 27 | 5.42 | 3.71 | 7.89 |
| Emergency | 1,512 | 76 | 4.04 | 3.14 | 5.19 |
| Neurology | 756 | 24 | 3.17 | 2.13 | 4.74 |
| Other adult inpatient | 4,336 | 97 | 2.24 | 1.83 | 2.73 |
| ICU/CCU | 1,683 | 38 | 2.26 | 1.64 | 3.10 |
| Respiratory care | 779 | 13 | 1.67 | 0.97 | 2.87 |
| PT/OT/rehab | 855 | 12 | 1.40 | 0.80 | 2.47 |

[a]Data not shown for units with rates <1per100 FTE: anesthesia, surgery, radiology, pediatrics, women's, social work, pharmacy, parking /transportation.

The increase in utilization by age appeared to plateau for those older than 60 years.

Rates and rate ratios for health care claims related to depression and anxiety are presented in Table IV. Unlike drug utilization, rates of health insurance claims (claims per 100 insurance months) were substantially higher in 2004 than in subsequent years; however, patterns in rates of health plan utilization for depression and anxiety by race and gender were similar to those observed for prescription anti-depressants and anxiolytics.

## Reported Violent Events and Anti-Depression and Anxiolytic Prescription Drug Use

Results of the multivariate Poisson regression models for use of anti-depressants or anxiolytics combined are shown in Table V. Race, gender, age, calendar time period, and baseline history of anti-depressants or anxiolytics use at cohort entry were all significant predictors of drug use over the study period. Significant interactions were observed for age and gender and age and race and these interaction terms were retained in the baseline models. After adjustment for all baseline covariates and interactions, workers experiencing workplace violent events were found to use significantly more anti-depressants and anxiolytics combined based on claims (RR ¼ 1.45, 95% CI ¼ 1.00–2.33) and increased utilization based on days of supply (RR ¼ 1.33, 95% CI ¼ 0.95–1.87). For both models AIC was marginally improved by inclusion of interaction terms for violent events and race and violent events and gender. Trends in the rate ratios are suggestive of a greater impact of workplace violence on use of anti-depressants and anxiolytics combined for females compared to males, as well as for black and other race groups compared to whites.

Models were developed to examine the relationship between workplace violence and outcomes of use anti-depressants and anxiolytics separately. Results for anti-depressant drug use alone are shown in Table VI and demonstrate a stronger association than the model which considered anti-depressants and anxiolytics together. Workplace violent events were significantly associated with use of anti-depressants as measured by drug claims (RR ¼ 1.65, 95% CI ¼ 1.10–2.28) or days of drug supply (RR ¼ 1.45, 95% CI ¼ 1.02–2.06). For anti-depressants, the impact of workplace violent events was greater for males (RR ¼ 1.76, 95% CI ¼ 1.08–2.88) compared to females (RR ¼ 1.55, 95% CI ¼ 1.04–2.33); however, utilization rate ratios based on

TABLE III. Anti-Depressant and Anxiolytic Prescription Drug Claim Rates, Days of Supply Rates, Crude Rate Ratios and 95% Confidence Intervals OverTime and by Worker Demographics, 2004^2009

| | | Anti-depressant and anxiolytic drug claims | | | | | Anti-depressant and anxiolytic drug supply | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Insurance months | Number of claims | Rate per 100 months | Crude rate ratio | 95% CI LB | 95% CI UB | Total days of supply | Rate per 100 months | Crude rate ratio | 95% CI LB | 95% CI UB |
| Follow-up year | | | | | | | | | | | |
| 2004 | 44,168 | 4,826 | 10.93 | 1.00 | | | 165,797 | 375.4 | 1.00 | | |
| 2005 | 45,214 | 5,135 | 11.36 | 1.04 | 1.00 | 1.08 | 166,728 | 368.8 | 0.98 | 0.98 | 0.99 |
| 2006 | 48,117 | 6,368 | 13.23 | 1.21 | 1.17 | 1.26 | 205,930 | 428.0 | 1.14 | 1.13 | 1.15 |
| 2007 | 51,084 | 7,166 | 14.03 | 1.28 | 1.24 | 1.33 | 236,595 | 463.2 | 1.23 | 1.23 | 1.24 |
| 2008 | 53,661 | 8,043 | 14.99 | 1.37 | 1.32 | 1.42 | 262,760 | 489.7 | 1.30 | 1.30 | 1.31 |
| 2009 | 56,884 | 8,406 | 14.78 | 1.35 | 1.31 | 1.40 | 282,888 | 497.3 | 1.33 | 1.32 | 1.33 |
| Gender | | | | | | | | | | | |
| Male | 59,435 | 5,579 | 9.39 | 1.00 | | | 188,553 | 317.2 | 1.00 | | |
| Female | 239,693 | 34,365 | 14.34 | 1.53 | 1.48 | 1.57 | 1,132,145 | 472.3 | 1.49 | 1.48 | 1.50 |
| Age (in years) | | | | | | | | | | | |
| <30 | 65,265 | 4,786 | 7.33 | 1.00 | | | 138,136 | 211.7 | 1.00 | | |
| 30 to <40 | 77,852 | 8,786 | 11.29 | 1.54 | 1.49 | 1.59 | 269,890 | 346.7 | 1.64 | 1.63 | 1.65 |
| 40 to <50 | 78,950 | 13,135 | 16.64 | 2.27 | 2.19 | 2.34 | 444,578 | 563.1 | 2.66 | 2.64 | 2.68 |
| 50 to <60 | 62,183 | 11,056 | 17.78 | 2.42 | 2.34 | 2.51 | 390,407 | 627.8 | 2.97 | 2.95 | 2.98 |
| 60þ | 14,878 | 2,181 | 14.66 | 2.00 | 1.90 | 2.10 | 14,878 | 522.2 | 2.47 | 2.44 | 2.49 |
| Race | | | | | | | | | | | |
| White | 203,675 | 34,899 | 17.13 | 1.00 | | | 1,173,019 | 575.9 | 1.00 | | |
| Black | 70,719 | 4,256 | 6.02 | 0.35 | 0.34 | 0.36 | 122,374 | 173.0 | 0.30 | 0.28 | 0.31 |
| Other[a] | 24,685 | 789 | 3.20 | 0.19 | 0.17 | 0.20 | 25,305 | 102.5 | 0.18 | 0.17 | 0.19 |

[a]Includes Hispanic, American Indian or Alaskan Native, Native Hawaiian or other Pacific Islander, Asian.

days of drug supply were comparable. The results by race suggest a greater effect of violent events on anti-depressant use alone for black and other race groups compared to effects observed for a mix of anti-depressants and anxiolytics together. We further explored differential effects of violent events for those with a history of anti-depressant use at baseline through inclusion of an interaction term in the final anti-depressant claims model; however, the interaction was not significant ($P$¼0.15), suggesting a more general effect rather than an effect restricted to those with pre-existing use of anti-depressants.

A separate model (not shown) was developed for anxiolytics. After control for baseline model covariates and interactions, the rates of anxiolytic use was elevated among those experiencing violent events; however, statistical significance was not achieved for drug claims (RR ¼ 1.19, 95% CI ¼ 0.96–1.47) or days of supply of anti-anxiety drugs (RR ¼ 1.21, 0.97–1.51).

## Reported Violent Events and Health Care Utilization for Depression or Anxiety

The relationship between violent events and health claims meeting the ICD-9 study definition of depression or anxiety was explored in a multivariate model that included race, gender, age, calendar time period, history of depression or anxiety at cohort entry, and interactions for age violence and gender violence. After adjustment for all baseline covariates and interactions, workers reporting workplace violence did not have a health insurance claims rate ratio significantly different from 1.0 (RR¼ 0.67, 95% CI¼ 0.36–1.24). Additionally, no significant associations were observed by gender or race.

## Multivariate Analyses Based on Those Reporting Type II Workplace Violent Events

In Tables VII and VIII results based on individuals with one or more reported violent events are presented. These results are similar but more positive than the prior results summarized in Table V using the whole cohort. Inclusion of tenure and occupational group did not significantly alter these results. Like the earlier analyses, use of anxiolytics alone was not significantly associated with violent events nor was health care claims for depression or anxiety. Analyses classifying all time for those without a reported violent event as "pre-event"

TABLE IV. Depression and Anxiety Health Claim Rates, Crude Rate Ratios and 95% Confidence Intervals Over Time and by Worker Demographics, 2004^2009

| | | Depression and anxiety health claims | | | | |
|---|---|---|---|---|---|---|
| | Insurance months | Number of claims | Rate per100 months | Crude rate ratio | 95% CILB | 95% CIUB |
| Follow-up year | | | | | | |
| 2004 | 44,168 | 4,017 | 9.09 | 1.00 | | |
| 2005 | 45,214 | 2,657 | 5.88 | 0.65 | 0.62 | 0.68 |
| 2006 | 48,117 | 2,919 | 6.07 | 0.67 | 0.64 | 0.70 |
| 2007 | 51,084 | 2,788 | 5.46 | 0.60 | 0.57 | 0.63 |
| 2008 | 53,661 | 3,693 | 6.88 | 0.76 | 0.72 | 0.79 |
| 2009 | 56,884 | 4,128 | 7.26 | 0.80 | 0.76 | 0.83 |
| Gender | | | | | | |
| Male | 59,435 | 3,080 | 5.18 | 1.00 | | |
| Female | 239,693 | 17,122 | 7.14 | 1.38 | 1.33 | 1.43 |
| Age (in years) | | | | | | |
| <30 | 65,265 | 3,181 | 4.87 | 1.00 | | |
| 30 to <40 | 77,852 | 5,707 | 7.33 | 1.50 | 1.44 | 1.57 |
| 40 to <50 | 78,950 | 6,373 | 8.07 | 1.66 | 1.59 | 1.73 |
| 50 to <60 | 62,183 | 4,178 | 6.72 | 1.38 | 1.32 | 1.44 |
| 60þ | 14,878 | 763 | 5.13 | 1.05 | 0.97 | 1.14 |
| Race | | | | | | |
| White | 203,675 | 17,554 | 6.45 | 1.00 | | |
| Black | 70,719 | 2,014 | 6.27 | 0.33 | 0.32 | 0.35 |
| Other[a] | 24,685 | 634 | 7.82 | 0.30 | 0.28 | 0.32 |

[a]Includes Hispanic, American Indian or Alaskan Native, Native Hawaiian or other Pacific Islander, Asian.

time resulted in similar findings (not shown); rate ratios were slightly lower as would be expected since some individuals included in the baseline rate likely had an unreported violent event and were thus misclassified.

In order to explore patterns of utilization over time an additional model was developed whereby follow-up time was partitioned into the year prior to the first reported violent event, year of the violent event and three additional years following the violent event. Rate ratios were adjusted for age, gender, race, time period, and use of anti-depressant or anxiolytic drugs at cohort entry. A GEE model failed to converge and results from the non-GEE Poisson regression

TABLE V. Multivariate Model Adjusted Rate Ratios for Anti-Depressant and Anxiolytic Drug Claims Combined and Days of Supply by Violent Event Category

| | Anti-depressant and anxiolytic drug claims | | | Anti-depressant and anxiolytic drug days of supply | | |
|---|---|---|---|---|---|---|
| | Adjusted rate ratio[a] | 95% CILB | 95% CIUB | Adjusted rate ratio[a] | 95% CILB | 95% CIUB |
| Overall | 1.45 | 1.01 | 2.33 | 1.33 | 0.95 | 1.87 |
| Gender | | | | | | |
| Male | 1.39 | 0.88 | 2.21 | 1.22 | 0.79 | 1.90 |
| Female | 1.51 | 1.03 | 2.22 | 1.45 | 1.03 | 2.03 |
| Race | | | | | | |
| White | 0.98 | 0.79 | 1.22 | 1.04 | 0.84 | 1.29 |
| Black | 1.60 | 0.84 | 3.06 | 1.21 | 0.65 | 2.25 |
| Other | 1.94 | 0.80 | 4.67 | 1.87 | 0.89 | 3.91 |

[a]GEEPoisson regression rate ratios comparingrates for those reporting a violent event to those not reporting a violent event adjusted for age, gender, race, calendar year, and history of depression or anxiety at cohort entry.

TABLE VI. Multivariate Model Adjusted Rate Ratios for Anti-Depressant Drug Claims Alone and Days of Supply by Violent Event Category

| | Anti-depressant drug claims | | | Anti-depressant drug days of supply | | |
|---|---|---|---|---|---|---|
| | Adjusted rate ratio[a] | 95% CILB | 95% CIUB | Adjusted rate ratio[a] | 95% CILB | 95% CIUB |
| Overall | 1.65 | 1.10 | 2.48 | 1.45 | 1.02 | 2.06 |
| Gender | | | | | | |
| Male | 1.76 | 1.08 | 2.88 | 1.44 | 0.93 | 2.25 |
| Female | 1.55 | 1.04 | 2.33 | 1.45 | 1.02 | 2.05 |
| Race | | | | | | |
| White | 1.08 | 0.88 | 1.33 | 1.13 | 0.93 | 1.38 |
| Black | 1.80 | 0.93 | 3.47 | 1.27 | 0.68 | 2.35 |
| Other | 2.34 | 0.88 | 6.22 | 2.11 | 0.94 | 4.73 |

[a]GEEPoisson regression rate ratios comparingrates for those reporting a violent event to those not reporting a violent event adjusted for age, gender, race, calendar year, and history of depression or anxiety at cohort entry.

TABLE VII. Multivariate Model Adjusted Rate Ratios for Anti-Depressant and Anxiolytic Drug Claims Combined and Days of Supply by Time Period for Employees Experiencing a Violent Event

| | Anti-depressant and anxiolytic drug claims | | | Anti-depressant and anxiolytic drug days of supply | | |
|---|---|---|---|---|---|---|
| | Adjusted rate ratio[a] | 95% CILB | 95% CIUB | Adjusted rate ratio[a] | 95% CILB | 95% CIUB |
| Overall | 1.88 | 1.30 | 2.71 | 1.65 | 1.22 | 2.24 |
| Gender | | | | | | |
| Male | 2.11 | 1.19 | 3.72 | 1.77 | 1.12 | 2.79 |
| Female | 1.67 | 1.20 | 2.33 | 1.55 | 1.17 | 2.05 |
| Race | | | | | | |
| White | 1.28 | 0.91 | 1.80 | 1.31 | 1.00 | 1.72 |
| Black | 1.97 | 0.98 | 3.98 | 1.62 | 1.01 | 2.25 |
| Other | 2.60 | 1.52 | 4.46 | 2.12 | 1.21 | 3.72 |

[a]GEE Poisson regression rate ratios comparing rates before and after first reported violent event adjusted for age, gender, race, and calendar year.

TABLE VIII. Multivariate Model Adjusted Rate Ratios for Anti-Depressant Drug Claims Alone and Days of Supply by Time Period for Employees Experiencing a Violent Event

| | Anti-depressant drug claims | | | Anti-depressant drug days of supply | | |
|---|---|---|---|---|---|---|
| | Adjusted rate ratio[a] | 95% CILB | 95% CIUB | Adjusted rate ratio[a] | 95% CILB | 95% CIUB |
| Overall | 2.11 | 1.45 | 3.05 | 1.72 | 1.28 | 2.32 |
| Gender | | | | | | |
| Male | 2.58 | 1.51 | 4.41 | 1.95 | 1.24 | 3.08 |
| Female | 1.72 | 1.20 | 2.46 | 1.52 | 1.16 | 2.00 |
| Race | | | | | | |
| White | 1.45 | 1.04 | 2.00 | 1.39 | 1.06 | 1.84 |
| Black | 2.01 | 0.87 | 4.71 | 1.60 | 1.00 | 2.58 |
| Other | 3.19 | 2.03 | 5.01 | 2.29 | 1.38 | 3.82 |

[a]GEE Poisson regression rate ratios comparing rates before and after first reported violent event adjusted for age, gender, race, and calendar year.

model are shown in Figure 1. Using the year prior to a reported violent event as the reference cell in the multivariate model, increasing rate ratios for anti-depressants or anxiolytics combined (days of supply) were observed through the second year following the violent event. While these results should be interpreted cautiously due to small numbers and limited follow-up time post-event, mean drug utilization rates in the third year following violent events approach pre-event values.

## Sensitivity Analyses

Several additional analyses were undertaken to test sensitivity of the Poisson models to inclusion or exclusion of covariates. To test the adequacy of control for depression or anti-anxiety drug use at cohort entry, we ran additional analyses that restricted the cohort to those without evidence of use of anti-depressants or anxiolytics at baseline. The model based on the restricted cohort included 314 violence cases and 25,044 months of insurance eligibility. The GEE model failed to converge; however, the same non-GEE model but with scaled deviance to account for slight over dispersion resulted in a larger rate ratio for anti-depressant or anxiolytic claims combined (RR¼2.13, 95% CI¼1.16–3.91) and comparable trends by gender and race. A comparable model for days of supply for anti-depressants or anxiolytics also resulted in a slightly stronger association (RR¼2.04, 95% CI ¼1.11–3.76). These results suggest some degree of over control for baseline drug use in our models; however, the GEE model results are preferred due to their superior control for correlated repeated measures.

We did not include occupational group or tenure in our models. We observed significantly different incidence rates of violent events by occupational group and hypothesized that inclusion of occupational group would inappropriately dampen associations between drug use and violent events. To test this hypothesis, we ran the same baseline models for anti-depressant and anxiolytic drug claims and days of drug supply with inclusion of a covariate for occupational group. The rate ratio for anti-depressant or anxiolytic claims combined was slightly reduced (1.43, 95% CI ¼0.99–2.08) as was the rate ratio for days of drug supply (RR¼1.32, 95% CI ¼0.95–1.83). Similar results were obtained for the models for anti-depressant claims alone (RR¼ 1.64, 95% CI¼1.10–2.45) and days of supply (RR¼ 1.45, 95% CI¼ 1.01–2.05). Inclusion of tenure in the models resulted in negligible changes in the rate ratios.

Similarly, occupation and tenure were not included in the models based on analyses of data restricted to those workers reporting violent events (Tables VII and VIII). However, we ran additional models that did include both occupation and tenure in the same models. Only minor changes in the rate ratios for anti-depressants or anxiolytics combined (RR ¼1.89, 95% CI ¼1.30–2.75) or anti-depressants alone (RR ½2.14, 95% CI ¼1.46–3.14) were observed. Likewise, ratio ratios and patterns by race and gender were changed only slightly.

Our results support an association between use of psychotropic drugs, particularly anti-depressants but also anxiolytics, and Type II workplace violent events. However, a strong statistical association is only one component of evidence needed to establish a causal relationship and some

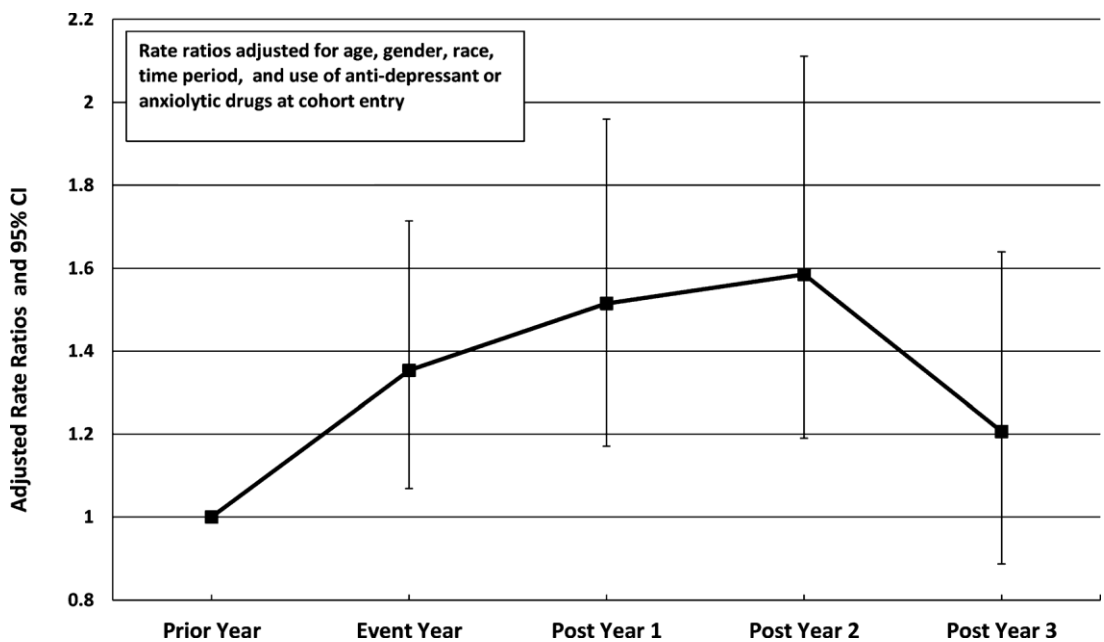


FIGURE1. Anti-depressant and anxiolytic days of supply rate ratios before and after workplace violent events.

might suggest that the observed association is driven by a tendency of those with pre-existing anxiety or depression to report violent events. The analyses restricted to those reporting violent events (Tables VII and VIII) partially address this question as we observed significantly increased drug utilization following violent events, thus both increased risk and temporality were established. In addition, the crude utilization rate of anti-depressives or anxiolytics combined among workers with no reported violent event (13.26 claims per 100 insurance months) was actually higher than the pre-violent event drug utilization rate among workers reporting a violent event (10.34 claims per 100 insurance months). Finally, we developed a Poisson regression model for workplace violent events that included the covariates listed in Tables I and II. For each cohort member, a baseline (before a reported violent event) rate of utilization of anti-depressants or anxiolytics combined was calculated and included in the model. We found that the baseline use of anti-depressants or anxiolytics combined was not associated with the rate of reporting violent events ($P¼0.45$). Collectively, these analyses suggest that workers with pre-existing depression or anxiety, as measured by drug claims, were not more prone to report violence.

## DISCUSSION

By individually linking health care claims with reports of exposure to Type II workplace violence among a large cohort of hospital workers we documented that Type II violence involving physical harm experienced by health care workers was associated with increased utilization of prescription drugs to treat depression and anxiety. Stronger associations were observed for use of anti-depressants than for anxiolytics. Interestingly, the rate ratio comparing the rate of anti-depressive drug use (alone) among those who reported exposure to workplace violence to the rate of those who did not was higher for males than it was for females. Additional research in other health care settings is needed to confirm this pattern.

We observed no significant association between reported Type II workplace violence and health care utilization claims (e.g., psychotherapy sessions) for depression or anxiety. Several factors may account for this lack of association. First, employees at the three study hospitals have access to a long-standing Employee Assistance Program (EAP) staffed by licensed mental health professionals. This EAP utilizes a consultation and short-term counseling model of up to eight sessions. Access to this service is encouraged and is without charge. Employees who experience Type II workplace violence can generally be offered a same day appointment. In fiscal year 2011–2012, the EAP enrolled 1,220 new clients and conducted 3,815 counseling sessions. The most frequent problems assessed by the EAP were emotional (anxiety, depression, grief, and stress) accounting for 34% of enrollees. Visits to the EAP were not captured in the health claims used for the current analyses, nor was any treatment that might have been secured through workers' compensation. Secondly, there is a growing trend for primary care providers to treat minor depression and anxiety. Pratt et al. [2011] noted that less than one-half of persons taking multiple anti-depressants had been seen by a mental health professional in the past year, indicating significant prescribing of these medications by other health providers, notably primary care providers. These observations taken together are consistent with our findings of increased use of anti-depressants and anxiolytics—without impact on mental health claims for care of depression or anxiety—among hospital workers who reported work-related violent events. The importance of an effective EAP as a component of secondary and tertiary prevention to reduce or mitigate adverse consequences of Type II violent events is recognized in the literature and incorporated into OSHA "Guidelines for Preventing Workplace Violence for Health Care & Social Service Workers" [OSHA, 2004].

Reports from several largely cross-sectional studies have documented associations between work-related violence and a number of outcomes including psychological stress, depression, anxiety, fatigue, job dissatisfaction, and work absence [Rogers and Kelloway, 1997; Menckel and Viitasara, 2002; Collins and Long, 2003; Hogh et al., 2003; Findorff et al., 2004; Gerberich et al., 2004; Magnavita, 2013]. These reports were not limited to Type II violence among health care workers, but they demonstrate global relevance to the work we report here on effects of work-related violence.

The most frequently reported consequences of physical and non-physical workplace violence among nurses in the U.S. were frustration, anger, fear/anxiety/stress, and irritability [Gerberich et al., 2004]. Among nurses in Turkey, the major effects of verbal and physical abuse were reported to be "disturbed mental health" and headache [Celik et al., 2007]. In a 15-month follow-up study of 5,076 Norwegian nurses' aides, frequent exposure to threats and violence was strongly associated with increased psychological stress [Eriksen et al., 2006]. It is noteworthy that significant effects were reported for verbal threats as well as physical assault. In fact, in one report higher proportions of nurses who had experienced verbal threats reported frustration (61%), anger (60%), or fear and anxiety (40%), compared to those who experienced physical violence (46%, 33%, and 23%, respectively) [Gerberich et al., 2004].

The associations we observed between exposure to workplace violence and use of anti-depressants and anxiolytics are comparable to those observed by Madsen et al. [2011]. While their measure of workplace violence exposure was based on self-reported data for the prior 12-month period, their risk ratios were 1.38 and 1.74, respectively, for use of anti-depressants alone and use of both anti-depressants and anxiolytics. Like our study, the association of workplace

violence appeared stronger for use of anti-depressants than for anxiolytics.

Our study has several strengths and weaknesses. The current longitudinal analyses have a number of distinct advantages over previous cross-sectional analyses and included a reasonably large cohort of health care workers who were followed over a 6-year period. Events of workplace violence were identified using multiple reporting systems [Pompeii et al., 2013] and we were able to link reported events to health care claims experience on an individual basis. None-the-less, underreporting of workplace violence is a significant problem in surveillance systems and ours is no exception. Underreporting would result in some misclassification, which, if non-differential, typically dampens observed exposure-response relationships. Further, we expect that more serious events—specifically those involving physical assault—have a greater probability of being reported [Gerberich et al., 2004; Pompeii et al., 2013]; therefore, the patterns we observed may largely apply to more significant episodes of violence rather than all workplace violence. Additionally, our analyses did not include information concerning prescription drug use that may have been contained in workers' compensation case medical files; however, inclusion of any such data would increase rather than decrease our estimates of risk and would not alter study conclusions.

This study was based on a dynamic occupational cohort rather than an inception cohort restricted to members entering without a prior history of depression or anxiety. To help control for this issue in our statistical models, we used the first 6 months of cohort follow-up to define dichotomous variables for use of drugs or health claims for anxiety and depression at cohort entry. Our sensitivity analyses suggest that adequate control was achieved in our statistical models for prior drug or mental health claim history, with perhaps even some degree of over control. Our results are further supported by the analyses based only on those who reported violent events where we compared drug and mental health service use before and after reported violent events.

Observed patterns of anti-depressants or anxiolytics following workplace violent events suggest that usage peaks in about the second year with a decline to near pre-event rates in about the third year. These temporal patterns of anti-depressant use are consistent with American College of Physicians guidelines concerning use of second-generation anti-depressants to treat depressive disorders [Qaseem et al., 2008].

We performed a number of analyses to determine if prior use of anti-depressants and anxiolytics was associated with a greater tendency to report workplace violence. Given the observed crude rates of anti-depressive drug use at baseline and results of the Poisson models for reported violence rates, it is also reasonable to conclude that workers in this cohort with prior use of anti-depressive medications or anti-depressives plus anxiolytics were not more likely to report a violent event than those without prior psychotropic drug use.

While outside the scope of our study, we have conducted some preliminary analyses of employee turnover rates following violent events. The post-event turnover rate among workers experiencing a violent event involving first aid treatment only was 5.2% per year while the rate among those experiencing events requiring medical treatment or lost work time was 6.1% per year. Neither turnover rate was statistically different from the rate observed among workers not reporting a violent event (6.8% per year).

## CONCLUSIONS

Despite the recognition that violence in health care is a growing public health concern, there has been very little research on the effects of such violence on the workforce. Through longitudinal analyses, we were able to observe that use of prescription drugs to treat depression and/or anxiety increased following reports of Type II violence involving physical harm—perpetrated by patients or visitors against staff—against hospital employees. The relationship of Type II workplace violence and use of anti-depressants appears stronger than that for anxiolytics alone and results suggest differential effects by gender and race. Collectively, these findings add to evidence of a causal link rather than just an association.

Increased drug use persisted for approximately 3 years following a workplace violent event, consistent with typical treatment patterns for depression and anxiety. Our estimates of patterns of drug use following violent events are somewhat imprecise and longer follow-up of this cohort, or other large work groups, is needed to further delineate longer term drug use and treatment patterns.

Given problems in retaining adequate health care staff, the findings have potential significance for workers and patients. Some higher risk work units are targets of ongoing efforts to identify risk factors as well as appropriate prevention/mitigation strategies.

We did not observe an association between Type II violence on use of mental health services for treatment of depression and anxiety through the employer provided health plans. However, we want to be clear that we are not suggesting drug treatment in the absence of MH counseling. In fact, we attribute this lack of effect, at least in part, to presence of a long-standing and well utilized EAP program which provided professional mental health counseling at no cost. While primary prevention of workplace violent events is most important, professional mental health counseling is a key component of secondary and tertiary prevention to minimize the effects of workplace violence.

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Table AI International Classification of Diseases, 9th Revision (ICD-9) Codes Used to Define Mental Health Conditions [Frayne et al., 2010][1]

| | |
|---|---|
| Depressive disorder | 29620^29625, 29630^29635, 29650^29655, 3004x, 3090x, 30928, 311xx |
| Anxiety | 30000^30002, 30021^30023, 30029, 3003x, 3083x, 30924, 30981 |

[1] The subset of ICD-9 codes used in algorithm G (Delphi panel approach) published by Frayne et al. [2010].

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# An Urgent Need to Understand and Address the Safety and Well-Being of Hospital "Sitters"

Ashley L. Schoenfisch, PhD, MSPH,[1,2] Lisa A. Pompeii, PhD,[3] Hester J. Lipscomb, PhD,[2] Claudia D. Smith, PhD, RN, NE-BC,[4] Mudita Upadhyaya, MPH,[5] and John M. Dement, PhD[2]

Background *Hospital sitters provide continuous observation of patients at risk of harming themselves or others. Little is known about sitters' occupational safety and well-being, including experiences with patient/visitor-perpetrated violence (type II).*
Methods *Data from surveys, focus groups, individual interviews at six U.S. hospitals were used to characterize the prevalence of and circumstance surrounding type II violence against sitters, as well as broader issues related to sitter use.*
Results *Sitter respondents had a high 12-month prevalence of physical assault, physical threat, and verbal abuse compared to other workers in the hospital setting. Sitters and other staff indicated the need for clarification of sitters' roles regarding patient care and sitter well-being (e.g., calling for assistance, taking lunch/restroom breaks), training of sitters in personal safety and de-escalation, methods to communicate patient/visitor behaviors, and unit-level support.*
Conclusions *The burden of type II violence against hospital sitters is concerning. Policies surrounding sitters' roles and violence prevention training are urgently needed.*
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*KEY WORDS: type II violence; sitters; mixed-methods; workplace violence; constant observation*

## INTRODUCTION

Hospitals are faced with the challenge of providing quality care for patients who have the potential to harm themselves or others. Monitoring and managing these patients may include the use of compartmentalized rooms or lock-down ability, use of security personnel and systems, "flagging" medical records of high-risk patients, and the use of physical and/or chemical restraints. There are concerns, however, surrounding the use of these approaches. For example, "flagging" patient records may be stigmatizing to patients by the healthcare worker, or may pose a threat to patient privacy. In addition, flags may not be accessible to all workers who interact with the high-risk patient such as nurses' aides, housekeepers, and dietary workers. The use of seclusion, physical restraint, and chemical restraint is considered unnecessary and potentially harmful by several national patient advocacy stakeholder groups [Worley et al., 2000].

In the acute care hospital setting, there is a growing emphasis on the provision of care for geriatric patients and patients with mental health diagnoses [Nagamine et al., 2006; Honberg et al., 2011]. Related concerns of self-harm (e.g., suicide) and unintentional injury (e.g., fall) predicate the use of custodial or therapeutic interventions; acute care

[1]Duke University School of Nursing, Durham, North Carolina
[2]Division of Occupational and Environmental Medicine Duke, University Medical Center, Durham, North Carolina
[3]School of Public Health, University of Texas Health Sciences Center at Houston, Houston, Texas
[4]CHI St. Luke's Health - Baylor St. Luke's Medical Center, Houston, Texas
[5]Division of Management, Policy and Community Health, School of Public Health, The University of Texas Medical Center, Houston, Texas
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Correspondence to: Ashley L. Schoenfisch, PhD, MSPH, Duke University School of Nursing, Elizabeth C. Clipp Research Building, 311 Trent Drive, Durham, North Carolina 27710. E-mail: ashley.schoenfisch@duke.edu

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hospitals may rely on constant observation of these and other at-risk patients. Although constant observation may be carried out by a variety of provider types (e.g., nurses, security personnel, nurses' aides, other paid employees, volunteers, family members), it is generally the unskilled or untrained hospital worker who fill this role. In the United States, these workers are often referred to as "sitters."

Sitters' roles may strictly involve direct observation of the patient, or they may include care tasks such as checking vitals or bathing the patient, suggesting the job title of "sitter" is a misnomer. They are also referred to as "constant observers," "observation assistants," "patient attendants," "patient care attendants," "patient safety attendants," "specials," "activity companions," and "therapeutic companions" [Wheeler and Houston, 2005; Dick et al., 2009; Nadler-Moodie et al., 2009; Harding 2010; Weeks 2011; Wiggins et al., 2012].

Currently, there are no national guidelines or regulations for employers specific to use of sitters or sitters' health and safety on the job. There is considerable variability in sitters' job descriptions, their purpose (i.e., custodial versus therapeutic) and the definition of patients needing observation (i.e., "appropriate" sitter use) [Wiggins et al., 2012; Carr, 2013]. The sitters' role generally has been described as the provision of continuous, one-on-one observation of "patients who are confused, may be harmful to themselves or others, and whose behavior is unpredictable or difficult to manage" [Talley et al., 1990] "for the purpose of providing a safer environment for the patient" [Harding, 2010]. Specifically, sitters care for a patient population who include those who are anxious/agitated, drug-impaired, withdrawing from alcohol, mentally ill (to include those who have been involuntarily committed to a mental institution), suicidal, in behavioral restraints, in seclusion, a suspected victim of child abuse/neglect, at high risk of falling, delirious/demented, neurologically impaired, and vision/hearing impaired [Nadler-Moodie et al., 2009].

The literature about sitter use in the hospital setting is largely focused on concerns related to costs associated with constant patient observation [Turjanica et al., 1998; Worley et al., 2000; Park and Alistair, 2001; Nadler-Moodie et al., 2009; Harding, 2010; Rausch and Bjorklund., 2010; Rochefort et al., 2011, 2012; Weeks, 2011; Adams and Kaplow, 2012; Spiva et al., 2012; Wiggins et al., 2012]. The use of sitters has also been examined as it relates to patient outcomes such as falls, pressure ulcers, need for restraints, and patient satisfaction [Boswell et al., 2001; Park and Alistair, 2001; Tzeng and Yin 2007; Tzeng et al., 2008; Harding 2010; Wiggins et al., 2012]. Likewise, the sitters' role in easing the job demands of the registered nurse has also been studied [Rochefort et al., 2011]. Current evidence of sitters' effects on these diverse measures is conflicting, and the paucity of detail on the type of training sitters receive is noteworthy [Carr 2013]. Particularly striking is the absence of research focused on the occupational safety, health, and well-being of sitters. One concern of sitters, as well as all health care workers in the hospital setting [NIOSH 2002; Pompeii et al., 2013; Pompeii et al., 2015], is their risk of experiencing violence perpetrated by patients or visitors (type II violence).

During the course of a larger study focused on the surveillance of type II violent events in the hospital setting, sitters emerged as an occupational group that warranted further examination. The purpose of this report is to describe hospital sitters' roles and responsibilities, as well as training and experiences with type II violence. Additionally, we examined aspects of sitters' work organization, including unit level support and job satisfaction.

## METHODS

### Study Setting and Population

This study took place in two large US healthcare systems (one in North Carolina, one in Texas) that each consist of one large medical center and two smaller community hospitals. These hospitals vary by size, location, and types of communities they serve. Combined, they employ approximately 11,000 workers who likely interact with patients or visitors as part of their job. According to the policies at the study hospitals, sitters are responsible for providing a safe environment for a patient (or patients) requiring continuous observation, performing required patient care within their scope, and reporting observations to the appropriate direct patient care provider.

The policies surrounding sitter assignment, skill set, and expectations vary across the health systems. In one of the study health systems, sitters were primarily certified nurses' aides who come from the hospitals' internal float pools or external contract services. In the other health system, sitters typically do not have training as a certified nurses' aide. Rather, they attend an orientation session on patient safety maintenance. In both health systems, other staff may function as a sitter as needed, including unit secretaries, dietary workers, housekeeping staff, or "light duty" staff. Sitter requests may be assigned, re-evaluated, and discontinued by an authorized individual (e.g., a physician, nurse, other designee). Utilization is required for patients who are suicidal, involuntarily committed to a mental health institution, in behavioral restraint/seclusion, or is a victim of suspected child abuse/neglect.

Prior to requesting a sitter, the assigned registered nurse (RN) is responsible for assessing the patient's physical condition and mental status, attempting other interventions (e.g., diversional activities, environmental management, behavioral management, modified staffing), and considering the use of restraint. Prior to a sitter's shift, the assigned RN is responsible for giving report to the sitter, establishing the

sitter's job responsibilities, and establishing the sitter's lunch/restroom break schedule. Sitters are responsible for completing patient "handoff" forms as a way of communicating with the unit nursing staff various elements of their shift: number of times the sitter prevented the patient from pulling on tubes or from falling, activities provided to the patient (e.g., linen change, bathing, oral care, vital signs), etc. Sitters' shifts are typically eight or 12 hr in length.

## Data Collection

### *Surveys*

A brief, 5 min, anonymous, voluntary survey was emailed to hospital staff at the study hospitals in September 2011 (*Blitz* survey), along with information about the study and the investigators' contact information. Paper-copy and Spanish versions of surveys were made available, as well. Participants were asked about their experiences with type II violence (including sub-types of physical assault, physical threat, and verbal abuse) in their career and in the previous 12 months. Among those who experienced type II violence in the previous 12 months, we asked them for details surrounding the one event (if they had more than one) they deemed the most serious: perpetrator type (i.e., patient, visitor), perceived contributing factors, location, weapon(s) involved, and whether/how the event was reported. Participants were also asked to describe (using free text) "any concerns or comments about your personal safety at work regarding how you are treated by others."

Among the 5,385 *Blitz* survey respondents, a small number (n¼41 total: n ¼19 from the TX health care system and n¼22 from the NC health care system) were identified as sitters. Although this group was small, we observed a significantly high proportion, relative to other occupational groups, of type II violence in the previous 12-months among those who responded. This led us to gather additional data through focus groups and key informant interviews among sitters, nurses, sitter managers, and nurse managers.

### *Focus groups and key informant interviews*

Focus groups and key informant interviews conducted as part of the larger study were designed to capture information about type II violence relevant to several broad domains pertaining to workplace violence: magnitude of the problem, nature of events, existing policies and procedures, training, mitigation, reporting, communication, and recommendations. A semi-structured guide was used to begin our discussion and probe for details. Participants were encouraged to highlight additional issues as well. Between April 2012 and December 2013, 21 focus groups and seven key informant interviews were conducted with a total of 110 participants. Although the initial data collection guides were not focused on the safety and roles of sitters, discussions surrounding the use of sitters were nearly ubiquitous across all sessions. To examine this work group more closely, several focus groups and interviews (n¼10) were conducted specifically with sitters and/or their managers. However, data from all focus groups and interviews were analyzed to understand—from the perspective of sitters and others (e.g., nurses, security personnel, managers)—sitters' roles, training, interaction with co-workers and patients, job satisfaction, experience with violent events (including reporting), and recommendations for improvement.

Participants were recruited through email invitation and verbally by study staff. Managers assisted in extending invitations to sitters. All focus group participants were compensated $25. All sessions were audio-recorded following written informed consent of participants. Within each session, participants were assigned a number to allow transcription of the audio files without using participants' names.

## Analysis

Survey data were collected in survey software (http://www.qualtrics.com) stored in Microsoft ACCESS [Microsoft Corporation, 2010] and imported into SAS v9.3 software [SAS Institute Inc., 2011] for cleaning and analysis. The frequency and percent distribution of the study population was described by age, gender, race, and occupational history. Participants' career and 12-month prevalence of type II violence, as well as the proportion of these events with characteristics of interest (e.g., perpetrator type, worker alone, object/weapon used against the sitter), were calculated.

Content analysis [Patton, 2002] of the transcribed focus group and key informant interview text data was performed using qualitative data analysis software [QSR International Pty Ltd., 2012]. Initial coding followed the domains outlined in the focus group or key informant interview guide. Additional relevant constructs that arose in the analysis were labeled and cataloged as well.

All procedures were approved by the Institutional Review Boards at Duke University Medical Center and at The University of Texas Health Science Center at Houston.

# RESULTS

## Surveys

Among the survey respondents who worked as a sitter (n¼41), 24% were less than 30 years old, most were female (88%), and 80% were non-white. One-fifth of sitter participants spent less than a year working in their profession. Eighty percent of sitters indicated they had

experienced some form of type II violence in their career. While at work in the hospital setting in the prior 12 months, 76% of sitter respondents experienced at least one event of type II violence. More specifically, among sitter respondents, 61% experienced physical assault, 63% experienced physical threat, and 73% experienced verbal abuse. Among the 31 sitters who experienced type II violence in the previous 12 months the number of events by sub-type was 69 physical assaults, 77 physical threats, and 119 events of verbal abuse. These are not mutually exclusive events.

When asked to describe their most serious event in the previous 12 months, sitters indicated the perpetrator was often a patient (94%), and the sitter was alone with the perpetrator in two-thirds of the events (65%). Among events in which patients were the perpetrator, characteristics perceived by sitters to contribute to the events commonly included patients being disoriented (66%), having behavioral issues (45%), sundowning (34%), or being drunk/on drugs (31%). Nearly three-fourths of sitters' events involved an object used against the sitter, commonly a body part(s) (e.g., fist, nails) (n ¼ 19) or bodily fluids (n ¼ 7).

## Focus Groups, Key Informant Interviews, and Open-ended Survey Questions

Focus groups and interviews provided an understanding of domains of interest: sitters' experiences with patient and visitor perpetrated violence (e.g., magnitude of the problem, nature of events, related policies, and procedures), training, mitigation, communication, event reporting, and recommendations. Several constructs not initially probed were identified as well: sitters' role and responsibilities, patient satisfaction, unit-level co-worker support/rapport.

*The role of the sitter*. Sitters' roles were described as lacking clarity from the perspective of both sitters and unit staff, and this concern extended beyond violence mitigation and prevention. Sitters noted:

> "*There is no discussion about what kind of behavior is expected from a sitter. They tell you, 'Go sit with this patient.. .' Is it ok to talk to them? Should I be ignoring them? Am I like the security?*"

> "*I think there's sometimes some confusion, between say, nursing and the medical staff over what sitters are even allowed to do. There are things that we simply are not allowed to do.*"

> "*The number one word that a lot of sitters been told '[keeping the patient safe is] why you're there.' But most of them don't understand why they're there, what actions to take and not take if you are in a situation. I mean, if the patient's becoming combative to the point that they're hitting, then kicking, then spitting, what actions do you take?*"

Sometimes other hospital workers were required to sit with a patient in the event a sitter was not available: A nurse manager recounted:

> "*I have a new unit secretary who has been pulled to sit. One of the first things she said to me is 'I have not been trained on how to handle this patient if they decide to get up. If they start falling, what do I do?' So I had to make some phone calls to figure out what…*"

Among the sitters who were nurses' aides, there was satisfaction in being able to use their clinical skillset as part of caring for a sitter case.

> Sitter: "*Being able to tell a nurse the level of training I have, I actually get to kind of take over a lot of patient care for the day, which is really nice.*"

> Sitter manager: "*You know, the more exciting things you give them to do, besides you know go empty the bedpan… They are going to be more engaged.*"

Sitters' importance in providing bedside care on a unit was relayed by managers in the context of the hospital systems' emphasis on patient and visitor satisfaction:

> Sitter manager: "*The day to day stuff [nurses] have to do, it takes away from them actually being able to be at the bedside of the patient. And being able to have a nursing care assistant.. . can be huge. You know, we are getting graded on our patient satisfaction scores. I mean, I think [sitters are] the group we need to tap into, I really do, to help us succeed our targets.*"

However, sitters stressed the importance of allowing a patient to do as much for them self as they can:

> Sitter: "*If we take away all their abilities, then they are not going to do anything. Because if I could just lay here and I know somebody's going to wash my butt, feed me, do all this, and do all that, I'm just going to lay here and flip my TV channels. That's getting waited on hand and foot. We are not maids, we're aides*."

*Experiences with violence*. Sitters described dangerous and inappropriate situations involving verbal abuse, physical

threats, physical assault, and sexual assault—some with little warning and some without adequate backup from unit staff.

> Sitter: "*I have been hit by a patient before and it was not pretty. The young lady was nice to me the whole eight hours and at the last 30 minutes she just walked up to me and said, 'I don't like you. I'll kick your ass.' I looked back. Was she looking at somebody else but me? Because we were cool. She said she wanted popcorn, and I went and got her popcorn out of the vending machine, bought her sodas, and washed her hair, and when I turned around she was standing in my face and she is like, 'I'll knock you out,' and she actually swung, and she hit me*."

> Sitter: "*When I came in, the sitter that I was taking over for had not even left, [the male patient] touched me on my butt and was smiling. I told him, "Don't do that."... I had to hold him to try to prevent him from falling out of bed. He tried it again, so I had to call the nurse... I told her, 'I can't take care of this guy. They need to get a guy for him, because he is touching me inappropriately.*"

> Sitter: "*This [patient] hated me so much because of how I was trying to prevent him from falling... So this guy was so mad, he smashed my food and that was about maybe nine hours after I had been there. I was so tired. So he smiled and his hand is full of poop because he has been messing around with stuff and you know. Then I told him... 'Look at what you have done to my food..' Then the nurse came in and that is when they relieved me for break, after nine hours*."

*Communication and violent event reporting.* Having an understanding of patients' and visitors' behavior was viewed as an important aspect of coming onto a shift. However, the "handoff" form was not well-utilized, and there was inconsistency in the initial amount and type of information communicated verbally.

> Sitter (speaking about communicating with another sitter): "*We do our best ... besides the basics of what we need to do for the patient, the other information that's more personal... watch out for this certain family member. There are some times when it is not communicated, and there are some situations I feel like nurses know a little bit more personal what's going on with that patient that as sitters we don't get. And we kind of face that head on when we're sitting in that room... .*"

> Unit nurse: "*Sitters, um, sitters are harder. Usually we try to catch them before they go in the room so we can kind of give them a little bit of what's going on because otherwise we kind of have to stand at the doorway and talk about it, in which case we... can't really talk as much about the social aspects*."

> Nurse manager: "*We don't give the sitters information that they need to know to sit with the patient... The nurses don't do a good job consistently at letting the sitter know the real reason why they're there*."

Communication with nurses during a shift was viewed as frustrating and ineffective by sitters. A sitter described her assignment to a patient at high risk for falls. When the patient tried to get out of bed, the sitter tried to redirect him verbally, and then tried to use physical reinforcement, only to agitate the patient. Then the sitter called the nurse:

> "*The nurse came and said... 'He'll listen to you if you [verbally] redirect him.' I said, 'well ma'am, I just tried to re-direct him and he wouldn't listen to me.' [She said] 'Well, what are you [sitters] here for?' [I said] 'I cannot physically hold this guy down in the bed.' She said 'Well, just let him fall then.' ... This ain't no kind of conversation to be having. We need to kind of figure out what we going to do about this situation here. [The patient] don't want me holding him down, and I don't want to get myself in no trouble. [The nurse] is not cooperating with me, so in a situation like that, I want to know, what do I do?*"

Another sitter recounted:

> "*One time I told the nurse that the patient had hit me and she said, 'Well tell me if he hits you again.' I'm like... 'I've got glasses on here. I can't afford new glasses.'*"

Sitters commonly described incident reporting as something that followed the "chain of command." Reporting of events through more official channels was lacking.

> Sitter: "*I have never reported any of my events. Like one time I was bitten, but she did not break my skin. I just had little marks, so I didn't really feel the need... Even with the guy I worked with last week... he did not really physically touch me. Though he charged at me and people had to stop him... there was not really anything to report.*"

Sitter managers: "*I don't know if they use [the safety reporting system] as much as the other units, but you know, they have access to it and they know that it's there... A lot of the [float pool] staff send emails or they will tell me verbally...*"

Sitter: "*Now, if they were to physically come after me, that'd be another issue. And then yes, that would be something worth me reporting. But just sitting there and cussing me out because they're just whatever, I'm not going to report that*."

*Training*. At the study hospitals, there is an orientation process for nurses' aides, including those in the float pool, who serve as sitters. It reviews written sitter "do and don't" rules as well as protocols specific to certain types of patients (e.g., suicidal). None of the formal training received by sitters, however, is specific to violence recognition, mitigation, or prevention. At one hospital, a manager included a session on dealing with a difficult patient or nurse as part of workers' annual "skills blitz." At another hospital, a unit-level manager spoke of providing informal training to sitters on their unit in de-escalation techniques and safety skills.

When asked how they would prepare a new sitter coming onto their unit, sitters noted "be prepared for anything," "expect the unexpected," "come in here with your armor on," "come in with an open mind," "it's only 12 hr," "tomorrow is a new day" and "whatever doesn't go perfectly, then it's just an opportunity to learn something." They often spoke about learning on the job, and noted "over the course of time you'll learn how to deal with certain situations."

Clinicians and unit leaders were more forthcoming about the urgency of the need for sitters to be trained in violence recognition, mitigation, and prevention:

Manager: "*The sitters are the least trained individuals in this hospital. And they are the ones who are really, really on the front lines. There are times when I will go in, and I will see a [psychiatric] patient who is really scary, and I'm like 'If this guy decides to go for [the sitter's] throat, [the sitter's] not going to get out of the room. They're not going to be able to call for help. They're going to be dead*."

Physician: "*Ours are sent there [to the ED] to take care of those [psychiatric] patients, without that official training*."

Managers also highlighted barriers to such training for sitters (and nurses' aides in general). Specifically, they described a lack of institutional and unit-level support for continuing education for nurses' aides, in contrast to that provided for nurses and physicians:

Sitter manager: "*There are no courses funded by [the hospital] for nursing care assistants*."

Sitter manager: "*It is a huge challenge to get the units to let the nursing care assistants away from the unit to go to an hour class or an hour meeting. Now they cover for the nurses, but it's like the unit is going to fall apart if the nursing care assistant goes*."

Sitter manager: "*I think that alone speaks volumes that you can allow that... we budget time [for training] for nurses but we don't for nurses' aides. What kind of message does that send?*"

*Job satisfaction and team integration.* When asked if they would rather be a nurses' aide in the float pool or on a unit, sitters were clear about enjoying the "challenge" and "diversity" of the work provided through being a float pool staff member, which included being a sitter. They also recognized the challenges in their work, and they recounted situations in which others recognized it as well:

Sitter: "*Not that it is okay, but we know when we go on a unit we are going to get the not-so-good assignments, and we just know how to deal with that, and we move on*."

Sitter: "*We had five sitter patients, and we had taken up two [each] at the same time, and the nurse said 'I don't know how you're doing it, but you guys are holding it together. Good job!'*"

Sitter: "*I've had some nurses that will say, 'Hey, it's going to be a rough one, but we'll get through it.' I love when I get those kinds of nurses... You know, they come in and help you*.

When prompted for comments and concerns about their own personal safety at work regarding how they are treated by others, sitters' responses related to their perceived lack of integration into the unit team and its effect on their safety and job satisfaction:

Sitter: "*At times I feel that I'm looked over and not heard, especially when something of importance is being addressed to the RN or MD*."

Sitter: "*Coworkers (nurses and nursing assistants) pretty consistently assume that because one works for the float pool, one is incompetent and [they] make comments to that effect. These comments are sometimes hurtful, but more often just discouraging...*"

Sitter: "*My concern is the nursing staff leaving you alone to deal with the situation. They assume that since we are sitting in the room with the patient that they do not need to check on us to make sure that we are okay*."

Sitters' managers were more forthcoming about the difficulties of sitters' work on a unit, including sitters' lack of appropriate work breaks (e.g., for a meal or to go to the restroom).

Sitter manager: "*[Sitters] kind of feel like the low man on the totem pole*."

Sitter manager: "*[Nurses] don't treat [sitters] like they are there to help them. You know, it can be very, just not kind*."

Sitter manager: "*They do the grunt work, and then they don't get treated with any kind of level of respect. They may not feel like they are part of the team or get kudos when it's needed*."

Sitter manager: "*On a 12-hour shift, [sitters] don't get a lunch break because the units will not give them a lunch break.. .they can't even go use the bathroom. They can't leave the patient. They can't use the patient's bathroom. So they are dealing with a lot of challenges that I don't think [nurses] realize is unfair to the person who is doing the work*."

At one hospital, a "lunch relief team" had been established to provide dedicated time for a sitter to leave the unit to eat. Notably, breaks during sitters' 12 hr shifts were referred to by sitters as "health breaks" and "mental breaks:" One sitter indicated, "After you've been hit, punched, kicked for so long.. .You can only take so much."

*Recommendations*. Sitters expressed several recommendations for improvement: improve communication between sitters and unit staff, limit personal belongings that visitors may bring into a patient's room, lunch and restroom breaks at realistic times (e.g., not at the very end of a 12 hr shift), and de-escalation and physical release training. One participant placed these needed efforts in the broader context: "It is the responsibility of the hospital to ensure that we are being protected and that we have the skills and tools we need to protect our patients."

## DISCUSSION

To our knowledge, this study is the first to examine hospital sitters' work-related safety and well-being, with emphasis on their experiences related to patient and visitor perpetrated violence. In the study hospitals, a relatively high proportion of sitters who responded to the survey experienced physical assault, physical threats, and verbal abuse by patients and visitors. In the previous 12 months, 76% of these sitter respondents experienced type II violence compared to 64% of security/police, 54% of nurses, 46% of physicians/physician assistants/nurse practitioners, 45% of social workers/case managers, and 42% of nursing unit managers [Pompeii et al., 2015]. A similar pattern held across subtypes of type II violence. Compared to survey participants as a whole, sitters' events were more likely to occur in a patient room/exam room (90% versus 72%), involve a patient perpetrator (94% versus 76%), and involve an object used as a weapon against the worker (72% versus 30%). Sitters were also more likely to be alone with the perpetrator when the event occurred (65% versus 40%).

Despite ambiguity in the details of sitters' job responsibilities, there was consistency across study participants that sitters' overarching role was to protect the patient—even without adequate tools, training, and resources to do so. Protection of the patient sometimes came at the expense of sitters' own safety and well-being, as well as that of their personal belongings.

Sitters and sitters' managers described the need for support and respect from staff on the patient care units. Sitters' efforts to seek assistance from unit-level staff—for crisis situations, as well as for required lunch and restroom breaks—were not always effective. They described being left alone to deal with challenging situations, disregarded after voicing concerns (related to both personal and patient safety), and disrespected as an occupational group by patients, visitors, and hospital staff. They perceived that the physical and mental intensity of their work was not commonly recognized by nursing staff. The concerns of this predominantly female workgroup, typically centrally managed, bear striking similarities to those described of hospital cleaners nearly two decades ago [Messing, 1998]. Placed at the bottom of the hierarchy—"the low man on the totem pole" as one study participant characterized—cleaners and their work were described as "invisible" and their tasks perceived by others as "undemanding." Yet, their function—like that of hospital sitters—is essential. Specifically in this study, sitters' took pride in the patient care they provided, and the importance of their job was suggested to have important implications on patient and visitor satisfaction (i.e., "customer service").

Related to concerns about lack of hospital unit support, there is limited institutional-level focus on providing sitters with appropriate training to recognize violence, de-escalate situations, and maintain personal safety. This situation is both unfortunate and ironic, given that sitters are on the front lines and routinely are assigned to care for patients often known to be aggressive or potentially aggressive. Education addressing violence was available at the study hospitals.

However, without continuing education funding or protected time to engage in such opportunities, these classes were generally inaccessible to sitters. In some cases, the burden of developing and delivering training—including training specific to workplace violence—was carried out, voluntarily, by sitter managers.

The literature on sitter training is sparse. An evaluation of a one-hour training program for sitters, nursing staff, and managers focused on sitters' roles, symptom recognition, and risk assessment showed not only clinical and financial improvements related to sitter use; it allowed sitters to become a more integral part of the treatment planning team [Ragaisis and Wedler, 1997]. Further, in a study of volunteer sitters in the UK, a lack of adequate training was linked to higher sitter turnover [Franks et al., 1997]. In a recent review of the role of sitters in the care of patients with delirium, Carr (2013) suggests "adequate training for sitters is crucial for clinical, ethical, and financial reasons. Inadequate training for the management of aggressive or agitated patients could put sitters, the patient, and staff at danger and has legal consequences" (p. 34).

It is notable that compared to all survey participants, sitters were younger (68% were ≤40 years old, compared to 43% of all survey participants) and had relatively few years of experience in their role (20% of sitters worked less than a year in their profession, compared to 7% of all survey participants) [Pompeii et al., 2015]. Based on discussion with managers at one study hospital, turnover among hospital sitters was 11% in 2012. In a study from the UK [MacKay and Paterson Cassells, 2005], constant observers' experience—gained through years on the job and formal training—was viewed as a key component of conducting risk-assessments and making subsequent decisions. Inexperience was seen as a reason to exclude certain nurses or assistants from undertaking a constant observation role, citing the Nursing, and Midwifery Council's (2002) Code of Professional Conduct: "a professional requirement in any nursing endeavor is to possess the knowledge and skills that are compatible with the demands of the task" (p. 465).

There are no guidelines or regulations specific to the use of sitters or sitters' safety and health. However, there are broader national guidelines aimed at the prevention of violence in the hospital setting. Occupational Safety and Health Administration (OSHA) guidelines [US Department of Labor Occupational Safety and Health Administration, 2015] to prevent workplace violence in hospitals include training and education in "the risk factors for violence in the health care environment" and "control measures available to prevent violence incidents." Specifically, they note "training should include skills in aggressive behavior identification and management, especially for staff working in the mental health and emergency departments." Additionally, the Joint Commission (2012) revised Standard PC.01.01.01 related to patient flow through the emergency department: "If a patient is boarded while awaiting care for emotional illness and/or the effects of alcoholism or substance abuse, the hospital provides orientation and training to any clinical and nonclinical staff caring for such patients in effective and safe care, treatment, and services (for example, medication protocols, de-escalation techniques)" [abbreviated and emphasis added] [The Joint Commission, 2012]. It will be important to understand what changes have been made in hospitals in terms of such recommended and required training for sitters who are sent to this setting to provide for patients' safety.

Despite calmly talking about their experiences of dangerous and overtly egregious situations in the focus group discussions, sitters reported in the survey that they felt frightened or worried about their own personal safety in nearly two-thirds of events described—a proportion higher than that observed among all hospital study participants (38%) [Pompeii et al., 2015]. The effect of the reported violent events on the job satisfaction and mental health of hospital sitters is concerning. In prior analyses of workers' health and safety data at study hospitals in NC, an association was observed between experiencing a type II violent event and workers' subsequent prescriptions for anti-depressant and anti-anxiety medication [Dement et al., 2014]. Although the nature of these secondary data precludes our ability to examine these concerns among sitters as an occupational group, the overall findings suggest the need to examine the effects of sitters' job exposures on their mental well-being.

From an epidemiological perspective, the occupational safety and health of hospital sitters can be particularly challenging to study. They may have a job title of "nurses' aide," making their work-related events not easily discerned from other nurses' aides in existing sources of occupational safety and health data. Further, under-reporting of sitters' experiences with violence in the "official" channels hampers data collection efforts. Finally, sitters' assignments are often highly mobile; many are managed centrally in a hospital's float pool or contracted, and they are routinely sent to different units. We were able to capture important details about sitters' experiences with type II violence through our survey. Although the sample size was small and precluded our ability to do more in-depth analyses, the data suggest sitters are at high risk of type II violence compared to other direct patient care groups in the hospital setting. Further, the survey data informed our larger assessment through qualitative measures that provided contextual details with respect to the risk of workplace violence that sitters face.

The qualitative information gathered from several work groups, across six hospitals, provided a perspective of sitters' work and risk for type II violence that would not otherwise be captured through a cross-sectional survey.

There has been tremendous growth in the understanding of violence in the health care sector over the past two decades. Yet, the lack of information about sitters'

occupational safety and health is striking. Continued efforts are needed to build on the understanding of their work, safety, and well-being, as well as to inform the development and implementation of effective interventions. In so doing, hospitals should not ignore or delay the provision of basic tools that sitters need to recognize and respond to known work challenges in the hospital setting.

## CONCLUSION

Hospital sitters are an integral part of hospitals' provision of safe patient care at the bedside. Although there have been efforts to reduce the use of sitters from an economic perspective, the average patient profile is increasingly marked by elderly patients and patients with mental health issues. Hospitals have come to rely on the important role of sitters to ensure the safety of these and other at-risk patients. This research suggests the urgent need for a better understanding of the sitter's role from an occupational safety and health perspective. Institutionally-supported policies that focus on sitters' safety, well-being, and human rights are crucial. Such policies will provide guidance to sitters, as well as to the managers who supervise them and managers of patient care units where sitters work. In line with national guidelines, the policies should: clearly define the role of the sitter; recognize sitters as an integral part of a patient care unit; and address the provision of accessible and appropriate education for sitters to learn about identifying, managing, and preventing events of violent behavior, as well as remaining safe during such events.

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## SURVEY LINK

BlitzSurvey https://sphuth.az1.qualtrics.com/SE/?SID=SV_4HnFxN9KxTs5RTD

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## E.6. Patient and Visitor Perpetrated Violence on Nurse Managers

### Background

Violence perpetrated by patients and visitors (type II violence) in the hospital setting is a serious public health issue. As part of large study we examined the 12-month prevalence of type II violence among ~11,000 hospital workers in 6 U.S. hospitals, in which we observed that nurse managers were at an elevated risk of type II violence similar to that of nurses and nurses' aides when compared to administrative staff (see E.1.). This finding was unexpected given that nurse managers typically have lower rates of other occupational injury risk factors relative to nursing staff including musculoskeletal and needle stick injuries, most likely due to differences in their job responsibilities.

The purpose of this study was to examine the role of the nurse manager with respect to managing and mitigating workplace violence events, their types of training, and recommendations for improving how these types of events should be mitigated and/or managed.

### METHODS

Nurse managers employed in two large hospitals systems in Texas (TX) and North Carolina (NC), including 6 hospitals who were likely to interact with patients and/or visitors as part of their job were invited to participate. Type II violence was defined broadly with three sub-types of physical assault, physical threat, and verbal abuse. Details about this study cohort, the construction of the study definitions of type II violence, and type II violence prevalence estimates have been previously described (see E.1.).

This study took place in two large hospital systems in Texas (TX) and North Carolina (NC), with each including one general medical center hospital and two community hospitals. Type II violence was defined to include three sub-types of violence: physical assault, physical threat, and verbal abuse. After pilot-testing at three study hospitals, we modified the working definitions of: 1) physical assault which included *aggressive physical contact such as hitting, biting, scratching, pushing, shoving, spitting and/or sexual assault where a physical injury may or may not occur*; 2) physical threat included *threatening or aggressive physical behavior or physical force that makes the victim feel that they may be harmed such as shaking fists, throwing furniture, destroying property, having an aggressive stance, physically moving*

*towards you, moving into your physical space*; and 3) verbal abuse included *aggressive or inappropriate language that makes one feel threatened, scared and/or uncomfortable such as yelling, name calling, rude language, and verbal bullying*. In each case, violence was perpetrated by patients or visitors towards the worker. Details about the construction of our study definition are described elsewhere [Pompeii et al., 2015].

**Data Collection**

Data were collected via face-to-face focus group discussions among nurse managers across hospital units. Nurse managers across the hospitals and hospital units were invited to participate in focus group discussions. Study researchers presented an overview of the study at hospital-wide nurse manager meetings, including an invitation to participate in the focus groups. A follow-up email invitation was sent in which nurse managers were asked to sign up for a scheduled focus group, if interested. A semi-structured focus group guide was used to facilitate discussions that included the following domains: 1) magnitude of type II violence in their institution; 2) the nature/context of type II violent events; 3) existing workplace violence prevention policies and procedures; 4) the role of security with mitigating events on the patient unit; 5) the types of workplace violence prevention training received; 6) how and where they and their workers were expected to report events; 7) how type II violent events were mitigated; 8) methods typically used by workers to communicate events to managers; and 9) the types of workplace violence recommendations for improvement(s) to existing hospital workplace violence prevention program.

**Statistical Analysis**

Focus groups and key informative interviews were digitally recorded and transcribed. Content analysis (Patton, 2002) was performed using qualitative data analysis software (QSR International Pty Ltd., 2010). Initial coding concurred with the domains outlined in the focus group or key informant interview guides. Additional constructs were created and coded as they arose.

This study was approved by the Institutional Review Boards at The University of Texas Health Science Center at Houston and Duke University Health System.

## RESULTS

Several factors were cited as increasing and/ or moderating the risk of type II violence against nurse managers. In general, type II events were initiated between the patient and/or and a staff member other than the nurse manager. The involvement of the nurse managers was, generally, the result of being asked or feeling compelled to intercede, typically on behalf of a subordinate staff member, although there were instances when the nurse manager was sought out specifically for confrontation by the perpetrator (patient and/or visitor).

Supervisory role: The primary factor placing the participants at increased risk of type II violence was their supervisory role as nurse managers, which was recognized broadly (e.g., by staff nurses, physicians, and the nurse managers themselves) as an increased level of authority over many other front-line health-care providers. Participants reporting feeling responsible for personally managing potentially violent episodes, as one indicated: “I try to take the heat off of them [staff nurses] if I know there’s a problem family or an extra anxious family”, typically by intervening in the situation: “I’m going to go [into the room], and [the nurse] can stand outside the door and listen to how I deal with this situation if they really don’t feel comfortable [going in].” This assumption of risk by the nurse managers was motivated, in part, as a support mechanism for their staff:

> What I instill in my staff is if you ever feel there is something you can’t handle—and that’s for anything—you escalate it to your supervisor or myself [nurse manager], and that’s what they do.

This behavior was also motivated by what the nurse managers believed was desired by the patients and visitors, and, consequently, what might alleviate the situation most quickly:

> In all honesty, they [patient/visitor] want to see somebody in charge. That nurse could say what any one of us [nurse managers] would say, but they’re not in charge, so they’re not even hearing it.

This perception was supported by the fact that patient/visitor also sought out the nurse managers specifically to address issues:

> [W]hen I walked up on the unit I could hear the loud voices. And the guys were really, really, really tall…[They were] pointing, looking down at me, saying, "You're the manager of this unit. You're responsible for my mom's care."

The nurse managers recognized that these situations put them at personal risk of assault and injury:

> So I said [to the patient's family]…let's get out of the hallway. So we went into — which probably was my biggest mistake — we went into a conference room, and it was him and his brother. My staff was outside the door looking in, more concerned about me than anything else… I was terrified at the time.

They also recognized that such episodes exacted a professional toll:

> I had an incident occur to me where a crazy family member was attacking one of my employees, and I stepped in—I thought it went really well. But she's [the family member] written letters to everybody—every single board person, every single attorney, every single joint commission, DNV, CMS, everybody—board of nurse examiners—making ups stories now about me, about what I've done. I have witnesses on the unit that say I never did any of the above…It's been going on over a year.

Management of Events by Violence Sub-Types: Surprisingly, participants revealed that they were more comfortable managing type II violence episodes involving physical violence than episodes of non-physical violence, which may have increased their risk of exposure and injury. When type II violence involved physical assault, they unanimously agreed that they would get personally involved:

> I think that it's very cut and dry, if it's physical. If it's physical, everybody knows what to do. They jump right in. As house charge (nurse), that would be something that's very cut and dry.

When type II violence did not involve physical violence, participants reported feeling less certain of their role in de-escalating the situation. Specifically, they indicated that they were unsure how to balance protecting their staff from abuse while promoting high patient satisfaction survey scores, which may have impeded their effectiveness in de-escalating type II events:

> It's difficult for the supervisors to know how to respond to [non-physical violence] because we're told that the patient is always right and that family is always right.

Focus on patient satisfaction: The emphasis on patient satisfaction was highlighted by participants as increasing their risk of type II violence. Patient satisfaction was promoted in several ways, such as through the policy of open visiting hours; the level of patient satisfaction, which was measured using post-discharge patient satisfaction surveys, which impacts the federal funding received by the institutions. The administrative goal of increasing patient satisfaction scores often left nurse managers and their staff

vulnerable to type II violence, as participants indicated they felt pressured to tolerate violent behavior from patients and their family members out of concern that addressing such behavior would result in lower satisfaction scores:

> There was a patient that…we were schmoozing because it's all about customer service and treating them right. This poor [nurse] manager dealt with that person for a long time, and their staff, too, and as soon as [the patient] tried that [behavior at the hospital] next door, they were arrested and taken away.

Hospital policies allowing open visiting hours were cited by participants as inadvertently increasing their risk of type II violence, especially for those working night shifts. Open visiting hours, which allow unrestricted patient visitation 24 hours per day, were considered detrimental to the hospital staffs' safety because they permitted visitors to be in the hospital more frequently and for longer periods of time than previous, more restrictive visitation policies. Because visiting hours are set by the hospital administration, the increased risk of type II violence that resulted from the introduction of open visiting hours was seen by participants as a disconnect between administrators and hospital staff:

> [N]ow we have open visiting hours, and it's very difficult for the staff. So now they're seeing it [type II violence] even more. And the response they're getting – they don't feel a lot of support. But I understand that because the supervisors don't feel like they have the support [of the administration] either.

Lack of official policies detailing appropriate responses to type II violence: Participants indicated that they would welcome institutional policies on how to manage type II events, especially non-violent situations, but that their hospitals lacked effective policies on type II violence. The absence of institutional guidelines on addressing type II violence generally resulted in staff nurses granting patient/visitors more latitude in their behaviors, which may have placed the nurse managers at increased risk of involvement in a violent episode:

> If they don't have written policies and procedures on how to behave, [nurses] feel that same pressure of customer service…just let the family stay there. Just let them do that [behavior]…and it puts the staff in a bad position.

Participants also indicated that the absence of effective policies detailing the management of type II violence reduced their options when attempting to de-escalate situations, as they lacked a set of official

guidelines that might give them leverage with the assailant: “I don’t feel confident that I can be incredibly firm with a patient and say, ‘This is how it says [in the policy] or else.’”

Inadequate training and few opportunities for de-escalation practice: The existing training of nurse managers and staff nurses was widely cited by participants as a risk factor for type II violence. Although participants generally indicated that they had received some training in de-escalation techniques, the quality and availability of that training varied widely. Often, training was provided via videotape: “There’s two videotapes: one for the hostile visitor in a hospital, and one for a shooter”; video training was generally considered of low value by participants: “I don’t have a lot of respect for that type of training. As a manager, I don’t feel it’s effective.” In contrast, in-person training was highly valued but often reserved for individuals in supervisory roles: “I think [nurse managers] have had two sessions of de-escalation techniques…[taught by] one of the members of security that’s been here like 25 or 30 years, excellent person.” However, the lack of frequent, on-going training was identified as an issue:

> I think where we fall through the cracks—we don’t do anything else until the next year or the next five years...Once they learn the techniques and everything, there should be some kind of way to practice it to deal with the situations.

Improved training was highlighted as possible mechanism for reducing the risk of violence: “[I]f our nurses had better training, we may not get to that point ever that you would have to go in there.” Participants indicated that increased practice handling such situations was beneficial to their staff and decreased the need for the nurse managers to be involved in violent events: “[The events are] becoming less and less, so I think [the nurses are] learning how to do it.” Even so, participants recognized that front-line nurses would not be able to manage all events independently:

> Just talking to them, trying to talk them down and de-escalate the situation yourself is sometimes the best way to handle it. It truly is dependent on the nurse. There are other times that it can go completely out of control, and you have to call the security officer.

Security personnel: The presence of security personnel was considered a factor that could both increase and mitigate the risk of type II violence among the nurse managers: “Sometimes when you ask security to come up, it can make it so much worse. Other times it makes it better. But sometimes it can make it so much worse.” Participants reported that security personnel frequently escalated situations

rather than de-escalating them, which seemed to stem from a conflicting understanding of the role of security. The nurse managers indicated that they called security for a variety of reasons, including the belief that that security personnel were effective simply when visible to the assailant: "Their visual presence sometimes is helpful, sometimes not." However, participants reported that security personnel often become involved in the situation prematurely:

> I find security just escalates it. Sometimes you have to [call security] if [the patient is] abusive and you think you really feel threatened. I don't hesitate to call security. But any other time, if you call them and they're on standby, you want to tell them, "No, wait. Go back." Because you're kind of dealing with it, but you don't want them to make it worse, because when they come, they come all macho. "We're here to take care of it and protect."

Participants also stated that security personnel typically requested that the nurse manager be engaged in the episodes of type II violence for which security had been called: "If a [nurse] manager's around, it's like, 'We need the manager here.'"

Participants indicated that administrative and legal restrictions imposed on security personnel's tactics and practices increased the nurse managers' risk of type II violence. These limitations were seen as contributing to delayed response times as well as an inability to effectively manage potentially violent situations:

> As a manager, when I can't get people to de-escalate, or if I feel I need security and I've called them, it's been a challenge for me and a frustration because they ask a lot of questions. They ask a lot of detail. They inform me they can't get involved. They can't touch the patient. I know all that.
>
> They're asking me all these questions on the phone, and when I call you, I need you.
>
> The patient pulled a knife on his boyfriend…by the time [security] got there, he had disposed of his knife, and they couldn't search anything or do anything about it. There go the nurses working with the patient the rest of the evening knowing that knife is in there somewhere.

Some of the participants reported that security personnel had declined to assist with situations, which left nurse managers to address the event: "[O]n two occasions where I felt very desperate, I felt very frustrated and let down [that security did not come]. And then I go back in the room and try to deal with it, and I felt alone." Whether security personnel would respond to an event was not uniform:

> So there are some [security personnel] that are supportive, and there are some that aren't. But you know it's a hit and miss and—because there's no clear cut policy.

Physicians: Participants reported that physicians could substantially increase or decrease their risk of type II violence. Dissatisfaction with physician availability and attentiveness was one of the primary reasons participants cited for patient/visitor frustration, which could develop into violent behavior: "Most of the time it's like maybe less than a five minute visit [between the physician and patient/family], and they walk out and they leave everything else for the nurses to explain…So it's a lot of unhappiness with the physicians." Physicians' treatment plans were also mentioned as a source of risk for the nurses, particularly among drug-seeking patients:

> We also have several physicians who…realize [the patients are] pain-medicine seeking, and so it's almost like [the physicians] want to punish them …They literally will refuse [to give pain medication], and then they leave it up to the nurse to explain to the patient why they didn't increase the pain medicine.

Conversely, physicians who defended the nurses against challenging or disrespectful behavior were seen as key resources in de-escalating situations and reducing the risk of type II violence. This was primarily attributed to physicians' discharge privileges:

> I'm not going to say, "If you do this, you're going to get discharged," because I can't discharge a patient. So why would I give an empty threat? [But] if I go in there with a doctor, and the doctor is saying, "You will not—" then I feel empowered to say, "Remember, we talked about this."
>
> If I know I have support and that doctor is going to really discharge that patient, then I will feel empowered to go in there and say, "Look, we will not tolerate this, or like Dr. X, Y, Z said, you will be discharged."

## E.7. Hospital Emergency Department Workers' Experiences with Violent Patients and Visitors: "It's Incredibly Frustrating to Not Feel Safe in a Workspace"

### BACKGROUND

In the US and abroad, hospital emergency department (ED) workers are at high risk of violence perpetrated by patients or visitors (type II violence) (Taylor & Rew, 2011; Gates et al., 2011; Pompeii et al., 2013; Speroni et al., 2014). In a prospective study of violence against ED workers in 6 US hospitals, verbal harassment from patients and visitors in the previous 6 months was nearly universal (98% and 88%, respectively), and half of participants (48%) experienced physical assault perpetrated by a patient during this time (Gates et al., 2011). An average of 4 physical threats and 1.5 physical assaults per year per worker was observed (Kowalenko, Gates, Gillespie, Succop, & Mentzel, 2013). Reports suggest this type of violence is increasing, and workers accept it as 'part of the job.'

Within the hospital violence literature, the ED setting has received focused attention, with an emphasis on describing violent events and their effects on workers. Common ED circumstances have been suggested to contribute to violent events: long wait times; high noise levels; cramped space; lack of privacy; 24-hour accessibility; ease of access, including with weapons; difficulty enforcing surveillance measures; perceptions by patients/visitors that EDs are sources of medication; use by patients/visitors who are facing urgent, painful, unexpected, and stressful situations; lack of staff training in recognizing and diffusing potentially violent situations; and low staffing levels, including a lack of adequately trained or visible security personnel (Arik, Anat, & Arie, 2012; Blando et al., 2012; Catlette, 2005; Gacki-Smith et al., 2009; Gerberich et al., 2005; Kowalenko, Walters, Khare, & Compton, 2005; J. B. C. Lau, Magarey, & Wiechula, 2012a, 2012b; Presley & Robinson, 2002). The negative effects of violence on worker victims are wide-ranging and include physical injury, anger, fear, anxiety, low morale, poor mental health (including posttraumatic stress), time off work, disability, loss of sleep, muscle tension, nightmares, flashbacks and leaving the profession (Dement JM, Lipscomb HJ, Schoenfisch AL, & Pompeii LA, 2014; Pompeii et al., 2015; Gillespie, Bresler, Gates, & Succop, 2013; Levin, Hewitt, & Misner, 1998; Liss & McCaskell, 1994; Mahoney, 1991; Needham, Abderhalden, Halfens, Fischer, & Dassen, 2005; Zafar et al., 2013).

Decreases in work productivity and quality of patient care have been suggested as well (Kowalenko et al., 2013; J. B. Lau et al., 2004).

Recent systematic reviews of the ED violence literature highlight the need for research addressing prevention and mitigation approaches to type II violence (Anderson, FitzGerald, & Luck, 2010; Taylor & Rew, 2011). As part of a larger project focused on the surveillance of type II violence events in the hospital setting, this study aimed to describe the characteristics of and circumstances surrounding type II violence in hospital EDs, including current mitigation and prevention efforts by workers and administrators; identify sub-groups of workers in the ED setting at particularly high risk; and describe approaches taken by workers and administrators to mitigate and prevent type II violence in the hospital ED setting. We previously examined rates of type II violent events among workers in three US hospitals (Pompeii LA et al., 2013). Rates among workers in the ED setting were 4.39 per 100 full-time equivalents (FTEs) (95% CI 3.51-5.50), compared to 1.75 per 100 FTEs (95% CI 1.60-1.91) among all patient care staff. Notably, the events captured were all of a physical nature and involved patient perpetrators; information was lacking on physical threats and verbal abuse, as well as type II violent events involving visitor perpetrators. Furthermore, the data lacked details about the circumstances of the events, efforts to prevent or contain the event, and consequences.

## METHODS

### Data Collection

*Survey:* A brief, voluntary survey, described previously in detail (Pompeii LA, In Review), was sent to approximately 11,000 patient care staff at six US hospitals in September 2011, including two large medical centers and four community hospitals. Participants were asked about their experiences with type II violence in their career and in the previous 12 months. Violence subtypes included physical assault (defined as aggressive physical contact such as hitting, biting, scratching, pushing, shoving and/or sexual assault), physical threat (defined as threatening or aggressive physical behavior or physical force that makes you feel that you may be harmed), and verbal abuse (defined as aggressive or inappropriate language that makes you feel threatened, scared and/or uncomfortable). . Participants who experienced

any type II violence in the previous 12 months were asked to provide detail about the event they deemed the most serious: perpetrator type, perceived contributing factors, location, weapons involved, whether/how they reported the event. Survey data were collected using Qualtrics (Qualtrics, 2013) and imported into SAS v9.3 software (SAS Institute Inc., 2011) for analysis.

*Focus groups and key informant interviews:* A total of eleven focus groups [NC: 5; TX: 6] and five key informant interviews [NC: 5] were conducted among 94 [NC: 44; TX: 50] workers who either frontline workers in the ED or managers of the ED. Participants included nurses, nurses' aides, security officers, patient sitters, ED nurse managers, ED physicians, social workers, and managers of float nurses and sitters. Using a semi-structured guide, researchers collected qualitative data related to the magnitude of type II violence, the nature of events, policies and procedures, training, reporting/communication, prevention efforts, and recommendations for improvement. Additional concerns were raised by participants. Sessions were audio-recorded following informed consent of participants. Within each session, participants were assigned a number to allow transcription of the audio files without participant names.

*Walk-through assessments:* To enhance the understanding of ED security and safety and provide context to the data collection efforts, study investigators walked through each ED with the hospital security manager and a unit nurse manager (or nursing staff member) to discuss security features and policies in place. An investigator-developed note-taking form was used.

**Data Analyses**

The study population was described by age, gender, race/ethnicity, occupational history, and career and 12-month prevalence of type II violence. Frequencies and proportions were calculated, and prevalence ratios and 95% confidence intervals were computed using log-binomial regression (Thompson, Myers, & Kriebel, 1998; Zocchetti, Consonni, & Bertazzi, 1995) SAS statistical software was used for all quantitative analyses (SAS Institute Inc., 2011). Content analysis (Patton MQ, 2002) of the focus group and key informant interview text data was performed using qualitative data analysis software (QSR International Pty Ltd., 2012). Coding initially followed the guides; additional constructs were developed as

appropriate. Walk-through data were summarized. All procedures were approved by the Institutional Review Boards at Duke University Medical Center and at The University of Texas Health Science Center at Houston.

## RESULTS

**Survey participants:** About 5% of survey participants (n=282/5,385) worked in the ED. These participants were primarily nurses (55.0%) or nurses' aides (11.4%) (Table 1). Three-quarters (76.0%) were female, and about two-thirds (67.7%) were white. Over half (56.6%) were less than 40 years old, and 64.2% had less than 5 years of experience in the ED setting. Nearly all indicated their job involved direct patient contact (97.9%).

**Career and 12-month prevalence of type II violence:** Three-quarters of hospital ED workers (76.9%, n=210) indicated they had experienced at least one type II violent event in their career. In the previous 12 months, 26.2% of ED participants experienced physical assault, 47.2% physical threat, and 73.8% verbal abuse. Notably, the frequency of type II violence experienced by 282 ED workers in the past year alone included 148 events involving physical assault, 351 involving physical threat, and 773 involving verbal abuse. These were not measured as mutually exclusive events; a single event could have included more than one sub-type of type II violence.

Within the ED, by job title, nurses had the highest 12-month prevalence of type II violence in the past year (89.6%), and among those, 39.9% experienced physical assault (Table 1). The 12-month prevalence of violence did not vary by worker gender, age, or years worked in the ED or profession. It was higher among whites (82.4%) compared to non-whites (58.3%). Notably, among workers who experienced violence in the previous year, the percent that experienced physical assault was more than double for whites (40.0%) compared to non-whites (18.4%). The 12-month prevalence of type II violence was lower among workers in the community hospitals' EDs compared to those in the medical centers' EDs (PR 0.84; 95%CI 0.73-0.95).

**Most serious events in previous 12 months:** Among ED workers who experienced type II violence in the previous 12 months, their most serious events were categorized as verbal abuse (54.0%),

followed by physical threat (24.2%) and physical assault (21.8%) (Table 2). Events most often occurred in a patient's room or exam room. In contrast to physical assaults, physical threats and verbal abuse were more likely to occur in the waiting room (11.8% and 15.8%, respectively, versus 2.2%). The worker was more likely to be alone with the perpetrator in events of physical threat (33.3%) or verbal abuse (46.5%) compared to physical assault (17.4%). Weapons or objects commonly used in physical assaults and threats most often included a body part (64.9%), followed by bodily fluids (14.4%) or an object (e.g., furniture, food tray, equipment) (10.3%). No events involved use of a gun or knife.

The patient (rather than a visitor) was the perpetrator in all physical assaults, compared to 80.4% and 58.9% of physical threats and verbal abuse events, respectively. Factors perceived to contribute to events of patient-perpetrated violence commonly included mental health, behavioral or emotional issues (46.5%), medication/pain/alcohol/drug-related condition (44.7%), and being unhappy with care (34.1%). Mental health and behavioral issues were more commonly attributed to patient-perpetrated events of physical assault or threat, compared to verbal abuse. Conflict or being unhappy with care was a common factor attributed to events of verbal abuse (65.1%), followed by physical threats (46.3%) and assaults (23.9%). Among visitor-perpetrated events of physical threat and verbal abuse, long wait times (56.1%), concern about the patient (41.5%), and dissatisfaction with care (39.0%) were more commonly described.

After the event, the affected worker felt frightened or worried about their own personal safety in over half of events of physical assault (65.2%) and physical threat (58.8%), and in 28.1% of events of verbal abuse. Events were often reported (e.g., verbally, in chart, through official channels), regardless of event type (physical assault: 91.3%, physical threat: 80.4%, verbal abuse: 80.7%). In one-fifth of physical assaults, the affected worker took day(s) off of work and/or sought care following the event. Workers were more likely to perceive the perpetrator intended to harm them for events of physical assault (56.5%) compared to physical threats (33.3%) and verbal abuse (10.5%). Notably, a rather large proportion of workers indicated they were "not sure" whether the perpetrator intended to harm them, particularly for events of physical threat (43.3%) and verbal abuse (46.5%).

**Focus groups and Key Informant Interviews**

The care of unique patient populations in the emergency department: Participants described characteristics of and policies surrounding, the care of particular patient populations that were perceived as distinctive of the ED setting.

**Drunk/on drugs, alcoholics, drug-seekers:**

*"Your drug seekers, or even the ones you perceive to be drug seekers, like your sickle cell and your gastroparesis…and you see them every other day for the same thing…they are very demanding, and if they don't get their way,. They get mad and start yelling."*

*"If they're on PCP or something like that, they're pretty violent. It takes a lot of people to hold them down."*

*"People with chronic pain get really upset because they can't get their prescriptions."*

*"We do have a narcotics policy here for our physician group to where if a patient has been in the facilities for a particular complaint multiple times within a time frame, they will be refused narcotic pain medications. Sometimes that can create problems with our frequent fliers that aren't aware of the policy until that particular day they're here."*

*"It depends what doc you have, whether [the narcotic policy] gets used or not." Patients "absolutely" know this and will call ahead to see what doctor is on, "and we don't tell them."*

*"Some [doctors] are more straightforward and will say "look you were just here. This is what we gave you. You can't come back for refills to the ER." Others will say "Well, I'll just give you a little bit."*

**Individuals en route to jail:**

*"They can choose [to come to the ED] instead of going to jail." "All they have to whisper [to the police officer] is, 'I have chest pain.' It's easy. Or 'I'm a diabetic.' Or '[I have] seizures.' Or they say they 'have a medical condition…' Then they're violent and loud….because they're drunk. Then they get mad because they don't get [cab or bus] vouchers."*

*"…when you go to jail, you have to be medically cleared…before you go in the drunk tank[1]*
*"…[Police] say they'd rather bring them here [to the ED] than take them to the drunk tank and deal with them."*
*[1](from Wiki) "a jail cell or separate facility accommodating people who are intoxicated, especially with alcohol."*

*"And then they get irate when they get here because they just want to get up and leave… and "they get mad because they don't get [bus] vouchers."*

**Psychiatric patients:** Participants also described a "radically increasing" need to care for, or board, psychiatric patients in the ED, compounded by declines in community-level resources to provide targeted

care for this patient population. Participants voiced concerns that policies focused on the care of these patients were lacking, and the ED setting and staff preparation was not designed with the appropriate care of these patients in mind – a situation with the potential to adversely affect the well-being of both staff and patients.

> "we're putting psychotic people into a closed space for days as opposed to hours…we will have [psychotic patients] stay here [in the ED] for a week, waiting to be placed in a hospital…When I was a student, I did a psychiatric rotation at a jail, and it has a very similar feel… it is a dangerous, dangerous place… there have been a lot of staff assaults…"(ED physician)

There was also uncertainty among ED workers about how to define a "psychiatric patient."

> "they have to be suicidal or homicidal, right?"
>
> "no, they can come in and say 'I'm depressed.' They can say anything, any psychiatric issue…schizophrenic..bipolar…"
>
> "someone that is in an active phase of it…not somebody that has a history of it."

**Repeat patients:**

> "As long as they have a medical problem,…even though they've been inappropriate, they are still allowed to come back."

**Family members/visitors:** Violence directed at staff by patients' family members and other visitors was often described as stemming from the stress of the situation and their concern of a loved one.

> "…they're under stress. They'll kind of get in your face."
>
> "They also call me from home. ..wanting patient information.. and they get very upset when they find out that I can't give them it due to HIPAA."

There lacked a consensus on whether a formal visitor policy existed, although participants consistently spoke of a 'two visitors per patient' rule. A visitor policy's importance was stressed in terms of patient care, comfort, and privacy; visitors' safety; and violence prevention, with nurses attempting to enforce it (as opposed to management or security). Such policies, however, were described as 'case-by-case,' with leeway particularly given in the case of a death, or when visitors have traveled from far away to be with the patient. They were rarely enforced and difficult to fully implement, in part due to the focus on patient and visitor satisfaction.

> "We do have a written policy. It's supposed to only be – what, 2 visitors? 1 or 2 visitors? But we've been told that we have to let people visit whenever they want to." ED nurse

> "[The visitor policy] was two visitors per patient (it was a small room), and every time I turned around there was a third person in there. They were walking all the way around the nurses' station on the other side where I was not sitting…" ED nurse

> "If they are impeding my care of the patient, that's the only way you can ask them to leave. And it can be difficult at times." Nurse Manager

**The physical ED environment:** Several aspects of the physical ED environment were highlighted as areas that may influence the incidence and severity of type II violence. Metal detectors staffed by security personnel at the main ED entrance were common and generally viewed as an effective way to screen for weapons. However, the ambulance bay was an area of concern, as patients and visitors could access the ED without going through a metal detector or other screening process. Several participants noted weapons' entry through this manner. Within the ED, the front desk and triage areas were described as spaces that enhanced ED workers' vulnerability, particularly if workers had no way to escape (i.e., patient sits between worker and door) or seek help. Waiting rooms were open with the potential for violence to escalate, in part due to the mixture of acute and non-acute care seekers, as well as the ability of gang members to mingle. Patient care areas could be open as well, making it difficult to discuss concerns in private. Some hospital EDs had psychiatric holding or seclusion areas affording increased protection for both staff and patients, but also influencing the types of patients brought in:.

> "At this particular facility we do have a secure hold room, and some of our ambulance services are aware of that…so as word has gotten out that we have this room, our influx of [patients that might utilize that room] has increased." Nurse Manager

**Violence as "part of the job":** Participants described patient and visitor perpetrated violence as a regular part of their job in the ED - something that "comes with the territory" with a perceived expectation to "tolerate it."

> "It's kind of drilled into you – 'Your patient is under stress…It's behavior that's not unexpected' – Blow it off…" ED nurse

> "When there is a 400-pound psych patient who is amped up and [we're] taking her down to inject her…I can give medicines…but I can't physically restrain someone very well. I feel like that's part

of being an ER nurse now. Better hit the weights for 30 minutes per day before you come to work…" ED nurse

On several occasions, ED staff highlighted their unit as a "big family" with their own "weird sense of humor." Although they "all like the adrenaline, the excitement, and the busyness," they acknowledged the difficulty of exposure to violence in their work. They recalled staff who left the emergency care profession as a result of violence, and some even spoke of their own thoughts of leaving.

"We do deal with [violence] a lot and it tends to get you down…" ED nurse

"[The violence] is totally inappropriate… and it is just bad to have all that negativity directed toward you." ED nurse

"It's incredibly frustrating to not feel safe in a workspace." ED nurse
"[The violence] makes everything horrible, and it really makes you question your job - it makes you question what you are doing with your life." ED physician

The effects of violence extended beyond the hospitals' walls.

"[Patients are] mad at us. They didn't like the way we treated him. They didn't like the prescription we gave them. And what else do they have better to do than to sit in the parking lot and wait for us to come out?" ED nurse

"We have our names on our badges, our full names. That's kind of concerning to me. [A patient was] staring at my badge, and I go 'What are you looking at on my badge?' [The patient said,] 'I'm looking at your name so I can look up your address so I can get your family members.' "ED nurse

There was a clear consensus among ED care staff on an increasing "sense of entitlement" among patients and visitors who "want things done now,"

Related, participants spoke of patients not knowing the ED process of the order in which patients receive care, and specifically the difficulties in addressing expectations of non-acute patients:

"They want you to freak out with them, and when you don't, that kind of ticks people off sometimes." ED nurse

"You have critical patients.. waiting to go to the back, and it's usually the one that really don't need to be in the ER that are the ones that are arguing with you." ED nurse

"they don't understand that it's going to take all the staff we have to fix this person who is dying, and you're here for…something small and minor." ED nurse

Coupled with the hospital systems' emphasis on patient and visitor satisfaction, patient/visitor expectations created a challenging work environment, where staff must make decisions not only on patient

safety but also patient satisfaction. The latter was measured through patients' post-care surveys administered by a third party. ED nurse: "Our threats now are 'What's your name? Wait until I get my survey.' …After they yell at you and they curse you out… Because [patients] know you are going to get in trouble."

> "If the patient is upset…or acting in an aggressive manner and they say 'I want the supervisor', the supervisor comes down and all of the sudden it's like [the workers] don't matter. Now we have an angry customer and we have to make them happy so they'll give us good marks on our surveys." ED nurse

> "30% of our reimbursement is now based on patient satisfaction… You are looking at 'I am trying to be a good nurse; I am trying to be a safe nurse, but I have got to make them happy because they are going to get a survey.' " ED Director

**Training:** Violence mitigation and prevention training was not required for all direct care workers in the ED setting. Participants described a need for de-escalation training (particularly for less tenured staff), scenario-based training with feedback, training specific to patient populations (particularly psychiatric patients), cultural-sensitivity training, and training in physical release and restraint. Training was viewed not only as a means of protection for ED staff, but also as a way to bring needed consistency in staff responses to violence.

Some participants had completed a violence prevention course. Nurses' aides described learning "through the [geriatrics] class where they teach you to re-direct, give washcloths to fold"…"reduce the over-stimulation." Nurses described de-escalation training (e.g., CPI NCI) being useful, particularly for intervening early as the event is escalating. Some had also taken the hands-on self-defense and physical restraint part of this course and found it to be relevant. They stressed the importance of refresher courses. Finally, some participants suggested effective methods to handle violent situations were "learned on the job," in particular, through watching others, "by doing it," and "by making mistakes."

Several nurses recounted one hospital's active shooter (i.e. code silver) drill in which workers were not informed of the drill beforehand:

> "This person just came in with a gun…I nearly had a heart attack…I hid under a desk, and I told all the patients to duck…I dragged the phone down and I called security... It scared the crap out of me."

After the event, there was no follow-up for staff members to review the event and educate them in how to respond, with a worker indicating “I guess we always did the right thing.”

A lack of time and resources was consistently described as a barrier to training. Hospitals’ clinical education department offerings did include classes in general workplace violence recognition and prevention. However, opportunities were not always made available to all at-risk groups of workers, including nursing care assistants and sitters, to attend these classes.

**Management of type II violence in the ED setting:** Several methods were used to prevent and mitigate violent events locally including asking the nurse manager or charge nurse for assistance, changing assignments with a co-worker, using a buddy system, verbal communication/de-escalation/boundary setting, and self-protection (e.g., backing away, keeping a safe distance, knowing your surroundings). Relevant information was shared in patient charts, e-mails, shift reports, and verbal communication with co-workers (face-to-face or by phone).

> “Every day. You have to [report violent events to co-workers]. You have to tell to warn them.” ED nurse
>
> “I’ll call someone out if they didn’t warn me first, before I went in the room.” ED nurse

Some EDs developed and utilized their own systems to track concerning behaviors of patients, particularly patients who were frequently treated in the ED. For more serious situations, physical or chemical medical restraints were sometimes used, although it was clear that approach has become less acceptable over the years. Rather, security or police were asked to intervene to control the event. Hospitals varied in the types of security personnel employed/contracted and whether they provided 24-hour security coverage in the ED. Of concern, there was also variability in – and sometimes uncertainty of – security personnel’s roles in and effect during violence prevention and mitigation efforts.

> “No one knows what the rules are around here. No one knows how aggressive situations are supposed to be answered. Nobody has like a complete understanding… What is the security officer’s role? What is the police officer’s role? Who can put hands on the patient?” ED nurse

Some EDs also used “sitters” to provide one-on-one constant observation of ED patients at risk of harming themselves or others. Despite the varied methods used to prevent and mitigate type II violence, knowledge of hospital ED workplace violence prevention policies was lacking:

> “I’m assuming there’s a written policy, but it is pretty standard for every ER that I’ve ever worked in. You notify your charge nurse. The charge nurse will notify security….you just work your way up the chain on any drama, whether it is violence or anything else.” ED nurse

## DISCUSSION

Patient and visitor perpetrated violence experienced by hospital workers, particularly those in the ED setting, has been described as a significant public health problem for decades. In the six US hospitals in this study, the 12-month prevalence of self-reported physical assaults, threats and verbal abuse among workers in the ED setting – particularly nurses – was higher than that of workers in other settings. Perceived precipitating factors, including mental/behavioral health concerns, drug/alcohol use, and lack of satisfaction with care, were common to those described in the ED literature and highlight the diversity of factors that can contribute to violence perpetrated by patients and visitors against workers in the ED setting. Other factors of concern included the physical environment. Notably, during researchers’ walk-throughs of the EDs, several of the study hospitals were actively involved in renovation or planning renovation to enhance the security and safety of the ED setting for both patients/visitors and staff.

One trend of specific concern to ED workers in this study was the care and boarding of psychiatric patients in hospital EDs, at times without physical space or specially trained staff for such care. Over the past several years in the US, there has been an increasing number of psychiatric patients seeking care in general hospitals, particularly in the ED setting, where they may be boarded for days and even weeks (Honberg R, Diehl S, Kimball A, Gruttadaro D, & Fitzpatrick M, 2011; Vicaro M, 2012). EDs were not designed with the provision of adequate and appropriate care of psychiatric patients in mind; their attempts at providing such care can be costly, inefficient, ineffective and dangerous (Carlson K, 2012; Vicaro M, 2012). Amidst this context suggesting general hospital EDs will continue to provide care for these individuals, findings suggest an urgent need to direct resources toward general hospital infrastructure,

worker training and role clarity among all workers that may interact with ED patients (including security), and connect patients to community-based resources, if existing.

In addition to their recounting of serious events of physical assault, participants described non-physical sequelae of type II violence, including that from physical threats and verbal abuse directed toward workers and workers' families, that were of grave concern to workers as well as to the research team. Vulgar and life-threatening terrorizations were coupled with the real ability of disgruntled patients and visitors to access staff in nearby areas, such as parking lots, or their personal information thorough the internet. It was clear that staff did not feel safe at work, and these examples highlight workers' vulnerability to the effects of a violent event both inside and outside of the hospitals' walls. The potential for adverse effects on workers' mental health (Dement JM et al., 2014; Gillespie, Bresler, et al., 2013) is evident, and workers' considerations of leaving the profession as a result of violence (Catlette, 2005; Fernandes et al., 1999; Gates et al., 2011) is certainly comprehensible. Compared to the study survey participants as a whole (Pompeii et al., In Review) (2015), participants from the ED were younger, worked fewer years in their profession and department.

From a research perspective, there is a call for movement away from 'redefining the problem' and rather focusing on effective prevention approaches (Anderson et al., 2010). Health care professional groups, unions, and accreditation organizations have voiced the need for regulations to ensure institutions make such efforts to prevent hospital violence and provide a safe work environment. Currently, however, mandates for violence prevention programs or training for health care workers are sparse. In the US, the Occupational Safety and Health Administration (OSHA) and the National Institute for Occupational Safety and Health (NIOSH) have issued recommendations and guidelines aimed at violence prevention in health care settings, including training and education in violence risk factors and control measures "especially for staff working in the mental health and emergency departments" (NIOSH, 2002; US Department of Labor Occupational Safety and Health Administration, 2015). The Joint Commission's Environment of Care standards require hospitals to have processes in place to identify and prevent/minimize safety and security risks, as well as to identify and follow-up on violent incidents involving patients, workers, and others in the

hospital setting (EC.02.01.01, EC.04.01.01). Recently, the Joint Commission revised Standard PC.01.01.01 related specifically to patient flow through the ED (abbreviated and emphasis added): "If a patient is boarded while awaiting care for emotional illness and/or the effects of alcoholism or substance abuse, the hospital provides orientation and training to any clinical and nonclinical staff caring for such patients in effective and safe care, treatment, and services (for example, medication protocols, de-escalation techniques)" (EP24, effective January 2013) (The Joint Commission, 2012). It will be important to understand what changes have been made in hospitals in terms of such recommended and required training for all direct care staff and whether such training is effective in violence prevention and mitigation.

This study provided insight into less-measurable constructs that can influence how workers interpret, intervene, respond to, and are treated by others following events of violence. Workers – both on the front line and in supervisory roles – recognized an increasing and intense focus on patient and visitor satisfaction -- "customer service." This is not a new phenomenon (its emphasis was described as "unprecedented" in 1998 by Levin et al.), yet its influence on the incidence and management of violent events has received relatively little attention in the literature. Financial incentives that encourage patient satisfaction over worker safety, and the coupled perception that patients and visitors know how important satisfaction survey marks are, fuel the ability for workplace violence to continue without being reported (Gacki-Smith et al., 2009; Pompeii et al reporting paper) and subsequently understood and addressed. Co-existing conditions are noteworthy: a typically busy and fast paced environment, lack of control over the number and type of incoming patients (pace, acuity, non-medical needs), deficiencies related to ED worker training in violence recognition and prevention, uncertainty in the authority of security personnel and support of management in responding to violent events, and trends related to the provision of non-emergency care – including boarding – in the ED. Further, low-acuity patients make up a substantial proportion of the patient population being treated and billed through the ED, and they are the group to provide satisfaction scores for the ED setting (satisfaction scores of ED patients who are admitted are assigned to the inpatient unit on which they receive post-ED care). For these lower acuity patients, overestimates of the urgency of their situation coupled with a lack of understanding of the triage approach

and perceived and actual longer wait times can drive patient satisfaction scores down – a phenomena EDs and hospitals work diligently to avoid (Welch, 2009).

We recognize the potential for selection bias and recall bias in the approaches used to collect data in this study, and findings may not be applicable to all ED workers. However, these methods provided a better understanding of the magnitude of and circumstances surrounding events compared to that which could be gleaned from existing administrative records (e.g., workers' compensation claims). The use of qualitative methods and face-to-face walk-throughs with hospital workers in the ED setting provided additional insight into concerns observed in the survey data, as well as the broader context in which violence against workers in the ED setting occurs.

**CONCLUSIONS**

The burden of type II violence in the hospital emergency department is overwhelming. This research supports the need for effective workplace violence prevention programs in hospital EDs that establish clear policies, define expectations of workgroups involved in violence prevention and mitigation, demonstrate institutional commitment to workers' physical and emotional well-being, and provide workers with appropriate violence recognition and prevention training. Although mental health/behavioral concerns, alcohol/drug/medication-related issues, and a lack of satisfaction with care received were perceived to contribute to a large proportion of patient and visitor-perpetrated events, respectively, no one factor was suggested to contribute to all events. As has been called for by others (Gillespie, Gates, & Berry, 2013; Pompeii LA, In Review)(2015), prevention approaches that address all patients and visitors are warranted. They should recognize distinct ED patient populations for whom more specialized care and resources are needed and be backed by a clear, well-recognized policy. Successful implementation of such efforts may require consideration of workers' perceptions that type II violence is "part of the job," as well as growing expectations to maintain patients' and visitors' satisfaction.. Although direct patient care providers commonly housed in the ED setting are a priority intervention group, other workgroups who interact with patients and visitors in the ED should not be overlooked. In this regard, future research efforts are needed

to better understand the safety and role of workgroups who interact with ED patients/visitors but who are not traditionally housed in the ED (e.g., security personnel, sitters).

Table 1. Emergency department workers' demographic characteristics and 12-month prevalence of type II violence across categories of participant characteristics, with prevalence ratios and 95% confidence intervals (95% CI)

| | | | Any type II violence | | | Among victims of violence in past year, |
|---|---|---|---|---|---|---|
| | n | (%) | Prevalence | Prevalence ratio (95% CI) | | % physically assaulted |
| Job title | | | | | | |
| Nurse | 154 | (55.0) | 89.6 | 1.37 | (1.04-1.79) | 39.9 |
| Nurses' aide | 32 | (11.4) | 53.1 | 0.81 | (0.53-1.23) | 41.2 |
| Other | 65 | (23.2) | 55.4 | 0.85 | (0.60-1.19) | 27.8 |
| Administrative | 29 | (10.4) | 65.5 | 1.00 | | 10.5 |
| *Missing* | *2* | | | | | |
| Gender | | | | | | |
| Female | 212 | (76.0) | 74.5 | 1.00 | (0.85-1.17) | 34.2 |
| Male | 67 | (24.0) | 74.6 | 1.00 | | 36.0 |
| *Missing* | *3* | | | | | |
| Age in years | | | | | | |
| 18 to 30 | 72 | (25.6) | 66.7 | 1.00 | | 39.6 |
| 31 to 40 | 87 | (31.0) | 79.3 | 1.19 | (0.98-1.45) | 37.7 |
| 41 to 50 | 76 | (27.0) | 77.6 | 1.16 | (0.95-1.43) | 30.5 |
| 51 to 60 | 39 | (13.9) | 76.9 | 1.15 | (0.91-1.46) | 33.3 |
| 61+ | 7 | (2.5) | 57.1 | 0.86 | (0.44-1.66) | 25.0 |
| *Missing* | *1* | | | | | |
| Race | | | | | | |
| Black | 33 | (12.7) | 54.6 | 0.90 | (0.61-1.31) | 16.7 |
| White | 176 | (67.7) | 82.4 | 1.36 | (1.08-1.71) | 40.0 |
| Other | 51 | (19.6) | 60.8 | 1.00 | | 19.4 |
| *Missing* | *22* | | | | | |
| Years in work location | | | | | | |
| <1 | 33 | (11.7) | 60.6 | 0.88 | (0.63-1.23) | 25.0 |
| 1 to 5 | 148 | (52.5) | 77.7 | 1.13 | (0.91-1.40) | 36.5 |
| 6 to 10 | 56 | (19.9) | 80.4 | 1.17 | (0.92-1.48) | 33.3 |
| 10+ | 45 | (16.0) | 68.9 | 1.00 | | 38.7 |
| Years in profession | | | | | | |
| <1 | 19 | (6.7) | 52.6 | 0.65 | (0.42-1.01) | 30.0 |
| 1 to 5 | 103 | (36.5) | 72.8 | 0.90 | (0.78-1.05) | 38.7 |
| 6 to 10 | 57 | (20.2) | 75.4 | 0.94 | (0.79-1.12) | 48.8 |
| 10+ | 103 | (36.5) | 80.6 | 1.00 | | 25.3 |
| Hospital type | | | | | | |
| Medical center | 166 | (58.9) | 69.3 | 0.84 | (0.73-0.95) | 33.9 |
| Community hospital | 116 | (41.1) | 82.8 | 1.00 | | 36.5 |

Table 2. Characteristics of type II violent events participants deemed the most serious in the previous 12 months, stratified by event type[a]

| Characteristic | Physical assault (n=46) n (%) | Physical threat (n=51) n (%) | Verbal abuse (n=114) n (%) |
|---|---|---|---|
| Location of the event | | | |
| Patient room/exam room | 37 (80.4) | 39 (76.5) | 77 (67.5) |
| Hallway | 5 (10.9) | 4 (7.8) | 10 (8.8) |
| Waiting room | 1 (2.2) | 6 (11.8) | 18 (15.8) |
| Other[b] | 3 (6.5) | 2 (3.9) | 9 (7.9) |
| Worker and perpetrator alone during event | 8 (17.4) | 17 (33.3) | 53 (46.5) |
| Weapon(s)/object(s) used by perpetrator[c] | 44 (95.7) | 21 (41.2) | 7 (6.1) |
| *Body part (e.g., fist, k nee)* | *43 (97.7)* | *20 (95.2)* | *3 (42.9)* |
| *Body fluids* | *10 (22.7)* | *4 (19.0)* | *2 (28.6)* |
| *Furniture, supplies, equipment* | *5 (11.4)* | *5 (23.8)* | *3 (42.9)* |
| *Other* | *3 (6.8)* | *3 (14.3)* | *2 (28.6)* |
| Patient perpetrated (versus visitor perpetrated) | 46 (100.0) | 41 (80.4) | 83 (72.8) |
| *Contributing factor(s) in patient-perpetrated events* [c] | | | |
| *Mental health/behavioral issues* [d] | *31 (67.4)* | *26 (63.4)* | *35 (42.2)* |
| *Medication/alcohol/drugs/pain* [e] | *30 (65.2)* | *24 (58.5)* | *47 (56.6)* |
| *Conflict/unhappy with care* [f] | *11 (23.9)* | *19 (46.3)* | *54 (65.1)* |
| *Not sure* | *2 (4.3)* | *4 (9.8)* | *10 (12.0)* |

[a] sub-types of type II violence are mutually exclusive and defined as: physical assault (which may also include physical threat and/or verbal abuse); physical threat (which may also include verbal abuse); and verbal abuse only.

[b] Includes bathroom, phone/telephone, and other areas

[c] nested frequencies and proportions denoted by italics; not mutually exclusive

[d] Includes altered mental status, sundowning, behavioral or emotional problems

[e] Includes side effects, medication withdrawal, experiencing pain, drunk/illicit drugs

[f] Includes unhappy with care received, patient-doctor conflict, patient-familiy conflict, receiving bad news

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## E.8. Circumstances surrounding episodes of patient/visitor-on-worker (Type II) violence against hospital workers: Insights from victims ascertained from in-depth telephone interviews

### Background

Violence perpetrated against hospital workers by patients and/or visitors (type II violence), both physical and verbal in nature, has become a serious workplace safety issue and a growing public health concern. Recent studies have demonstrated 12-month prevalence of reported workplace violence assaults experienced by nursing staff and physicians ranging from 24% to 74%, with verbal assaults ranging from 23% to 80% [Hesketh et al., 2003; May et al., 2002; Kowalenko et al., 2005]. These estimates are considered conservative as several studies have observed significant under-reporting of violent episodes experienced by hospital workers [Lanza, 1983; Duncan et al., 2001]. Violence perpetrated by patients, patients' family members or friends is the most common type of violence reported in this setting [Islam et al., 2003; Richardson et al., 2003]. The lack of standardized surveillance methodology to capture cases of workplace violence, as well as details about the circumstances surrounding these in the hospital setting [Peek-Asa et al., 2001], means that policy development is often made on an ad hoc basis or triggered by sentinel events.

In a survey that was part of our larger study, we observed the 12-month prevalence of type II violence was 39% (n=2,098) among 5,385 respondents. In order to capture more detail about the violent events experienced by hospital employees, victims of type II violence in the last 12 months were invited to participate in a 20-minute telephone interview. The purpose of these interviews was to ascertain contextual details prior-to, during, and post-violent event – including adverse consequences on the part of the worker. In addition, we sought to learn more about factors that influenced the reporting of these events through formal and informal channels.

**Methods**

This study took place in two large general medical hospital systems in Texas (TX) and North Carolina (NC); each consisted of one level-three trauma center and two community hospitals. Hospital workers from the 6 study hospitals that were likely to interact with patients and/or visitors as part of their work were invited to participate in a short, anonymous online survey referred to as the "*Blitz"* Survey*.* Survey methods and findings have been previously reported [Pompeii et al., 2015; 2016]. In brief, the survey captured demographic and occupational characteristics, career and 12-month prevalence of type II violence, as well as details surrounding one type violent event in the prior 12 months. If workers experienced more than one event, they were asked to provided details about the one event they deemed the most serious. Approximately 11,000 workers were eligible and invited to participate in the Blitz, in which 5,385 (49%) responded. Among those, 39% (n=2,098) experienced at least one type II violent event in the prior year. At the end of the survey, these workers were invited to be possibly selected to participate in an in-depth telephone interview about the event they reported in the survey. If the worker agreed, they were asked to provide their contact information (e.g., name, telephone number, email address).

Our goal was to interview 100 victims of type II violence, including 50 from each health care system in our study. The study team initially reviewed the violent event descriptions that were provided on the Blitz survey by workers who indicated willingness to be contacted for an interview. A list of candidates for interviews was generated with efforts made to include events that appeared to be more serious, in addition to selecting across sub-types of type II violence (e.g., physical assault, physical threats, and verbal abuse), and across occupational groups (e.g, nurses, nurses' aides, managers, physicians, physical therapists). The study staff then attempted to contact potential participants to schedule an interview until the goal of 100 interviews was reached. Attempts were made to contact participants no more than 4 times.

The telephone interview was designed to capture details with respect to circumstances before the event occurred, during the event, and then post-event. The pre-event details ascertained included characteristics of the perpetrator (e.g., patient or visitor); their duration of time caring for the perpetrator (or their family member/visitor) before the event occurred; how well they felt they knew the perpetrator before the event occurred; warning signs of violent behavior based; their knowledge of prior violent behavior by the perpetrator (e.g., coworker informed them that patient was previously violent), and their workload on the day of the event relative to a typical workday.

The event details included the worker's perception of perpetrator factors that contributed to the event. For example, for patient perpetrators factors such as patient in pain, drug seeking, feeling scared, and/or long wait times. For non-patient perpetrators (e.g., family members, visitors), factors such feeling concerned about patient's care, receiving bad news, and conflict between visitor and patient. We also asked the types of activities or care being provided when the event occurred (e.g., patients - bathing/dressing, examining, restraining, medical procedure, sitting with them, escorting), visitors- talking with them (in person or over the phone), working in isolation or in the presence of co-workers and/or observers; and environmental conditions such as lighting; and mitigation activities that were employed during the event, their solicitation for help, and responses received.

Post-event details ascertained included reporting of the event through official and non-official channels and responses to reporting, management follow-up, reporting of events. Finally, victims were queried about personal consequences of the event (e.g., fear of being at work, considering leaving job), and their recommendations for improving workplace violence surveillance and prevention efforts at their institution.

**Data Analysis**

Basic descriptive statistics were used to examine quantitative responses and content analysis was used to summarize free text data collected in response to more open-ended

questions. Interviews were conducted by trained members of the research team who contacted potential participants using the contact information provided (email or phone number) when they responded to the *Blitz* survey. The purpose of the study was explained and verbal informed consent was ascertained prior to the start of the interview. Participants were incentivized $25 to compensate for their time. All procedures were approved by the institutional review boards at the University of Texas Health Sciences Center and Duke University Medical Center.

**Results**

Of 2,098 *Blitz* participants who reported that they had experienced Type II violence in the last 12-month period, 658 (31.4 %) indicated willingness to participate in an interview, in which 150 victims were selected to be contacted. Telephone interview data were collected from 104 individuals including 79 (76%) victims of patient-perpetrated violence and 25 (26%) that were victims of visitor-perpetrated violence. Approximately half of those we interviewed were nurses (n=50; 48.1%) but also included other caregivers as well as administrative and research personnel.

The majority of perpetrators were male (n=70; 67.3%); only 3 (2.8%) were 10 years of age or younger, and 3 (2.8%) were between 11 and 19 years of age. Those who were interviewed were similar to others who were willing to be interviewed but were not selected in terms of age, gender, time in the profession and at the institution, as well as whether the perpetrator was a patient of visitor. Interviewees were more likely to report being frightened by the event (57.7% vs 41.9%) or having been injured (18.3% vs 4.7%), to feel that there was an intent to harm (34.6% vs 19.9%), and the event was more likely to have involved a weapon ( 37.5% vs 19.0%). They were also more likely to have reported the event to security (37.5% vs 41.9%) or through a formal reporting system (21.2% vs 41.9%). These differences are consistent with our attempt to select individuals who were likely to have had more serious events.

**Pre-Violent Event: Knowledge of Perpetrator and Warning Signs:** In 55% (n=57) of the violent incidents the victim did not know the perpetrator, and in only seven cases (6.7%) the participant reported knowing the patient well. However, over 25% (26.8%; n=26) of the patients involved (as perpetrator or his/her visitor as perpetrator) were known to be frequently admitted to the hospital. Victims did not know how long the involved patient had been in the hospital 25% (n=26) of the time; and almost half were known to have been a patient for less than 3 days (46.1%; n=48). In less than half of the events (44.2%; n=46), the victim was responsible for providing direct care to the patient when the event occurred.

It was not uncommon for these victims of workplace violence to have received some information in advance from coworkers or others that a patient or visitor might already be, or become, violent. In 13 (12.5%) cases there was a flag or notation in the medical record regarding this potential threat. In more than half of the events (n=59; 56.7%) a co-worker had experienced difficulty with the perpetrator during the same shift as the event, and 39.4% (n=41) of the time a co-worker had difficulty in a subsequent shift with the same perpetrator.

In 39 incidents (37.5%), the staff member had been informed prior to their shift that the perpetrator was violent. Staff described that warnings sometimes occurred through observation as they came onto the work unit. It is common practice to use patient care assistants or aides as “sitters” with patients who might be unsafe when left alone or who have problematic behavior. Simply observing that a sitter was assigned to a patient was described as an indicator of existing problems. Sometimes staff members were informed through more direct, active ways such as reporting at shift change by a co-worker the staff member was relieving or a manger or through communication from the patient’s physician regarding a medical condition that might contribute to disorientation or agitation. At times, staff were informed by emergency medical services (EMS) who brought the patient to the hospital about trouble they had experienced in the ambulance or information they had secured from a long term care facility where they picked up the patient. Patients or visitors had sometimes been verbally abusive to

waiting room staff who passed the information on to the care team, and on occasion, family members provided staff with information about violence potential and things that might escalate the problem. Notes in the patient chart, older medical records, or records from an outside institution were less common sources of warnings.

Perpetrators quite typically (82.7%; n=86) displayed at least one behavioral warning sign before the violent event. The more common warning behaviors were anxiety, agitation, fear, or anger (Figure 1). A large proportion of events were preceded by the perpetrator speaking in a loud our angry tone, and/or they displayed confrontational or disrespectful behavior. Almost half of the participants indicated that they were called names by the perpetrator or rude language was directed at them. One-third indicated that the patient-perpetrator refused to stay in bed.

**Violent Events:** Although we solicited information about the episode the victim deemed most serious, it was quite common for workers to report having experienced multiple violent events in the last year [Figure 2]. Participants reported 707 times they were physically assaulted (n = 133), physically threatened (237), and/or verbally abused (n = 337). Most of the more serious violent events occurred between 9AM and 9PM and they were fairly evenly distributed throughout that twelve hour period. Workload for staff when they were victimized was described as no lighter or heavier than usual most of time (75%; n=78), and staff were generally in the area of the hospital where they usually worked (81.7%; n=85). In one-quarter of cases (n=26) the victim was in an isolated area with the perpetrator. Less often, violence occurred in areas described as crowded or chaotic (15.1%; n=16) or poorly lit (n=12; 11.5%).

The violent events reported by interviewees were varied, as planned in our sampling, and included incidents of physical violence, threats and verbal abuse. In the vast majority of violent events perpetrated by patients, the victim described a medical “reason” for the patient’s aggressive behavior. Violence involving patients with altered mental status were common; alcohol or drug abuse, stroke, head injury, and untreated psychiatric conditions were all reported. Developmental problems of children and dementia in the elderly were not uncommon.

Uncontrolled pain associated with sickle cell disease was also reported and frustrations associated with long-term illness, ICU admissions, intubation, etc. The participating hospitals are all smoke-free environments and, at times, violence arose over patients' desires to smoke that required that they leave the premises of the hospital. This could interfere with treatments or require an escort that was not available at the time. Visitor perpetrated violence was more likely to be related to concern about treatment of a patient or dissatisfaction with communication. Waiting times for activities in the hospital, miscommunication among team members about orders that had been communicated to the family, and conflicts following death of a patient were described.

**Mitigation of Violent Events:** In almost all cases (91.2%; n=94) victims reported efforts on their part or that of other staff to mitigate the severity of the event. Often staff related multiple activities that were taken to reduce severity of current or potentially pending events; some actions involved the behavior of the staff member (s) and some were directed at the perpetrator. Security (and/or local police) were called in 46 cases (44.2%). At times staff felt their presence helped control the event without further action. However, staff also reported frustration at lack of action by security and misunderstanding as to what their role should be.

Staff reported trying attempts at de-escalation including talking calmly to the perpetrator, attempting to validate concerns, or joking. Sometimes in appropriate sexual behaviors (foul language or grabbing staff) were directly addressed and sometimes they were initially ignored. Staff often called for assistance by activating a call bell or seeking assistance from co-workers, a manager, clinical social worker or security. Patient perpetrators were sometimes chemically or physically restrained or removed from the area. Staff reported concern that events could have been ameliorated if patients had been sedated more quickly. It was less common that longer-term solutions were reported by staff such as team meetings or conferencing with family to make plans for going forward.

**Post-Violent Events:** There was considerable variability in how victims chose to report violent events ranging from not reporting at all (n=9; 8.7%) to reporting to multiple people. In fact, it was not uncommon for victims to report the event to multiple people or through more than one channel. Managers, charge nurses, and co-workers were most often involved and it was not uncommon for notes to be made in the patient's chart or their physician to be notified. Security was more likely to be called if the person attributed the violent behavior to a behavioral problem as opposed to a physical illness. Of note, even when multiple channels were used, it was rare that victims used a formal reporting system such as SRS or patient safety.

Staff rarely knew of any actions that occurred as a result of a formal report of a violent event. In fact, the single most common result of reporting was described as 'nothing'. The system was described as a 'black hole' with staff rarely receiving notification that their report had been received by anyone. Staff described feeling ignored or that their concerns were not viewed as important by the institution. However, one person mentioned specifically that formal reporting was important because multiple reported events can lead to changes. She cited some longer term solutions tried as a result of multiple reports including unit level plans if there were a more aggressive perpetrator or a perpetrator with a weapon, a designated code to use for immediate security help, and nursing huddles to strategize over existing problems.

In contrast reporting directly to a manager or charge nurse was viewed as more likely to result in actions. These might include a 'sitter' or personal care assistant being assigned to be with the patient continuously, the staff member being removed from the care of the patient, the patient perpetrator being restrained or medicated or being assigned a psychiatric consultation. Managers and charge nurses organized both formal and informal debriefings, and one victim's manager recommended the NCI training course to help prevent future episodes. Examples of preventive strategies were described for pediatric patients that came about through family/staff/therapist meetings including use of ant-anxiety medications surrounding procedures. One staff member described what she described as use of the "male card," meaning a male

staff member would be assigned to care for patients who had been violent. When staff were removed from care of a violent patient, or a patient with a threatening visitor, but no other action occurred to ameliorate the situation it was not necessarily viewed as positive. Staff also complained that assigning a 'sitter' was not necessarily helpful or appropriate as they often lacked appropriate skills for dealing with a violent patient.

Mixed reactions were elicited to actions of security personnel who were notified. Some described security as helpful simply by being present; other times victims found security resistant to do anything. Staff sometimes wanted protection and did not feel that security was helpful. Nursing staff at times described feeling like they were "left out on their own" by the security personnel who responded. In a few cases a visitor perpetrator was removed from the premises or handcuffs or a Taser was used. On one occasion a patient was arrested.

**Consequences of Violence:** Consequences of these more serious violent events to the victimized health care worker were common (Figure 4). The vast majority of the victims we spoke with confirmed, as reported in the *Blitz* survey, that they had been injured (n=92; 88.5%) and had missed work (n=90; 86.5%). Nearly half (45%) reported feeling stressed at work and 25% had considered leaving their current job or the profession as a result. Lesser, but not insignificant percentages, reported decreased job satisfaction, fear at work, or difficulty performing their job duties. Occasionally staff reported asking security to walk them to their car after a shift, un-listing their phone number, or not wanting to wear their name badge. A number of staff had received NCI training including de-escalation and self-protection strategies after a violent event and felt that all staff should be required to do so.

**Recommendations by Workers:** These individuals who had been victims of violent events at work made concrete suggestions for improvements the institution should make. A number of suggestions were made around the reporting of violent events.

Staff described lack of time at work to officially report events through SRS/PSN. Violent patients or visitors were common and many events were never reported. This comment from an

ED staff member was consistent with comments of employees in other areas of the hospital as well:

> *"Many, many [violent events] happen [in the ED] -- we just do not report them in the system. I would have to do the report from home or stay after a 12-hour shift to have time. We just don't have time; we don't even report blood and body fluid exposures."*

Others tried to use a reporting system and recommended others do so as well. Calls were made for a short, simple, and easy means of reporting and education of staff that all events should be reported; they thought the institution needed to make it clear what kind of violent events they wanted to know about. There were also suggestions to clarify roles surrounding reporting. One nurse who had reported to her manger thought that the manager would have done the official reporting, but she was unsure if that actually happened in retrospect.

It was clear that they did not want to be burdened with another task of reporting if nothing came of it. Along those lines, a number of recommendations were made, not for the reporting process but rather, for what should be done in response to a report. Staff described feeling that that in the current system they often *"report into a black hole."*

> *"It is pretty clear what to report, but it's not clear what happens to the information when it is reported."*

> *"The PSN is just more paperwork. I report in the patient chart to communicate with colleagues, but reporting is not going to help."*

> *"Someone needs to call the injured employee and tell them 'we are listening.' "*

Others described things that were needed to prevent or mitigate violent events.

> *"Reporting is not the problem. The problem is sitters without training and not enough resources."*

> *"Everyone needs training in violence prevention, de-escalation and how to protect yourself. Most staff do well within the skill sets they have, but we all need better skills. Some are already better trained to deal with it than others. [There should ] be required training , refresher modules and clear policies from the institution."*

> *"[We] need some way to flag patients who have exhibited violent behavior in the past."*

*Situations were described where staff did not feel that there were listened to by other members of the care team or where better communication would be a help to staff and patients.*

*"[There are ]cases in which docs don't see violent behaviors and they do not want to acknowledge the need for restraints or meds. Sometimes patients are really dangerous… They need to sit with these patients for 12 hours and see what happens."*

*"Communication needs to be wide open (nurses, doctors, therapists, sitters); everyone is really busy and there is not enough strategizing about what we [as a team] should do (especially with brain injured patients)".*

It was clear that staff felt some violent events are not preventable, and participants described how help was needed quickly when there were problems, and that these needs should be viewed as system problems.

*"We need interventions quickly when patients are identified that are creating consistent problems for staff -- it should be a group problem not an individual staff [issue]."*

*"A multi-discipline approach is needed because [the violence] affects all people that go into that patient's room. So, it will take all parties involved to keep this patient under control."*

*'[Sexual advances are not uncommon] in radiology; at first sign, we need to address [the behavior] instead of trying to push through it [even though the patient needs the test].'*

*"We need Behavioral Assessment Teams [who can intervene quickly when there are warning signs]."*

*"[We should be] doing delirium screening in the ICU, using ICU cam tool, assessing ability to follow instructions, an d so forth. This could help get more resources."*

*"[We should have] agreement we are all to be involved in enforcement of normal behavior on the unit."*

*"There needs to be a no tolerance policy for visitors who act this way."*

Conflicts were described in meeting patient needs, protecting staff and juggling the importance given to patient satisfaction by the institutions.

*"The hospital is too 'customer oriented' now."*

*"[They need] to be more receptive to employees when it comes to patient–employee relations. They need to listen to employees concerns as well, instead of just being about the patient."*

*"Lack of support for staff who wanted to file a police report … on their own time"*

Comments regarding the role of security where quite mixed and documented considerable ambiguity about their roles.

*"There needs to be clarity about (hospital x) security role. Security was called but they just stood to the side as staff had to physically tackle the patient."*

*"I feel safe and comfortable at work, because when we call security they are there."*

*"Security needs to be more proactive."*

*"Just presence of security can contain events …. Security is pretty good at responding and controlling the patient. The amount of security staff is adequate and works well."*

From a manager *"Staff know to call security as end resort -- but to try to deal with things on their own first."*

*"Police is called in but not hospital security, because security is not allowed to touch the patient. But the police is only called as a last resort."*

Some recommendations would likely be impossible to attain, but they still raise issues about how to appropriately support staff who have been victimized.

*"Enforce a "no tolerance" policy - if patient (or visitor) is violent they should be removed from hospital."*

Of particular note, participants often thanked the interviewers for contacting them and allowing them to talk about these events.

*"Great idea … I hope something positive comes out of it and hope it does not take 5 years."*

**Discussion**

We solicited information directly from hospital employees who had reported an episode of type II violence perpetrated against them in the last year. The population who provided these data was not intended to be representative of all healthcare workers at these hospitals who had experienced type II violence. First, we intentionally sought out individuals who had a variety of violent events and who appeared to have more serious events based on their responses to a short, 5 minute blitz survey sent to all staff. Further, all participants had indicated that they were willing to participate in a 20-minute telephone interview. The goal of this endeavor was to garner detail on type II violence that could be useful in designing better surveillance resources. We learned a number of useful things in this process.

In large part, these more serious violent events involved patients with significant medical problems that likely contributed to their violent behavior. Failure on the part of victims to report was often influenced by this knowledge, with staff feeling that it was "just part of the job" or that reporting implied a punitive action towards their patient. Consequently, information about the

events does not get into existing surveillance sources where it might be used to help plan preventive strategies.

Sometimes patients had been on the unit before and occasionally the staff member had some prior experience with the patient. While victims were often delivering direct patient care, in over half of the cases involving a patient perpetrator, the victim was not responsible directly for the patient's care. This clearly indicates that it is not enough for staff to be vigilant about their own patients for whom they may have a heads-up regarding risk and, perhaps, some time to strategize about mitigation.

The fact than nearly 40% of events occurred after staff had been warned of potential violent behavior from the perpetrator when they came on their shift, would seem to indicate that opportunities for prevention might be being missed. Further, victims reported that warning behaviors of perpetrators themselves were not uncommon. However, in almost all cases victims reported attempts to mitigate the severity of events. In some cases it was clear that the victim did not feel they had the necessary skills or that appropriate resources or support were not available expediently. Consistent with this, staff most often reported violent events to others on the care team, -- a manager, charge nurse, co-workers or physician.

These hospital workers described frustrations with existing formal reporting systems that need to be addressed in developing an improved surveillance methodology for hospitals. Clarification of roles surrounding reporting is needed; currently it is entirely unclear if a supervisor (manager, charge nurse) is told, whether the event is then officially reported or not. Further, staff need to know that reporting actually matters; feedback to victims is essential to acknowledge the event, offer appropriate support, and to strategize about prevention.

In these interviews with victims, we also see evidence that violence in healthcare could influence patient safety by creating fear in staff, the need for constant vigilance, and difficulties performing duties. Longer term and more widespread effects could be realized through increased job dissatisfaction and loss of personnel to the profession.

The use of a set of predetermined items and open-ended items that allowed respondents to share aspects of the violent event that they thought were important. We feel we got a more comprehensive view of, not just the event, but also the magnitude of distress experienced by staff that was not always appreciated in review of quick blitz data. We recognize that we selected to follow-up with reported cases that appeared more serious; these were specifically those we wanted to reach. Type II violence against hospital health care workers – demonstrated in the Blitz survey – was pervasive. It was unrealistic to interview everyone in depth. While seeking to reach individuals who had a variety of experiences, we felt more could be learned from intentionally focusing on reports that appeared to be more severe.

**Conclusions**

It seems likely that serious time commitments and resources will be required to prevent type II violent events perpetrated against health care workers in hospitals for which there are warning signs. Some of the participating institutions now have efforts underway to achieve improvements in preventive responses such as development of multi-disciplinary behavioral assessment teams who can be called upon for rapid assessment and suggestions regarding intervention strategies. There are also needs for rapid response and adequate support when prevention efforts fail or are inadequate.

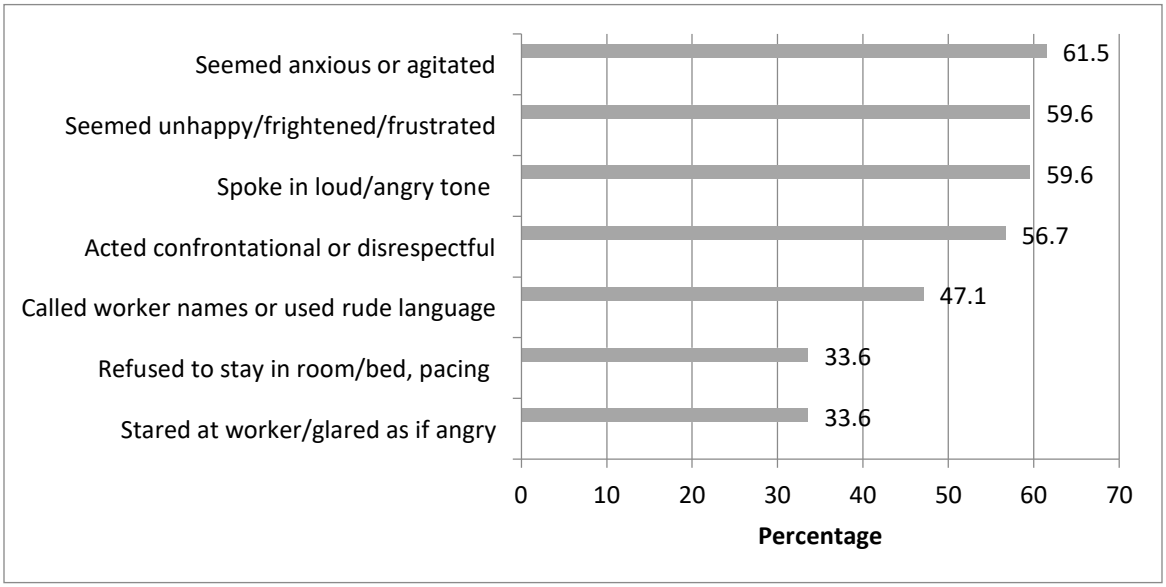
It is abundantly clear that there are needs to develop more standard channels of communication through which staff report concerns about violence to co-workers. From these analyses it certainly seems reasonable to advise staff to heed warning signs they get from their co-workers about potentially violent patients or visitors, however these data did not allow an appraisal of how often they may receive warnings when nothing occurs. It was also clear that staff often tried mitigation strategies that were less than entirely successful. Staff want more training in recognition of warning signs and management techniques, for themselves and for support staff such as sitters, and they want expedient response when containment attempts fail.

Failure to adequately deal with the pervasive nature of violence against health care workers has consequences for victims that likely extend to patients.

Reporting of type II violence should not be viewed as punitive. Workers need to know that violence perpetrated against them needs to be reported regardless of whether they can attribute the behavior to a medical condition or stress or not. However, any push to improve surveillance needs to be accompanied by actions that let workers know something is happening to the information they take the time to report. They are too busy to report to a "black hole."

These findings demonstrate the utility in going directly to affected workers in trying to understand and improve work conditions surrounding episodes of type II violence. Periodic targeted active surveillance efforts, such as this one, should be considered more often as we seek to better understand, intervene, and monitor progress in control efforts. The work further support calls for use of a variety of surveillance efforts to adequately capture needed information on workplace health and safety [Davis et al., 2014; Reville et al., 2001; Wuellner and Bonauto, 2014; Lipscomb et al., 2010; Lipscomb et al., 2014].

Figure 1. Behavioral warning signs displayed by perpetrator prior to violent event




* Behaviors are not mutually exclusive.

Figure 2. Number of patient/visitor perpetrated violent events incurred in the prior 12 months by Hospital Worker Participants (n=104)

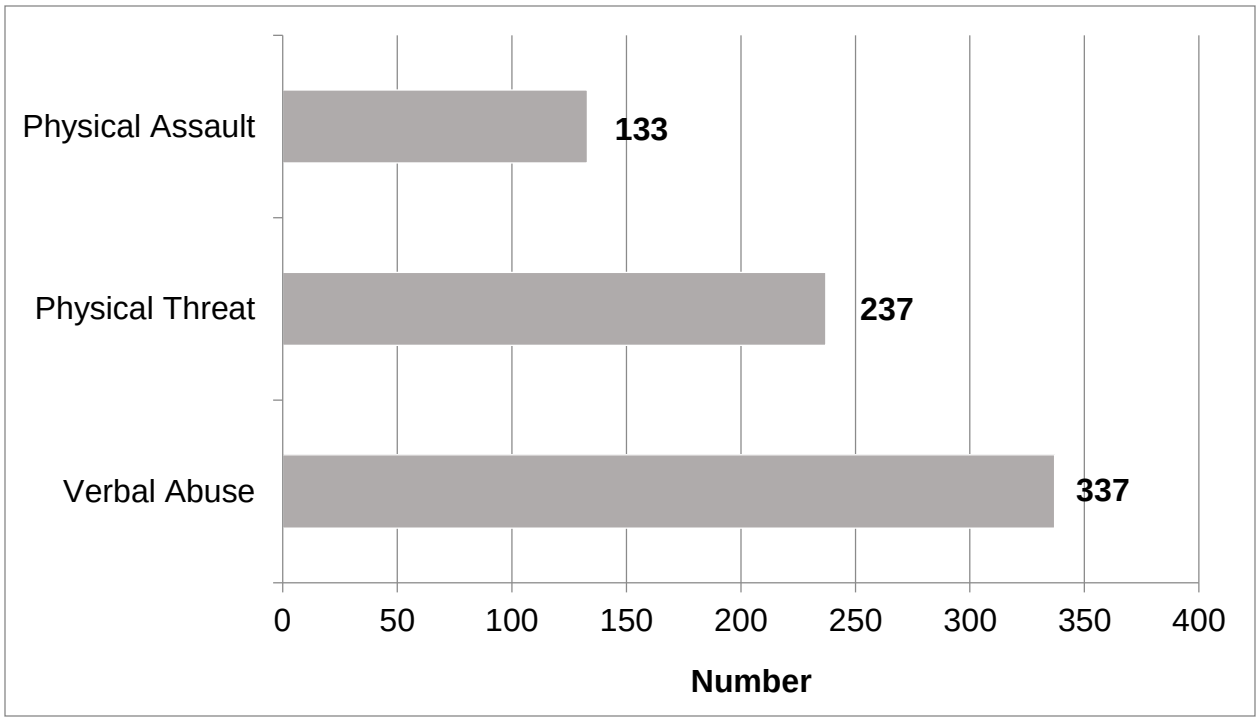


Figure 3: Patient-Related Activity at Time of Violent Event in Prior Year (n = 104)

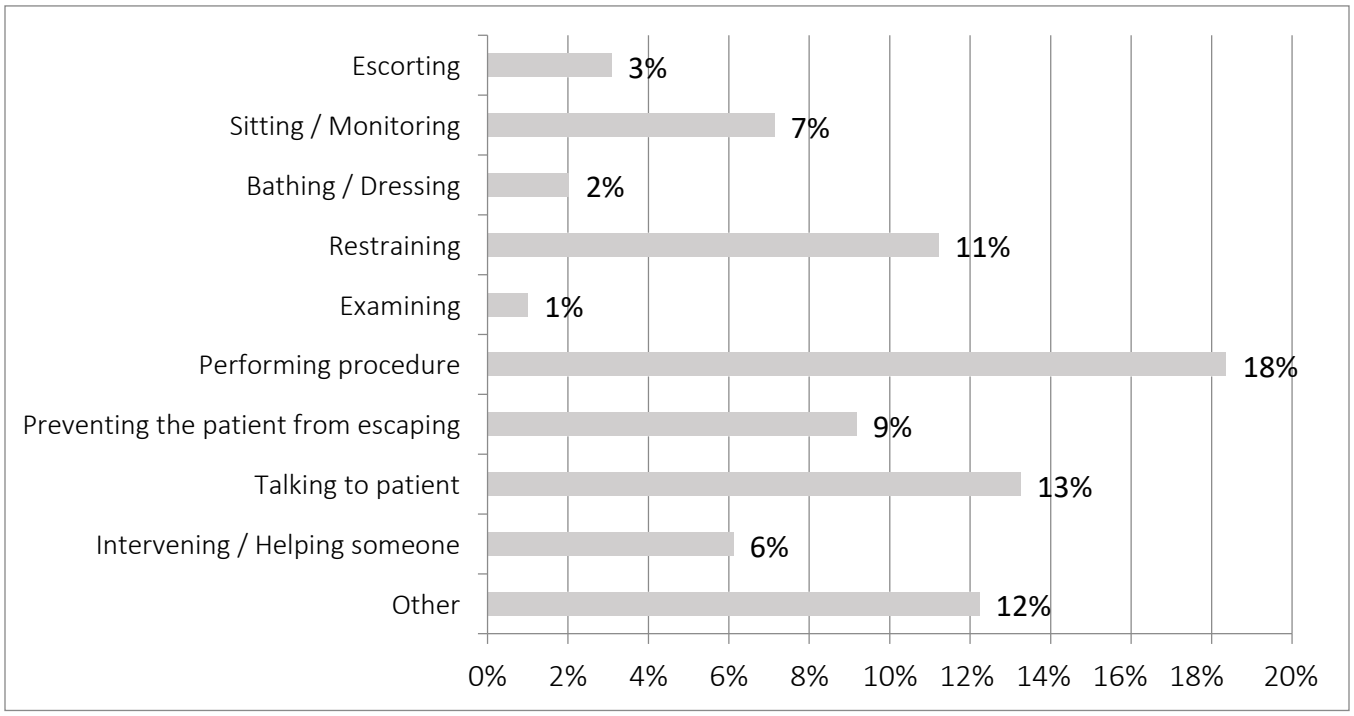
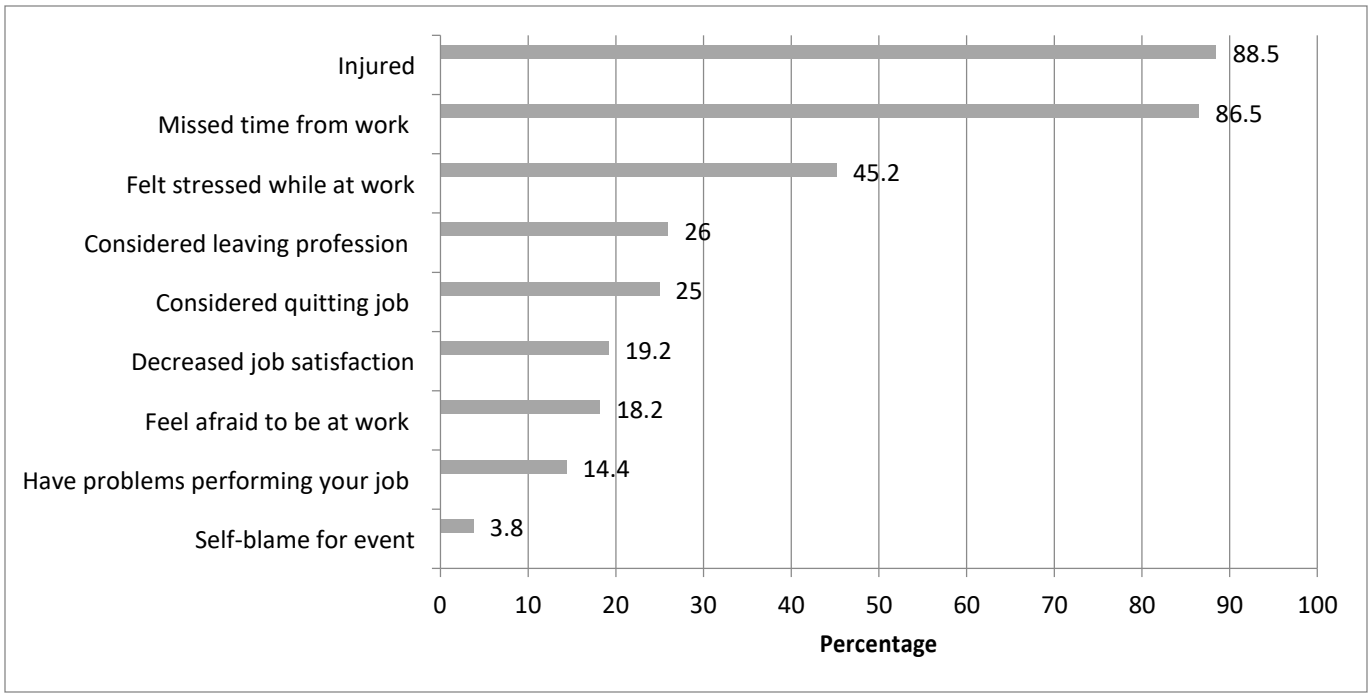


Figure 4. Consequences experienced by victims of type II violence (n=104) reported in telephone interviews




*Categories are not mutually exclusive

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Pompeii LA, Schoenfisch AL, Lipscomb HJ, Dement JM, Smith CD, Upadhyaya M. Physical assault, physical threat, and verbal abuse perpetrated against hospital workers by patients or visitors in six U.S. hospitals. *Am J Ind Med*. 2015;58(11):1194-1204. DOI: 10.1002/ajim.22489

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**F.1. Peer-Reviewed Publications**

| | |
|---|---|
| 1 | Pompeii L, Dement J, Schoenfisch A, Hansen AM, Holderness M, Smith CD, Lipscomb HJ. Perpetrator, worker and workplace characteristics associated with patient and visitor perpetrated violence (type II) on hospital workers: A review of the literature and existing occupational injury data. *J Safety Res*. 2013;44:57-64. DOI: 10.1016/j.jsr.2012.09.004 |
| 2 | Dement JM, Lipscomb HJ, Schoenfisch AL, Pompeii LA. Impact of hospital type II violent events: Use of psychotropic drugs and mental health services. *Am J Ind Med*. 2014;57(6):627-639. DOI: 10.1002/ajim.22306 |
| 3 | Pompeii LA, Schoenfisch AL, Lipscomb HJ, Dement JM, Smith CD, Upadhyaya M. Physical assault, physical threat, and verbal abuse perpetrated against hospital workers by patients or visitors in six U.S. hospitals. *Am J Ind Med*. 2015;58(11):1194-1204. DOI: 10.1002/ajim.22489 |
| 4 | Schoenfisch AL, Pompeii LA, Lipscomb HJ, Smith CD, Upadhyaya M, Dement JM. An urgent need to understand and address the safety and well-being of hospital "sitters". *Am J Ind Med*. 2015;58(12):1278-1287. DOI: 10.1002/ajim.22529 |
| 5 | Pompeii LA, Schoenfisch AL, Lipscomb HJ, Dement JM, Smith CD, Conway SH. Hospital workers bypass traditional occupational injury reporting systems when reporting patient and visitor perpetrated violence. *Am J Ind Med*. July 2016: Early View: DOI: 10.1002/ajim.22629 |
| **Manuscript In Progress** | |
| 6 | Patient and Visitor Perpetrated Violence on Nurse Managers: A Call for Support from Hospital Administration |
| 7 | Hospital Emergency Department Workers' Experiences with Violent Patients and Visitors: "It's Incredibly Frustrating to Not Feel Safe in a Workspace" |
| 8 | Circumstances surrounding episodes of patient/visitor-on-worker (Type II) violence against hospital workers: Insights from victims ascertained from in-depth telephone interviews |

## F.2. Scientific Presentations

| | |
|---|---|
| 1 | Pompeii, L. A., Dement, J. M., Smith, C., Schoenfisch, A. L., Lipscomb, H. J., Hansen, A. M., & Jimenez, M. Developing a comprehensive hospital violence surveillance system: Findings from a baseline needs assessment. 5th National Occupational Injury Research Symposium. Morgantown, West Virginia. 2011. |
| 2 | Dement, J. M., Schoenfisch, A. L., Pompeii, L. A., Lipscomb, H. J., Smith, C., Hansen, A. M., & Jimenez, M. Patient-related violence experienced by workers in a large hospital system. 5th National Occupational Injury Research Symposium. Morgantown, WV. 2011. |
| 3 | Pompeii LA, Schoenfisch AL, Dement JM, Jones T, Lipscomb HJ, Smith. The Prevalence, Circumstances and Reporting of Patient/Visitor-on-Worker (Type II) Violence in 6 U.S. Hospitals. EPICOH 2013, Utrecht, The Netherlands. June 2013. |
| 4 | Pompeii LA, Schoenfisch AL, Dement JM, Smith C, Lipscomb HJ, Jones T, Upadhyaya M. Recommended Elements of a Hospital Based Workplace Violence Surveillance System. Safe Today, Safer Tomorrow: The 2013 National Meeting of the Safe States Alliance & SAVIR. Baltimore, MD, 2013. |
| 5 | Schoenfisch AL, Pompeii LA, , Dement JM, Upadhyaya M, Jones T, Smith C, Lipscomb HJ, Type II Violence in Six US Hospital Emergency Departments. The 2013 National Meeting of the Safe States Alliance & SAVIR. Baltimore, MD, 2013. |
| 6 | Schoenfisch AL, Pompeii LA, Lipscomb HJ, Dement JM. Violence Perpetrated by Hospital Patients and Visitors (type II) Against “Sitters”. EPICOH, Chicago, IL June 2014 |
| 7 | Pompeii LA, Schoenfisch AL, Lipscomb HJ, Dement JM, Upadhyaya M. “The Management of Patient/Visitor (Type II) Violence by the Hospital Unit Nurse Manager and Staff.” EPICOH. Chicago, IL June 2014. |
| 8 | Schoenfisch AL, Pompeii LA, Lipscomb HJ, Dement JM. Society for the Advancement of Violence and Injury Research. “The importance of worksite community-engagement in understanding workplace violence prevention opportunities: Examples from the Hospital Violence Surveillance System study.” August 2014. |
| 9 | Pompeii LA, Schoenfisch AL, Lipscomb HJ, Dement JM, Smith C, Upadhyaya M. “Workplace Violence: What Gets Reported by Workers in the Culture of Caring?” 4th International Conference on Violence in the Health Sector. October 2014. **Winner of Best Scientific Abstract** |
| 10 | Schoenfisch AL, Pompeii LA, Lipscomb HJ, Dement JM. “An Urgent Need to Address the Safety and Well-Being of Hospital “Sitters” 4th International Conference on Violence in the Health Sector. October 2014. |
| 11 | Schoenfisch AL, Pompeii LA, Lipscomb HJ, Dement JM. “Continuous observation of patients in the general hospital setting: Early insight into the occupational safety and health of ‘sitters.’ ” Carolina Collaborative for Research on Work and Health’s Fall 2014 Speaker Series. Gillings School of Global Public Health, UNC-Chapel Hill. |
| 12 | Pompeii LA, Schoenfisch AL, Lipscomb HJ, Dement JM, Smith C. “Contextual Factors: What Gets Reported as Workplace Violence in Hospitals?” APHA November 2014. |
| 13 | Schoenfisch AL, Pompeii LA, Lipscomb HJ, Dement JM. “When Violence is “Part of the Job”: Effects on Workers, Research Approaches and Researchers.” APHA. November 2014. |

| | |
|---|---|
| 14 | Schoenfisch AL, Pompeii LA, , Dement JM, Upadhyaya M, Jones T, Smith C, Lipscomb HJ, "Violence perpetrated by patients and visitors against hospital workers: Results from the ongoing Hospital Violence Surveillance System project." Gillings School of Global Public Health, UNC-Chapel Hill. National Occupational Research Agenda's Interdisciplinary Seminar Series. North Carolina Occupational Safety and Health Research Center. 2015. |
| 15 | Pompeii LA, Schoenfisch AL, Lipscomb HJ, Dement JM, Smith C. "Surveillance of Patient/Visitor Perpetrated Non-Fatal Violence Against Healthcare Workers." National Research Center for the Working Environment. Copenhagen, Denmark. April 2015. |
| 16 | Schoenfisch AL, Pompeii LA, Lipscomb HJ, Dement JM. "Type II Workplace Violence Against Sitters." The University of Texas Health Science Center at Houston, 2015-2016 NIOSH ERC Traineeship Program Seminar Series. Houston, Texas. |
| 17 | Pompeii LA, Schoenfisch AL, Lipscomb HJ, Dement JM, Smith C. "Surveillance of Patient/Visitor Perpetrated Non-Fatal Violence Against Healthcare Workers." AAOHN National Conference. Jacksonville, FL, May 2016. |
| 18 | Pompeii LA, Schoenfisch AL, Lipscomb HJ, Dement JM, Smith C. "Tools for Measuring Workplace Violence in Healthcare: The Hospital Violence Surveillance Study." AOHP National Conference. Myrtle Beach, SC. September 2016. |
| 19 | Pompeii LA, Schoenfisch AL, Lipscomb HJ, Dement JM, Smith C. "Tools for Measuring Workplace Violence in Healthcare: The Hospital Violence Surveillance Study." Deep South Center for Occupational Safety & Health. April 2016.(invited lecture) |
| 20 | Pompeii LA, Schoenfisch AL, Lee J. "Workplace Violence: An Overview of Violence Types, Risk Factors, Workers at High Risk, and Prevention Strategies" American Association for Occupational Health Nurses – North Carolina State Chapter, Annual Meeting. Durham, NC. October 2016. (invited lecture) |
| 21. | Schoenfisch AL, Pompeii LA, , Dement JM, Upadhyaya M, Jones T, Smith C, Lipscomb HJ, "Workplace Violence Against Vulnerable Workgroups." American Association for Occupational Health Nurses – North Carolina State Chapter, Annual Meeting. Durham, NC. October 2016. (invited lecture) |

## F.3. Notable Citations of Study Findings

| | |
|---|---|
| 1 | U.S. Government Accountability Office. GAO Report on Workplace Violence: April 14, 2016. http://www.gao.gov/products/GAO-16-11. Based on: Pompeii LA, Schoenfisch AL, Lipscomb HJ, Dement JM, Smith CD, Upadhyaya M. Physical assault, physical threat, and verbal abuse perpetrated against hospital workers by patients or visitors in six U.S. hospitals. *Am J Ind Med*. 2015;58(11):1194-1204 |
| 2 | AHC Media, March 7, 2016: "Healthcare violence now a public health issue: moving beyond limited occupational risk view." Based on Pompeii LA, Schoenfisch AL, Lipscomb HJ, Dement JM, Smith CD, Upadhyaya M. Physical assault, physical threat, and verbal abuse perpetrated against hospital workers by patients or visitors in six U.S. hospitals. *Am J Ind Med*. 2015;58(11):1194-1204. |
| 3 | AHC Media, March 7, 2016: "Patient "sitters' at high risk of violence, physical threats" and "Patient sitters' disturbing, firsthand encounters." Based on: Schoenfisch AL, Pompeii LA, Lipscomb HJ, Smith CD, Upadhyaya M, Dement JM. An urgent need to understand and address the safety and well-being of hospital "sitters". *Am J Ind Med*. 2015;58(12):1278-1287. |
| 4 | Lipscomb J, London M. "Not Part of the Job: How to Take a Stand Against Violence in the Work Setting." http://www.nursesbooks.org/Table-of-Contents/Staffing-Workplace/Not-Part-of-the-Job-How-to-Take-a-Stand-Against-Violence.aspx<br>Focus group data collected as part of our study was provided to Dr. Lipscomb and was incorporated in several sections of her book. |

## Appendix A: The Blitz Survey

# Workplace Violence Blitz Survey

Dear …..Employee:

We are asking you to take part in a study being conducted by researchers at the University of Texas School of Public Health. The sponsor of this study, the National Institute for Occupational Safety and Health (NIOSH), is paying researchers at The University of Texas to conduct this study.

The purpose of this study is to establish a reporting system that captures episodes of workplace violence inflicted on hospital workers by **patients and visitors**.

This study is taking place at ……..

This short survey asks questions about your experiences with being physically assaulted or threatened with assault by a patient or hospital visitor while at work **in the past 12 months**.

Your participation in this survey is strictly voluntary. This survey is **anonymous** unless you decide to provide your contact information at the end of the survey. None of your personal information will be shared with anyone, including your employer. The information we collect from this survey will only be reported in a summary format.

Thank you for choosing to participate in our brief on-line survey. This should take no longer than 5 minutes to complete.

Sincerely,

Lisa Pompeii, PhD
Principal Investigator

☐ **Q1. Yes, I have read the above message**

**Turn to back side of this page**

**Q2. How long have you worked in your current profession?**

- ☐ Less than 1 year
- ☐ 1 to 5 years
- ☐ 6 to 10 years
- ☐ More than 10 years

**Q3. How many years have you worked within the ?**

- ☐ Less than 1 year
- ☐ 1 to 5 years
- ☐ 6 to 10 years
- ☐ More than 10 years

**Q4. Please select one of the following that best describes your job. (Check one only)**

- ☐ Administrative
- ☐ Social Worker
- ☐ Case Manager
- ☐ Department/Unit Manager
- ☐ Food Service/Kitchen Worker
- ☐ Housekeeping/Environmental Services/Cleaners
- ☐ Laboratory/Medical Technologist
- ☐ Maintenance/Engineering
- ☐ Nurse
- ☐ Patient Care Assistant
- ☐ Nurse Manager or Department/Team Manager
- ☐ Nurse Practitioner
- ☐ Patient Care Companions/Sitters
- ☐ Patient Care Technician/Technologist
- ☐ Patient Transporter
- ☐ Pharmacist
- ☐ Phlebotomist/IV Team
- ☐ Physician (including Intern, Resident, Fellow or Attending MD), Physician Assistant
- ☐ Regulatory Readiness and Safety
- ☐ Researcher
- ☐ Security/Police
- ☐ Supply Services
- ☐ Technologist/Therapist (e.g., physical, occupational, radiologic, CT, rehabilitation, speech, respiratory, and other technology workers).
- ☐ Volunteer
- ☐ Other Job (please specify):

_____

**Go to the next page** ☞

**Q5a. Please indicate the hospital where you currently work. (Check one only)**

LEFT BLANK

**Q5b. Please select one of the following that best describes the Department where you work. (Check one only)**

- ☐ Auxiliary Services
- ☐ Cardiology
- ☐ Emergency Department
- ☐ Environmental Services
- ☐ Float Pool
- ☐ Food Services
- ☐ Holcombe Clinic
- ☐ Kirby Glen Clinic
- ☐ Medical Staff
- ☐ Nursing
- ☐ Nursing Education
- ☐ Outpatient Clinic/Services
- ☐ Pastoral Management
- ☐ Patient Escort Services
- ☐ Patient Safety
- ☐ Pearland Clinic
- ☐ Pharmacy
- ☐ Radiology
- ☐ Rehabilitation
- ☐ San Felipe Clinic
- ☐ Security
- ☐ Sleep Department
- ☐ Surgery/Operating Room
- ☐ Other (please Specify):

_____

**Q6. What is your gender?**

- ☐ Male
- ☐ Female

**Turn to back side of this page**

**Q7. How old are you?**

☐ 18 to 30 years
☐ 31 to 40 years
☐ 41 to 50 years
☐ 51 to 60 years
☐ 61 years and older

**Q8. Which of the following best describes your race and ethnicity? (Check all that apply)**

☐ American Indian or Alaska Native
☐ Asian
☐ Black or African American
☐ Native Hawaiian or Other Pacific Islander
☐ White
☐ Hispanic/Latino
☐ Other (Please Specify): _____
☐ Prefer Not to Answer

**Q9. Does your work at St. Luke's involve providing direct patient care, or contact with patients and visitors? Contact can include in-person contact or contact through phone calls or e-mails.**

☐ Yes
☐ No

**Go to the next page ☞**

**Q10. The following questions pertain to Physical Assault, Physical Threat and Verbal Abuse at work.**

**Physical Assault** involves aggressive physical contact such as hitting, biting, scratching, pushing, shoving, spitting and/or sexual assault. A physical injury may or may not occur when someone is physically assaulted.

**Physical Threat** involves threatening or aggressive physical behavior or physical force that makes you to feel that you may be harmed. This may involve shaking fists, throwing furniture, destroying property, having an aggressive stance, physically moving towards you, and/or moving into your physical space.

**Verbal Abuse** involves aggressive or inappropriate language that makes you feel threatened, scared and/or uncomfortable. This may involve yelling, name calling, rude language, and/or verbal bullying. This may pertain to phone calls and email.

**Q10a. During your career as a hospital worker, have you ever been physically assaulted, physically threatened and/or verbally abused by a patient or visitor?**

☐ Yes
☐ No

↓

**While at work at St. Luke's in the past 12 months, please indicate in the table below how many times you have been physically assaulted, physically threatened and/or verbally abused by a patient or visitor?**

| | | Number of Times in Past 12 Months | | | | | |
|---|---|---|---|---|---|---|---|
| | | **0 (None)** | **1** | **2** | **3** | **4** | **5 or More** |
| **10b.** | Physically Assaulted (check number of times) | | | | | | |
| **10c.** | Physically Threatened (check number of times) | | | | | | |
| **10d.** | Verbally Abused (check number of times) | | | | | | |

**If you answered "0" to all three questions (10b, 10c, 10d), please skip to question 25 on page 10.**

**Turn to back side of this page**

**Q11. Please answer the following questions about the <u>MOST serious</u> physical assault, physical threat, and/or verbal abuse that you have experienced in the past 12 months. We are asking you to only report about <u>one event</u> and not all events you have experienced in the last 12 months.**

**Was the incident in the last 12 months a physical assault, physical threat and/or verbal abuse? (Check all that apply)**

- ☐ Physical Assault
- ☐ Physical Threat
- ☐ Verbal Abuse

**Q12. Who did this to you?**

- ☐ Visitor → **Please skip to question 14 on page 7**
- ☐ Patient

↓

**Q13. In your opinion, which of the following issues concerning the patient contributed MOST to the event? (Check all that apply)**

**The patient was experiencing the following:**

- ❑ In pain
- ❑ Disoriented
- ❑ Conflict in the doctor-patient relationship
- ❑ Conflict between patient and their family member(s)/visitors
- ❑ Having side effects of medication
- ❑ Withdrawal from medication (DTs)
- ❑ Drunk or on illicit (street) drugs
- ❑ Having behavioral or emotional problems
- ❑ Receiving bad news
- ☐ "Sun downing"
- ❑ Unhappy with care received
- ❑ I'm not sure/I don't know
- ❑ Other factors (please specify):

_____

→ **Please skip to question 15 on page 7.**

**Go to the next page** ☞

**Q14. In your opinion, which of the following issues concerning the visitor contributed MOST to the event? (Check all that apply)**

**The visitor was experiencing the following:**

- ❑ Receiving bad news
- ❑ Concerned or angry about patient's care
- ❑ Emergency or acute situation with patient's health
- ❑ Long wait for care or scheduling delays
- ❑ Conflict in the doctor-patient relationship
- ❑ Conflict between visitor and patient
- ❑ Had unmet expectations of care
- ❑ Environmental factors such as crowded waiting area
- ❑ Drunk or on illicit (street) drugs
- ❑ I'm not sure/I don't know
- ❑ Other factors (please specify):

_____

**Q15. Do you think this person intended to harm you?**

- ☐ Yes
- ☐ No
- ☐ I am not sure

**Q16. Were you alone with this person when this incident occurred?**

- ☐ Yes
- ☐ No

**Q17. Were any of the following weapons or objects used when you were assaulted or threatened? (Check all that apply)**

- ❑ No weapons or objects were used
- ❑ Body part (e.g., hand, fist, foot etc)
- ❑ Gun, knife, box cutter, etc.
- ❑ Furniture/Telephone
- ❑ Food tray
- ❑ Hospital maintenance equipment
- ❑ Bodily fluids (e.g. sputum, urine, etc.)
- ❑ Medical instrument/Medical equipment
- ❑ Other object or weapon (please specify):

_____

**Turn to back side of this page**

**Q18. In what area or location did this occur?**

- ☐ Patient Room or Exam Room
- ☐ Hallway
- ☐ Waiting Room
- ☐ Elevator
- ☐ Cafeteria
- ☐ Bathroom
- ☐ Stairway
- ☐ Outdoors (in front of hospital, parking lot, parking garage)
- ☐ Other area (please specify):

**Q19. How did you share or report this information with others at work? (Check all that apply)**

- ☐ Reported the event to security
- ☐ Reported the event to my manager/supervisor
- ☐ Reported the event to my coworkers
- ☐ Reported the event to a physician
- ☐ Documented the event in the patient's chart
- ☐ Reported the event through the on-line Patient Safety Net (PSN)
- ☐ Reported the event through the on-line First Report of Injury system
- ☐ Other Methods of Reporting
- ☐ (Please specify)_____

**If you checked who you reported this event to, please skip to question 21 on page 9.**

❑ I did not report or share this event with anyone (**Please answer question 20**)

↓

**Q20. Why did you not report this event? (Check all that apply)**

- ☐ The event was not serious
- ☐ The person did not intend to hurt or harm me
- ☐ My manager already knew the person was violent
- ☐ I was concerned that I would be blamed
- ☐ I was concerned the person would hurt me again
- ☐ It is too time consuming to report
- ☐ I was not physically harmed
- ☐ Management would not do anything about it
- ☐ This is part of my job
- ☐ It happens so often that I am desensitized to it
- ☐ Other reason (please specify) _____

**Go to the next page** ☞

**Q21. Did this event make you feel frightened or worried about your personal safety?**

☐ Yes
☐ No

**Q22. Were you physically injured during this event?**

☐ Yes
☐ No

**Q23. Because of this event, did you do any of the following? (Check "None of the above" or all that apply)**

❑ Sought medical care from St. Luke's Employee Health or your personal doctor
❑ Sought counseling from the Employee Assistance Program (EAP) at St. Luke's or your personal therapist
❑ Spoke to a chaplain or minister
❑ Took one or more days off of work
❑ Other (please specify) _____
❑ None of the above

**Turn to back side of this page**

**Q24. Briefly describe what happened during this event.**

**Q25. Please tell us if you have any other comments or concerns about your personal safety pertaining to this or other events at work regarding how you are treated by others.**

**Go to the next page ☞**

**Q26.** As part of this study we are conducting telephone interviews among a sample of workers who participated in this survey so we can learn more about violent events that workers reported. All information from the telephone interviews will be treated confidentially. No one will be identified by name in any reports that we produce. We will NOT share with your employer that you have participated in this study. Participants who are selected will be compensated $25 for their time, which should take no longer than 20 minutes.

**Are you willing to be contacted about possible participation in our telephone survey?**

☐ Yes
☐ No → **Please skip to question 28.**

**Q27a.** If you are interested in participating, please provide your contact information. If you are included in the sample of workers selected to be interviewed, we will use the following information to contact you. The contact information you provide will be kept strictly confidential and will only be used to contact you. Your contact information will not be shared with anyone outside of the study.

Your Name _____

Your Preferred E-mail Address_____

Your Preferred Mail Address_____

Your Preferred Telephone Number_____

**Q27b. Please check your preferred time to be contacted to schedule at telephone interview:**

☐ Morning (8am to 12 pm)
☐ Afternoon (1 pm to 4 pm)
☐ Evening (5 pm to 9 pm)

**Q27c. Please check your preferred method to contact you to schedule this.**

☐ Email
☐ Telephone

**Q28. You have completed the survey.**

Thank you for taking the time to participate in our study.
If you have any questions, please feel free to contact us by email or telephone.

Lisa Pompeii, PhD
Lisa.pompeii@uth.tmc.edu
713-500-9474

## Instrucciones

Para moverse por la encuesta, por favor use los botones “Next [Siguiente]” y “Prev [Previo]”. NO use el botón “BACK [RETROCEDER]” del navegador.

Con el fin de mantener la información de su encuesta confidencial, NO deje su encuesta abierta cuando se retire de su computadora.

## 2. ¿Cuánto tiempo ha trabajado en su profesión actual?

- Menos de 1 año
- De 1 a 5 años
- De 6 a 10 años
- Más de 10 años

## 3. ¿Cuántos años ha trabajado dentro del BLANK University Health System [Sistema de Salud de la Universidad de BLANK] (por sus siglas en inglés)?

- Menos de 1 año
- De 1 a 5 años
- De 6 a 10 años
- Mas de 10 años

## 4. Por favor seleccione de los siguientes, uno que mejor describa el titulo de su puesto:

- Enfermera
- Asistente de Cuidado al Paciente
- Médico
- Administrador
- Transportista de Paciente
- Técnico en Radiología
- Fisioterapeuta / Labor terapeuta
- Trabajador de Limpieza / Trabajador de Servicios Medioambientales
- Trabajador de Servicio Dietético
- (will develop list based on Job Titles)

## 5. ¿En qué unidad del hospital trabaja Ud.?

- Departamento de Urgencias
- Unidad de Psiquiatría
- Unidad de Paciente Clínico / Quirúrgico
- Unidad de Parto y Alumbramiento
- Unidad de Cuidado Intensivo
- (Will develop list based on Units and Work Culture Survey)

## 6. ¿Cuál es su género?

- Masculino
- Femenino

## 7. ¿Cuántos años tiene?

- De 18 a 30 años
- De 31 a 40 años
- De 41 a 50 años
- De 51 a 60 años
- 61 años o mayor

## 8. Por favor seleccione su raza.

- Indio Americano o Nativo de Alaska
- Asiático
- Negro o Afroamericano
- Nativo de Hawái u Otro Isleño del Pacifico
- Blanco
- Multi-racial
- Prefiero No Contestar

## 9.¿Tiene que ver su trabajo en HOSPITAL con el contacto de pacientes y visitantes? Contacto puede incluir la atención directa al paciente, el contacto en persona o el contacto a través de llamadas de teléfono o e-correos. (SALTAR)

- Sí
- No

Las siguientes preguntas están relacionadas con el Asalto Físico o Amenaza de Asalto Físico en el trabajo.

El asalto físico consiste en contacto físico agresivo como golpear, morder, arañar, empujar, apartar y escupir. Una lesión física puede o no ocurrir cuando alguien es asaltado/a físicamente.

Conducta amenazante o agresiva física o verbalmente que le hace sentir miedo o temor acerca de su bienestar personal. Estas acciones consisten en expresiones verbales o físicas como el gritar, agitar los puños, destruir propiedad o lanzar objetos.

## 10. Mientras estaba en el trabajo en el DUHS (por sus siglas en inglés) en los últimos 12 meses, ¿cuántas veces ha sido asaltado/a físicamente o se ha sentido amenazado/a por un paciente o visitante? (SALTAR)

- 0 (ningún asalto)
- 1
- 2
- 3
- 4
- 5 o más veces

Por favor conteste las siguientes preguntas acerca del asalto físico o conducta amenazante MÁS GRAVE que Ud. ha experimentado en los últimos 12 meses.

## 11. Por favor conteste las siguientes preguntas acerca del asalto físico o conducta amenazante MÁS GRAVE que Ud. ha experimentado en los últimos 12 meses.

## ¿Fue este incidente de los últimos 12 meses, uno de asalto físico o uno de conducta amenazante?

- Asalto Físico
- Conducta Amenazante

## 12. ¿Quién lo/a asalto físicamente o lo/a amenazo? (SALTAR)

- Paciente
- Visitante
- Otro

Si otro (por favor, especifique)

## 13. En su opinión, ¿cuáles de las siguientes cuestiones relativas al paciente contribuyo MAYORMENTE al incidente? (Marque todas las que correspondan) (SALTAR)

## El/La paciente estaba…

- Con dolor
- Desorientado/a
- Teniendo efectos secundarios de la medicina
- Embriagado/a o con drogas (callejeras) ilícitas
- Teniendo problemas de conducta o emocionales
- Recibiendo noticias malas
- No estoy seguro/a / No se
- Otros factores

Si otros factores(por favor, especifique)

## 14. En su opinión, ¿cuáles de las siguientes cuestiones contribuyeron MAYORMENTE al incidente? (Marque todas las que correspondan) (SALTAR)

## El/La visitante estaba…

- [ ] Recibiendo noticias malas
- [ ] Enojado/a acerca de la atención al paciente
- [ ] Embriagado/a o con drogas (callejeras) ilícitas
- [ ] No estoy seguro/a / No se
- [ ] Otros factores

Si otros factores (por favor, especifique)

## 15. ¿Cree Ud. que esta persona tenía intenciones de hacerle daño?

- ( ) Sí
- ( ) No
- ( ) No estoy seguro/a

## 16. ¿Estaba solo/a con el perpetrador cuando este incidente ocurrió?

- ( ) Sí
- ( ) No
- ( ) Esto ocurrió por teléfono / e-correo.

## 17. ¿Fueron usadas algunas de las siguientes armas u objetos cuando Ud. fue asaltado(a) o amenazado(a)? (Marque todas las que correspondan)

- [ ] Ningún arma u objeto fue usada/o
- [ ] Parte del Cuerpo (e. g., mano, puño, pie, etc.)
- [ ] Pistola, cuchillo, cortador de cartón, etc.
- [ ] Muebles
- [ ] Instrumento médico / Equipo médico
- [ ] Otro objeto o arma

Si otro objeto o arma (por favor especifique)

## 18. ¿En que área o sitio del hospital ocurrió esto?

- ( ) Cuarto del Paciente o Sala de Examen
- ( ) Unidad de Pacientes / Pasillo
- ( ) Sala de Espera
- ( ) Elevador
- ( ) Cafetería
- ( ) Afuera, pero en propiedad del hospital
- ( ) Otras aéreas

Si otras aéreas del hospital (por favor, especifique)

## 19. ¿Cómo compartió o dio a conocer esta información a otras personas en el trabajo? (Marque todas las que correspondan)(SALTAR)

- No reporte el incidente a nadie
- Reporte el incidente a Seguridad
- Reporte el incidente al administrador
- Reporte el incidente a mis compañeros de trabajo
- Reporte el incidente a un médico
- Documente el incidente en el expediente clínico
- Reporte el incidente en línea a través del Safety Reporting System [Sistema de Reportajes de Seguridad] (SRS por sus siglas en inglés)
- Reporte el incidente en línea a través del sistema First Report Injury [Primer Reporte de Lesión]

Otros Métodos de Reportar (por favor, especifique)

## 20. ¿Por qué no reportó el incidente? (Marque todas las que correspondan)

- El incidente no fue serio
- La persona no tenía la intención de hacerme daño
- El administrador y mis compañeros de trabajo ya sabían que la persona era violenta
- Me preocupaba que me culparan a mí
- Me preocupaba que la persona me hiciera daño otra vez
- Toma demasiado tiempo para hacer el informe
- No fui dañado físicamente
- La administración no iba hacer nada al respecto
- Es parte del trabajo
- Otra razón

Si otra razón por la cual no reportar (por favor, especifique)

## 21. ¿ Este incidente, ¿le hizo sentirse con miedo o preocupación acerca de su seguridad personal ?

- Sí
- No

## 22. ¿Fue Ud. lesionado/a físicamente durante el incidente?

- Sí
- No

## 23. Debido a este incidente, ¿hizo Ud. algunas de las siguientes? (Marque todas las que correspondan):

- [ ] Buscar atención medica
- [ ] Buscar orientación o consejo profesional
- [ ] Tomar uno o dos días de descanso del trabajo
- [ ] Otro

Si otro (por favor, especifique)

## 24. Brevemente describa lo que sucedió durante el incidente.

## 25. Por favor díganos si Ud. tiene preocupaciones o comentarios acerca de su seguridad personal en el trabajo con relación a como Ud. es tratado/a por otras personas.

Como parte de este estudio estamos haciendo entrevistas por teléfono entre una muestra de trabajadores quienes participaron en esta encuesta para que podamos aprender más acerca de incidentes violentos que los trabajadores reportaron.

Toda la información de las entrevistas de teléfono será tratada con confidencialidad. Nadie será identificado/a por nombre en ningún informe que produzcamos. NO vamos a compartir con su empleador que Ud. ha participado en este estudio.

Los participantes seleccionados serán compensados económicamente con $25 por su tiempo, que no tardara más de 20 minutos.

## 26. ¿Esta Ud. dispuesto/a a ser contactado/a acerca de la posible participación en la encuesta de teléfono? (SALTAR)

- ( ) Sí
- ( ) No

Si Ud. esta interesado/a en participar, por favor proporcione la información de contacto. Si Ud. es incluido/a en la muestra de trabajadores seleccionados para ser entrevistados, usaremos la siguiente información para comunicarnos con Ud. La información de contacto proporcionada por Ud. será mantenida en estricta confidencialidad y solo será usada para contactarlo/a. Su información de contacto no será compartida con nadie fuera de este estudio.

Por favor, ingrese su información de contacto y proceda a la siguiente página para concluir esta encuesta.

## 27. Su Nombre

## 28. E-correo Preferido

## 29. Su Dirección Preferida

## 30. Su Número de Teléfono Preferido

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## Por favor, Accione “TERMINADO”

Ud. ha terminado la encuesta.

Tiene que accionar el botón “DONE [TERMINADO]” abajo para que sus respuestas sean enviadas.

Gracias por tomar el tiempo para participar en nuestro estudio.

Si tiene alguna pregunta, por favor siéntase con la libertad de comunicarse con nosotros por e-correo o por teléfono.

Página 8

## B. Study Focus Group Guide

**Consent Form Notes**

- We are involved in a project focused on better understanding, reporting, and prevention of violent or threatening events you are exposed to at work. We would like to use this time as an opportunity to learn from you about your work experiences and those of other employees you have worked with.
- We are particularly interested in violence or threats directed at staff by patients or visitors, though other types of violence may come up in our discussions as well. When we say 'violence' we are referring to violent acts perpetuated by patients or visitors on hospital workers including not just physical assaults but also threats of physical assault. We want to be sure you understand we do not just mean events when someone actually was physically assaulted or sustained an injury.
- Project is funded by the National Institute for Occupational Safety and Health and supported by HOSPITAL
- No physical risk to you to participate.
- Risk of potential loss of privacy. We do ask that anything discussed here tonight is kept confidential and not discussed outside this setting.
- We do tape record the session only because we cannot remember everything you say.
- Tapes will be destroyed after analysis is completed.
- You are not required to answer anything you do not feel comfortable answering. Also, we encourage you to talk to each other.
- Initial, sign and date the consent form. I will sign them and return a copy to you for you to keep before you leave.

**Payment Form Notes (for incentives)**

- You will receive a $25 Target gift card for participating today
- You will be asked to provide your name on this form next to the corresponding gift card number for our accounting purposes only. This will be discarded at the end of the study.

| Domain | Questions | Probes |
|---|---|---|
| **Introduction** | You will not be asked to provide your name. The name plates in front of you with numbers on them that we are using to track the conversation. If you use your names in the session, they will not be transcribed into the text.<br><br>Just so the transcriber knows who is here, let's go around the table and have each person say your number - job title, how long you've worked on the unit you're currently in, and how long you've worked in your current profession.<br><br>I will start….<br><br>**Physical Assault** involves aggressive physical contact such as hitting, biting, scratching, pushing, shoving, spitting and/or sexual assault. A physical injury may or may not occur when someone is physically assaulted.<br>**Physical Threat** involves threatening or aggressive physical behavior or physical force that makes you to feel that you may be harmed. This may involve shaking fists, throwing furniture, destroying property, having an aggressive stance, physically moving towards you, and/or moving into your physical space.<br>**Verbal Abuse** involves aggressive or inappropriate language that makes you feel | |

| | | |
|---|---|---|
| | threatened, scared and/or uncomfortable. This may involve yelling, name calling, rude language, and/or verbal bullying. This may pertain to phone calls and email. | |

| | | |
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| **Magnitude of violence problem** | To start out, we'd like to get an idea about your overall concerns about this type of violence occurring in the hospital setting.<br><br>What is your perception of the level of workplace violence <u>at your hospital</u>?<br>(or What are your thoughts on the amount of workplace violence <u>at your hospital</u>?)<br>Do you think this is similar at other hospitals? More? Less? Why?<br><br>What is your perception of the level of workplace violence <u>on your work unit</u>?<br>(or What are your thoughts on the amount of workplace violence <u>on your unit</u>?)<br>Do you think this is similar on other units? More? Less? Why?<br><br>Has the amount of workplace violence changed over time? How so? Why do you think this is?<br><br>Do you think the level of violence experienced at your hospital is related to crime rates in your area or location? | Experiences, Close calls, Involvement of security<br><br>*(NOTE: re-phrased for clarity for some groups)*<br><br>*(NOTE: re-phrased for clarity for some groups)* |
| **Nature of events** | Have there been times you have felt threatened or scared while at work because of violence perpetrated by a patient?<br>More likely during certain procedures? Time of day? Particular patients?<br><br>Have there been times you have felt threatened or scared while at work because of violence perpetrated by a visitor or family member?<br><br>From your experience, working here, what are some other things that could lead to a violence event?<br><br>Does it make a difference if the patient and staff member are of different genders? races? Ethnic groups? ages?<br>What about visitors/family members and staff members?<br><br>What are some of the reasons you think patients may be violent?<br><br>What are some of the reasons you think visitors or family members may be violent?<br><br>When a staff member is hurt, do you think it is ever his/her fault? | Tell me more about that. |

| | | |
|---|---|---|
| **Existing Policies and Procedures** | What are you supposed to do if you feel threatened by a patient or visitor (such as a family member)? Is there a formal policy in place?<br><br>How did you hear about the policy?<br><br>Do you have a protocol/plan for handling patients or visitors with escalating behavior?<br><br>Does your group conduct security drills?<br><br>Do managers/supervisors address violence event-related issues?<br><br>Are there any informal policies in your hospital or work unit that are followed? What are some examples? | Hospital /health system policies?<br>Unit level policies?<br><br>Orientation?<br><br>Unit-level management? Hospital-level management?<br><br>***** Informal policies here contrasted with informal reporting policies. *****|
| **Training** | Do staff get training on how to handle situations when a patient or visitor is violent/threatening? How often do they get trained?<br>Is training formal, informal, or both? Describe.<br><br>Is this training different depending on whether the perpetrator is a patient versus a visitor/family member?<br><br>Do you feel training is helpful in giving staff tools to handle situations when a patient or visitor is violent/threatening?<br><br>Is there anything you feel could be done to improve training?<br><br>In addition to training on how to handle the event, are staff trained on how to report these events? | When did you learn about management of violence events? Nursing school? Orientation? Staff meetings? Other coworkers? Never? Also, How? What? |

| | | |
|---|---|---|
| **Reporting** | What are the reporting procedures if/when a violence event occurs?<br><br>To whom are they reported? How?<br>Do reporting procedures differ by whether the perpetrator is a patient versus a visitor?<br>Do reporting procedures differ by whether the violent event results in physical injury versus if it is a threat?<br><br>How often do events get reported?<br><br>What sorts of things keep people from reporting?<br><br>What is your knowledge/experience with the hospital's online system for reporting any injury/illness and/or threats?<br><br>What is the role of the manager in this process?<br><br>What about the role of others at the hospital (e.g., security)?<br><br>You've talked about some of the formal policies in place to report violent events. Are there any <u>informal</u> reporting policies in your hospital or work unit that are followed?<br><br>What's the easiest way to report violent events? | Online injury reporting system used? When? Why not?<br><br>When feeling threatened what do you do to ensure your safety? In your department or institution, who would you report that to?<br><br>How often do you think folks just assume it is part of the job? (e.g., perceive events to be 'part of the job,' administrative barriers, lack of management support)<br><br>(For managers: Do you collect your own data related to these events? What types of information do you collect?)<br><br>***** Informal policies related to reporting here contrasted with informal policies on what to do when violence happens. *****<br><br> |
| **Mitigation** | What steps do you take to prevent violence events where the patient is the perpetrator? Are these steps you take with all patients, or just certain patients? If just certain ones, how do you decide (e.g., past history of aggressiveness)?<br>• e.g. restraining techniques, diffusion of aggressiveness<br><br>What steps do you take to prevent violence events where a visitor or family member is the perpetrator?<br><br>When would you call security?<br><br>Examples of situations that got diffused?<br><br>What are some of the hospital or unit-level approaches taken to reduce violence in general?<br><br>In what ways are these steps helpful in preventing the type of violence we've been talking about (patient on caregiver)? | ***This seems more "in-the-moment".***<br><br>Did you know how to handle? Or just fly by seat of pants? Do you have a policy for physically restraining patients?<br><br>Probes: security, locked doors, restrict number of visitors in room, restrict visitors by time of day, physical restraints. |

| | | |
|---|---|---|
| | At the unit level, what actions does the manager take to prevent violence events? Are these steps helpful? | |
| **Communication** | Do you talk with co-workers about potentially violent situations?<br><br>Have you ever talked with your manager/supervisor about potential violence in your work area? How did they respond?<br><br>Does your manager/supervisor ever bring up the topic of violence in your work area during staff meetings? Or over email?<br><br>If a patient shows signs of aggression, is this information passed along in report? Is it passed between disciplines (e.g., PT/OT, nursing, radiology)<br><br>If a visitor or family member shows signs of aggression, is this information passed along in report? Between disciplines? | Is potential violence talked about in report? |
| **Recommendations** | What suggestions would you give regarding the development of new policies designed to prevent workplace violence?<br>Are there changes in existing policies or procedures you would recommend?<br>Are there any physical facility changes that would prevent workplace violence?<br><br>What suggestions would you give regarding the development of reporting procedures designed to prevent workplace violence?<br><br>What can be done to encourage better reporting of these events? | |