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

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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. 59:853–865, 2016.
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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

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 ∼ 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%, n = 5,385/11,000), 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 (n = 21), nurses (n = 36), nurses' aides (n = 21), patient sitters (n = 17), and unit clerks (n = 3). Workers from the emergency department, intensive care units, medical-surgical units (e.g., orthopedics, neurology), and float pool participated.

More than one-third (39%, n = 2,098) of survey respondents indicated that they experienced at least one type II violent event in the prior year with the majority (n = 1,574, 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%, n = 524) 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 (n = 524), 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 = 2,098)

	Type II violent event[a] (n)	Event reported[b] % (n)	PR (95% CI)[c]
	2,098	75.0 (1,574)	—
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)
61 years 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)
11+ (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.
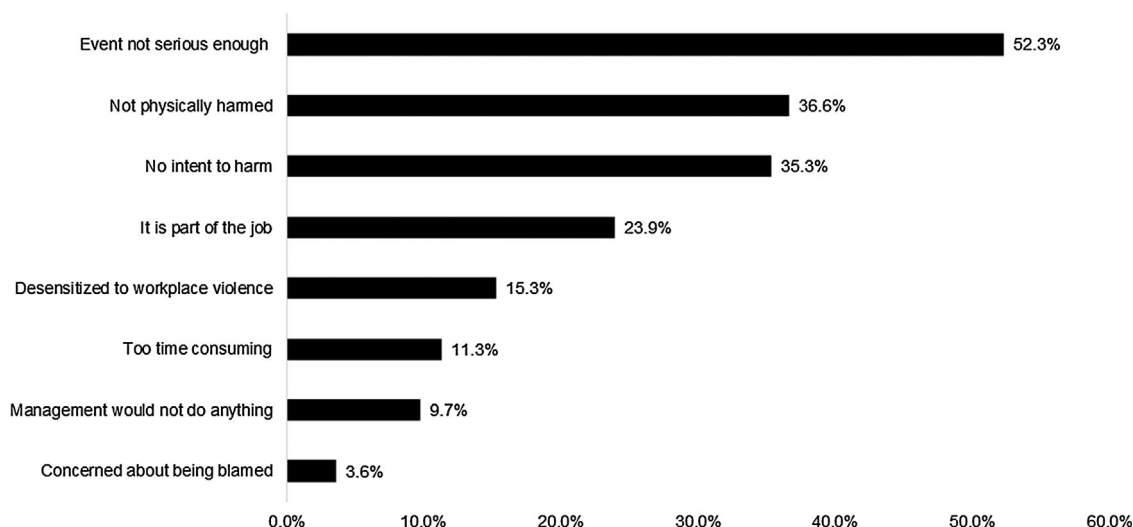
FIGURE 1. Reasons workers did not report type II violent events: findings from a cross-sectional survey (n = 524) (not mutually exclusive).

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) (n = 2,098)

	n	Reported event[a] % (n)	PR (95% CI)
	2,098	75.0 (1,574)	—
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 = 1,574)

| | n | Established reporting systems[a,b] | | Other mechanisms for reporting[b] | | | | |
		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.

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