

REVIEW ARTICLE

Dan L. Longo, M.D., *Editor*

Workplace Violence against Health Care Workers in the United States

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IN JANUARY 2015, A SURGEON AT BRIGHAM AND WOMEN'S HOSPITAL IN BOSTON was shot and killed at work by the son of a deceased patient. Even though the event received substantial media coverage, reporters did not highlight the fact that although the murder of a health care worker is rare, episodes of workplace violence against medical providers happen daily across the country. Although the majority of these incidents of workplace violence are verbal, many others constitute assault, battery, domestic violence, stalking, or sexual harassment.¹

This review focuses on our current knowledge about workplace violence in various health care settings, including the prevalence across professions, potential risk factors, and the use of metal detectors in preventing violence. It also highlights the difficulty researchers have encountered in developing experimental models and the need for further evidence-based research.

Health care workplace violence is an underreported, ubiquitous, and persistent problem that has been tolerated and largely ignored. According to the Joint Commission, a major accrediting body for health care organizations, institutions that were once considered to be safe havens are now confronting “steadily increasing rates of crime, including violent crimes such as assault, rape, and homicide.”² Even though the health care sector is statistically among the industries most subject to violence in the United States (aside from law enforcement),³ researchers have yet to discover statistically significant, universally applicable methods of risk reduction. To date, most research has been directed at quantifying the problem and attempting to profile perpetrators and their victims. The few studies that have focused on interventions to reduce violence have highlighted the unlikelihood of finding a simple, one-size-fits-all solution to prevent this violence.

RESEARCH AND STATISTICS

Experts have classified workplace violence into four types on the basis of the relationship between the perpetrator and the workplace itself (Table 1). Most common to the health care setting is a situation in which the perpetrator has a legitimate relationship with the business and becomes violent while being served by the business (categorized as a type II assault).^{4,5} The highest number of such assaults in U.S. workplaces each year are directed against health care workers.¹ These episodes are characterized by either verbal or physical assaults perpetrated by patients and visitors against providers. Although other types of workplace violence certainly deserve attention, in a 2014 survey on hospital crime, type II workplace violence accounted for 75% of aggravated assaults and 93% of all assaults against employees.⁶

Among episodes of fatal violence against employed adults, nearly 25% occur at their place of employment.³ Between 2011 and 2013, the number of workplace assaults averaged approximately 24,000 annually, with nearly 75% occurring in health care settings.⁷ Data from the Bureau of Labor Statistics show that health

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Table 1. Types of Workplace Violence.*

Type	Description	Example
I	Perpetrator has no association with the workplace or employees	Person with criminal intent commits armed robbery
II	Perpetrator is a customer or patient of the workplace or employees	Intoxicated patient punches nurse's aide
III	Perpetrator is a current or former employee of the workplace	Recently fired employee assaults former supervisor
IV	Perpetrator has a personal relationship with employees, none with the workplace	Ex-husband assaults ex-wife at her place of work

*Data are from Howard⁴ and Peek-Asa et al.⁵

care workers are nearly four times as likely to require time away from work as a result of violence as they are because of other types of injury.⁸

However, inconsistencies in the existing data can make interpretation of the findings quite difficult. The Bureau of Labor Statistics and the National Institute for Occupational Safety and Health are among several federal agencies devoted to the collection of statistics on workplace violence, and their results are disparate. The results of academic studies also vary considerably. In addition, inconsistency in defining categories of violence (e.g., verbal assault, threats, physical assault, and battery) compromise reliability among studies.⁹⁻¹³ One review showed that no two studies have used the same instrument to measure workplace violence in the emergency department,¹³ and nearly every study method was based on voluntary retrospective surveys, an approach that risks both selection bias and recall bias. Furthermore, data from the federal Bureau of Labor Statistics may be grossly inaccurate,^{14,15} as shown by one study in which investigators found that the actual number of reportable injuries was as much as three times the number in the federal survey.¹⁶ Since the Bureau of Labor Statistics does not record verbal incidents, the prevalence of workplace violence cannot be reliably gauged on the basis of data from the agency.¹⁷ Despite these limitations, the statistics on the prevalence of workplace violence in the health care setting remain alarming.

Most studies on workplace violence have been designed to quantify the problem, and few have described research on experimental methods to prevent such violence. The most recent critical review of the literature in 2000 identified 137 studies that described strategies to reduce workplace violence. Of these studies, 41 suggested

specific interventions, but none provided empirical data showing whether or how such strategies worked. Only 9 studies, all of which were health care-related, reported data on interventions. Even so, the conclusion of the 9-study review was that each of the studies used weak methods, had inconclusive results, and used flawed experimental designs.¹⁸ A review of nursing literature had similar conclusions: all the studies showed that after training, nurses had increased confidence and knowledge about risk factors, but no change was seen in the incidence of violence perpetrated by patients. There is a lack of high-quality research, and existing training does not appear to reduce rates of workplace violence.¹⁹

Proving that prevention programs are efficacious and cost-effective requires scientific experimentation, and designing such experiments has proved to be challenging. Without standardized definitions, it will remain difficult for researchers to combine or compare data, assess interventions, and detect temporal changes. The use of existing legal classifications of assault, aggravated assault, and battery may help to facilitate accurate multidisciplinary work among researchers, law enforcement, and policymakers.

WORKPLACE VIOLENCE IN NON-HOSPITAL SETTINGS

PREHOSPITAL SETTINGS

For many patients, medical events start with emergency medical services. One prospective study that was specifically designed to limit recall bias determined that 4.5% of violent encounters involving health care workers involved violence directed against emergency medical services personnel. Patients accounted for 90% of this violent behavior.²⁰ A 2014 retrospective survey showed that the career prevalence of physical violence toward emergency services personnel was 80%, yet only 49% ever reported the incident to the police.²¹

PRIMARY CARE AND OTHER OFFICE-BASED PRACTICES

Workplace violence in outpatient practices is a complex problem about which very little is known. An extensive literature review was unable to identify any peer-reviewed studies defining the scope of the problem in office-based practices, including primary care, family medicine, internal medicine, and surgery and surgical subspecialties

in the United States. Despite the lack of formal reports, there is certainly reason for concern. Just days before the murder at Brigham and Women's Hospital, a Veterans Affairs psychologist was killed in his clinic by a patient in El Paso, Texas.²² Last month, a urologist in New Orleans was shot and killed in his office by a former patient, who then committed suicide. Many international studies have shown high rates of abuse toward family physicians, particularly in Canadian and Australian health systems, primarily by patients with mental illness or displaying narcotic-seeking behavior. Studies of the U.S. health care system are needed to further define the extent of such violence.

HOME HEALTH CARE

Employment in the home health sector carries particular risks. Because workers provide care in the client's home, the environment is comparatively uncontrolled. Overall, 61% of home care workers report workplace violence annually.²³ Unique concerns include the presence of weapons and drugs, family violence, robbery, and car theft.²⁴ Homicide is the second leading cause of workplace death in this group, exceeded only by motor vehicle crashes.²⁵

HOSPITAL WORKPLACE VIOLENCE

Certain hospital environments are more prone to type II workplace violence than are other settings. The emergency department and psychiatric wards are the most violent, and well-studied, hospital environments. Within these locations, physicians, nurses, technicians, and other staff members may be victims. There is a paucity of research in other hospital areas.

AGAINST NURSES

Since rates of assault correlate with patient-contact time, nurses and nursing aides are victimized at the highest rates.^{14,17,26-30} In the Minnesota Nurses' Study, the annual incidence of verbal and physical assaults was 39% and 13%, respectively.²⁹ In another large study, 46% of nurses reported some type of workplace violence during their five most recent shifts; of these nurses, one third were physically assaulted.³¹

Emergency department nurses reported the highest rates, with 100% reporting verbal assault and 82.1% reporting physical assault during the

previous year.³² Nursing aides are also at very high risk,²⁶ particularly those in nursing homes that have dementia units.³³ Among nursing home aides, 59% reported being assaulted weekly and 16% daily. In addition, 51% reported that they had been physically injured by a patient, with 38% of those requiring medical attention.³⁴

AGAINST PHYSICIANS

Physicians are also frequent targets of type II workplace violence; approximately one quarter of emergency medicine physicians reported being targets of physical assault in the previous year.^{17,27,35} From 1993 through 2001, violence against physicians occurred at a rate of 10.1 per 1000 workers, comprising 1.1% of all workplace violence incidents.³⁶ In a study conducted by Kowalenko et al. at the University of Michigan, 89% of assaults against physicians were perpetrated by patients, 9% by patients' family members, and 2% by patients' friends.³⁵ Nationwide, 78% of emergency department physicians reported being targets of workplace violence in the previous 12 months. Specifically, 75% reported verbal threats, 21% physical assaults, 5% confrontations outside the workplace, and 2% stalking.³⁷ Of course, workplace violence is not limited to emergency department physicians. For instance, one third of pediatrics residents reported being assaulted by patients or families during their training.³⁸ A total of 71% of pediatrics residents reported that they had not received any type of training in workplace violence, and a majority of these residents believed that they might benefit from training in how to manage client anger.³⁸

PSYCHIATRIC SETTINGS

All employees who work in inpatient psychiatric environments are at higher risk for targeted violence than are other health care workers.^{17,25,29,39,40} Rates of workplace violence against physicians in psychiatric settings may be even higher than those in emergency department settings, with 40% of psychiatrists reporting physical assault in one study.⁴¹ A survey of all staff members at a forensic psychiatric hospital showed that the annual incidence of verbal conflict was 99% and the annual incidence of physical assault was 70%.⁴² Among psychiatric aides, the rate is 69 times the national rate of violence in the workplace.⁴³

BARRIERS TO REPORTING

In order to assess progress in strategies to reduce workplace violence, we need accurate baseline statistics to ascertain the true extent of the problem. There are several reasons why this data set has not yet been collected. Episodes of workplace violence of all categories are grossly underreported.^{7,11,15,16,20,44} Only 30% of nurses report incidents of workplace violence³¹; among physicians, the reporting rate is 26%.³⁷ Underreporting is due in part to a health care culture that is resistant to the belief that providers are at risk for patient-initiated violence and to a complacency in thinking that violence is “part of the job.”¹⁴

Providers are sometimes uncertain what constitutes violence, since they often believe that their assailants are not responsible for their actions in such cases.⁴¹ Perpetrators most commonly have a diagnosis of psychosis, substance-use disorders, or dementia,²⁶ and perhaps events are not reported because providers believe that these patients are not in full control of their faculties. Nurses have cited fear of retribution from supervisors, the complexity of the legal system, and disapproval of administrators as barriers to the reporting of workplace violence. Specifically, they cite a lack of management accountability toward such reporting⁴¹ and contend that the current intense focus on customer service in health care serves as a deterrent to reporting workplace violence, since the concept of customer service results in the mentality that “the customer is always right.”⁴⁵ Until these impediments are removed by health care institutions, by legislation, or by public demand after another highly publicized attack, we should not expect a major change in reporting practices.

CHARACTERISTICS OF VIOLENT OFFENDERS AND RISK FACTORS

The characteristic that is most common among perpetrators of workplace violence is altered mental status associated with dementia, delirium, substance intoxication, or decompensated mental illness.^{7,9,32,33,37,46} The primary purpose of profiling is to identify persons at high risk for committing workplace violence so that safeguards can be implemented to prevent violence before it occurs. Although specific environments such as psychiatric units, nursing homes, and emergency

departments are at high risk,⁷ predicting the likelihood of workplace violence according to medical diagnosis or trait has proved to be elusive and can lead to discrimination against particular types of patients. Studies that have been performed in emergency departments have suggested that long wait times, crowding, inadequate food quality, being given “bad news” related to diagnosis or prognosis, low socioeconomic status, presence of weapons, and gang activity are possible risk factors for workplace violence.^{7,47} In some studies, researchers have postulated that patients with a previous history of violence¹⁴ are at increased risk for committing violence toward staff members; however, this association remains unproven. Analyses of demographic data from perpetrators and victims have not identified specific characteristics that are useful in predicting the risk of workplace violence.^{48,49} However, special consideration should be given to patients who are in police custody, since such patients have been involved in 29% of shootings in emergency departments, with 11% occurring during escape attempts.⁵⁰

Regarding specific environmental risk factors for workplace violence, the guidelines of the Occupational Safety and Health Administration (OSHA) identify employment in a high-volume urban emergency department as a specific risk factor.⁷ However, a prospective study showed that the rates of violence among emergency department workers in suburban hospitals were similar to those among their counterparts at both urban and level-one trauma centers.¹⁷

According to the National Crime Victimization Survey from 1993 through 1999, 80% of all workplace homicides were committed with firearms.⁵¹ Between 2000 and 2011, there were 154 shootings with injury either inside or on the grounds of American hospitals, most frequently outdoors on the hospital campus (41%), in the emergency department (29%), or on inpatient floors (19%). The most frequently ascribed motives were revenge (27%), suicide (21%), and mercy killing (14%).⁵² In nearly 20% of the incidents, the perpetrators did not bring their own firearm to the hospital, and in 8% of all events the perpetrator took the gun from a police or security officer.⁵⁰ In 28% of events involving firearms, a law enforcement officer shot a perpetrator in the hospital.⁵²

Events involving active shooters garner tre-

mendous media attention but are actually quite rare. The Federal Bureau of Investigation recognizes a total of 160 active-shooter events between 2000 and 2013.⁵³ Response training for active-shooter events is now nearly universal in hospitals, even though only 4 of the 160 events (2.5%) occurred at health care facilities. Although such training is important, experts in the field recommend the adoption of a comprehensive “all hazards” approach⁵⁴ in the teaching of general skills to help protect workers from all causes of workplace violence. They have also suggested that hospitals prohibit all firearms from campus with the exception of weapons used by law-enforcement officers, which should be restricted from all possible access by patients or other visitors. The recommendations include the development of rational policies in coordination with law-enforcement agencies along with secure weapons storage for patrons and police.⁵⁵

USE OF METAL DETECTORS

Hospital security discussions typically include debate regarding the reliability, public perception, and cost-effectiveness of metal detectors. Such devices seem to be an obvious choice to keep weapons from entering facilities illegally, and security researchers have studied the use of detectors far more than other implemented countermeasures. Less than 15% of emergency departments nationwide were using metal detectors as of 2008 (the most recent year for which accurate data are available).⁵⁶ Pediatric emergency departments are not immune to weapons and violence,⁵⁷ yet only 6% have installed metal detectors. In a 2003 study, one emergency department with a metal detector confiscated 3446 weapons in 8 months; of these weapons, 78% were knives or other cutting implements. Firearms were very uncommon (0.1%).⁵⁷ However, the key question remains: do metal detectors reduce workplace violence in hospitals? A 1999 study showed no decrease in emergency department violence despite a large increase in the number of confiscated weapons after metal detectors were installed.⁵⁸ In addition, 41% of weapons were confiscated from patients who had bypassed walk-through screening because they arrived on a metal stretcher by ambulance.^{58,59} Complicating the notion of metal-detector use is the concern about negative public perception,

even though most patients and employees believe that metal detectors contribute to a safer environment without undue invasion of their privacy.⁵⁹⁻⁶¹ The federal government recommends that any metal-detection program also incorporate the use of radiographic equipment to examine bags and purses for contraband and that each site be staffed with up to nine full-time guards.⁶²

Although metal detectors may theoretically mitigate violence in the health care workplace, there is no concrete evidence to support this expectation. Without evidence of benefit, health care administrators are unlikely to favor the installation of metal detectors, given the financial requirements for equipment and personnel to monitor the machines and the need to close off all unequipped entrances. Each facility along with its catchment area is unique, and such security measures may be more beneficial in areas where weapons are more commonly carried and used. However, since weapons are used in less than 1% of type II episodes of violence in the health care workplace,²⁷ safety resources might be better applied elsewhere.

EXISTING GUIDELINES

With the exception of laws regarding workplace violence in a few states (Fig. 1),⁶³ health care organizations are not required to have highly specific prevention strategies in place.⁶⁴ OSHA has provided guidelines to reduce the risk of workplace violence in health care settings.⁷ However, these guidelines are voluntary, so administrators, managers, and policymakers may be unfamiliar with them.^{65,66} The Joint Commission has vague policy requirements regarding workplace violence, and these are open to interpretation.²

LONG-TERM EFFECTS OF WORKPLACE VIOLENCE

Most studies have shown that after an episode of workplace violence, there are increased rates of missed workdays (Fig. 2), burnout, and job dissatisfaction along with decreased productivity and overall feelings of safety among staff members.^{13,23,27,28,32,35,44,56,67-69} In response, fear at work has even led some health care workers to protect themselves by carrying weapons, typically knives or firearms.³⁵ Injuries associated with workplace

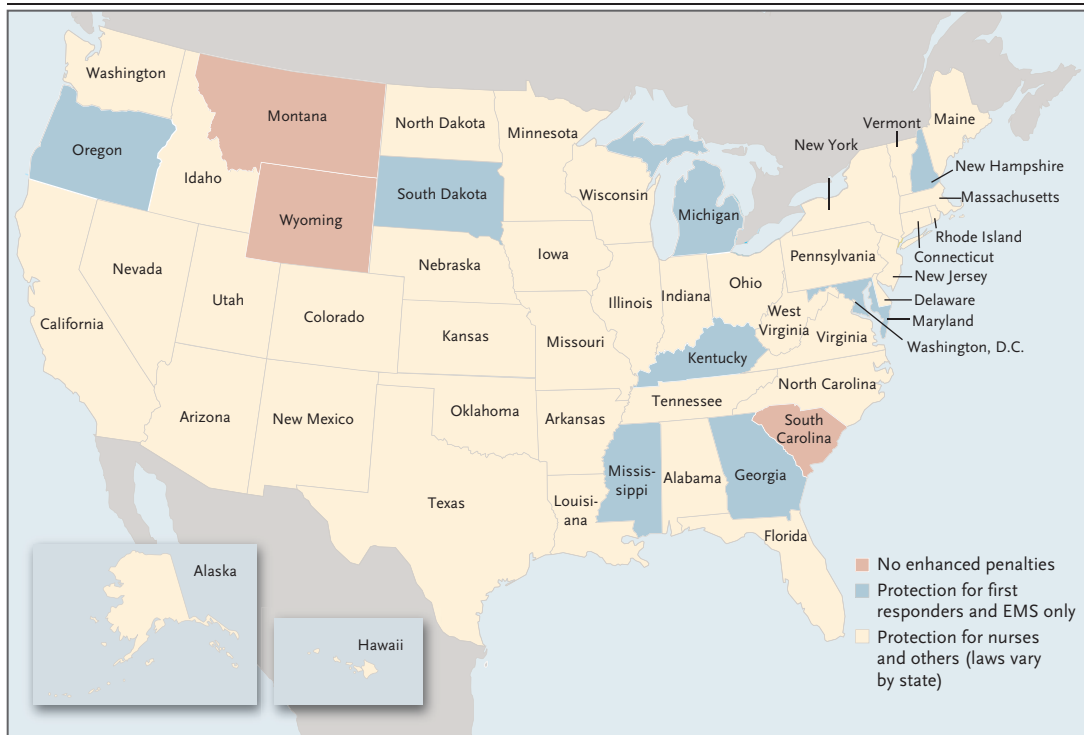


Figure 1. States with Enhanced Penalties for Violence against Health Care Workers.

Shown are states that have adopted enhanced penalties for violence against health care workers, including against first responders and emergency medical services (EMS) workers only or against nurses and other specified workers (with laws varying according to state). Also shown are states that have no enhanced penalties except for such specific acts as assault with bodily fluids (in Montana). Among laws that apply to specific types of health care workers are those that call for enhanced penalties for violence against EMS workers and personnel at state mental health facilities in Kansas and against EMS workers, public health personnel, and social workers in Mississippi. Adapted from the Emergency Nurses Association.⁶³

violence result in longer work absences than other injuries.¹⁴

POTENTIAL SOLUTIONS

Although there are numerous suggestions for reducing type II workplace violence, few if any have supporting evidence to document their efficacy. This fact is partly a result of the difficulty experts have had in designing experiments to test hypothetical interventions. Metal detectors have received scientific attention, as mentioned, and Kowalenko et al. have developed a tool that uses filmed vignettes of violent acts in the emergency department to gauge the reactions of health care workers. The tool has been shown to be accurate and reliable in characterizing such episodes across all demographic and employment groups.⁷⁰ In the absence of other evidence-based solutions, the opinions of experts matter, and

their suggestions could be used to direct new research. A multifaceted, multidisciplinary approach to violence reduction is necessary to generate results, and any prevention program will require individualization and customization.

The development of an appropriate program to prevent workplace violence requires the consideration of issues involving individual workers, law-enforcement officials, and health care organizations to determine vulnerabilities and solutions. Among strategies for individual workers that have been proposed to reduce workplace violence are training in aggression de-escalation techniques and training in self-defense. Recommendations for target hardening of infrastructure include the installation of fences, security cameras, and metal detectors and the hiring of guards. Perhaps most important are recommendations that health care organizations revise their policies in order to improve staffing levels

during busy periods to reduce crowding and wait times, decrease worker turnover, and provide adequate security and mental health personnel on site.⁷¹ The answer probably involves a combination of these ideas. In 2014, Arnetz et al. described a large, randomized, controlled study that is currently under way in a large U.S. hospital system that is aimed specifically at reducing the prevalence and severity of workplace violence with the use of a standardized intervention.⁷² Ideally, policy changes and interventions would be based on the results of such research studies.

REPORTING AND REDRESS

The importance of recognizing verbal assault as a form of workplace violence cannot be overlooked, since verbal assault has been shown to be a risk factor for battery.³⁰ The “broken windows” principle,⁷³ a criminal-justice theory that apathy toward low-level crimes creates a neighborhood conducive to more serious crime, also applies to workplace violence.⁷⁴ When verbal abuse and low-level battery are tolerated, more serious forms of violence are invited.¹⁴ When threatening language and signs of agitation are identified, interventions should be initiated quickly. The cautious application of a so-called zero tolerance reporting policy, in which all episodes of workplace violence are immediately reported to supervisors and security personnel and are addressed with the perpetrator, may prevent escalation.^{20,30,71,75} All cases of workplace violence should be reviewed.

NEW GUIDELINES AND LEGISLATION

The American Nurses Association has petitioned OSHA to require mandatory comprehensive programs to prevent workplace violence.⁷⁶ The Joint Commission and other accrediting organizations could assume responsibility to do the same. Although laws that are designed to prevent violence in the health care workplace have been adopted in only a handful of states, policymakers could evaluate the effectiveness of such laws and consider adoption of those that have been effective in mitigating workplace violence.⁷⁷ Legislation that makes battery against a health care worker a felony offense could be considered by all states to protect vulnerable providers.

At the facility level, supervisor support was found to be protective against harassment and all types of violence.^{78,79} There is currently no

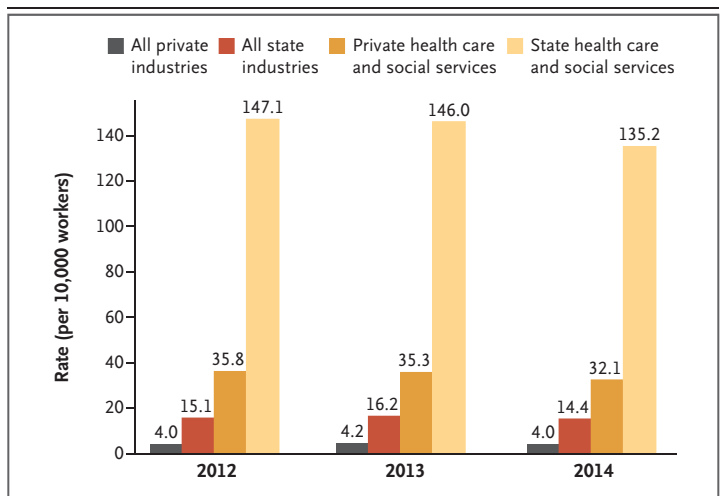


Figure 2. Rates of Workplace Violence with Injury Requiring Missed Workdays. Shown are the rates of violent episodes resulting in injury-related missed workdays per 10,000 workers in private industries, state industries, private health care and social services, and state health care and social services in 2012 through 2014. Data are from the federal Bureau of Labor Statistics.

universally applicable training program that has proved to be effective at reducing type II violence. In the absence of such evidence, hospital employees should be encouraged to be vigilant and to report incidents of workplace violence. Health care facilities could devise a system of flagging a patient’s chart if the person has previously been violent during health care interactions in order to alert staff members to the potential threat, since such measures have prevented recurrence in the Veterans Affairs system.⁸⁰

CONCLUSIONS

Like all other workers, health care employees have a right to be safe on the job. In the absence of data that define effective steps to prevent workplace violence, approaches to the problem may be considered at various levels. Legislators may consider enacting harsher punishments for violence against health care workers as a special class of offense. Health care employers who are eager to ensure safe working environments for their employees may help do so by adopting simple incident-reporting procedures that protect complainants from retribution, ensure comprehensive managerial support, and support the implementation of cost-effective, evidence-based solutions as they are discovered. Future research efforts should be devoted to unbiased data collec-

tion, experimental designs, and improved reporting processes.

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