

Emergency Department Psychiatric Patient Violence: Diminishing the Risk

Jamie Burnham DNP MS AG-ACNP

University of Maryland, School of Nursing

## Abstract

**Problem:** Research supports that emergency department (ED) workplace violence (WPV) involving psychiatric patients is a serious problem. While information on successful prevention strategies is limited, a first step in the process is to identify contributing factors.

**Objective:** The Haddon Matrix, a framework that has been shown to be effective in identifying factors related to WPV in the ED, was used to conduct an observational analysis of a local ED to evaluate WPV related to psychiatric patients.

**Design:** The principal investigator used the Haddon Matrix to obtain descriptive observation and analysis of events in a local community ED observational unit. The observation and data collection process involved psychiatric patients, health care providers, and the environment.

**Sample methods:** Patients included those placed in the observational unit for ED psychiatric evaluation who were between 18 and 65 years old. The health care team providing direct patient care was also observed.

**Results:** In this local community ED, 20% of psychiatric patients were involved in WPV during the 8-week observation period. Management included chemical restraints, physical restraints, security involvement, and a combination of the above. The most frequently used management was security participation, relied upon 81.8% of the time. Chemical restraints were used 63.6% of the time. Physical restraints were relied upon 9.1% of the time. Specific factors such as de-escalation techniques contributed to the absence of violence. Factors such as ignoring patients, long wait times, and inconsistent processes were associated with WPV. Other concerns observed included distractions related to the use of personal cell devices and Internet that can lead to a delay in responding to escalating patients. Technology has been shown to enhance patient care, though its proper use is imperative for safety.

Recommendations: Ensuring that staff has a consistent process and that all are following the protocol will help decrease the risk of WPV. Maintaining a security presence and the early use of de-escalation techniques were also associated with a lower level of WPV. It is recommended that technology be used with caution to enhance patient care but not delay response time or treatment of patients.

### **Emergency Department Psychiatric Patient Violence: Diminishing the Risk**

Over 2,637 nonfatal assaults are reported annually in hospitals and it is thought that many more go unreported (Centers for Disease Control and Prevention [CDC], 2002; Taylor & Rew, 2010). Workplace violence (WPV) is defined as emerging hazards or violent acts directed toward a person at work that can lead to minor and major injuries, disability, psychological trauma, or death (CDC, 2002; Gillespie, Gates, & Berry, 2013; McPhaul & Lipscomb, 2004). Violence can range from threatening language to murder. Most reported cases of WPV in hospitals occur in the emergency, psychiatric, or geriatric settings. Papa and Venella (2013) reported that four out of five incidents of WPV in health care occur in the ED and over 50% of ED nurses have been victims of WPV. Emergency departments (EDs) have over 53 million psychiatric-related visits yearly (Zun, 2012). Emergency department and psychiatric staff are at an increased risk of WPV due to their frequent direct contact with patients who are at a higher risk of committing violent acts and a lack of standardized processes for this patient population.

Many psychiatric clients are non-adherent with their psychiatric medications and engage in substance use (Rocca, Villari, & Bogetto, 2006). These factors have been linked to patients displaying violent behavior toward the ED staff. Other factors related to WPV include ED overcrowding, long wait times, and inconsistent processes. Baker (2012) reported that only 6% of hospitals have protocols to guide the management of psychiatric patients, including pharmacologic management. Poor management of psychiatric patients in the ED has negative impacts on patients, staff, and the department processes. The proper management of this patient population is imperative to decrease WPV.

**Purpose**

The purpose of this scholarly project was to identify key aspects and factors related to WPV in the ED of a local community hospital. The principal investigator (PI) used observation and analysis guided by an evidence-based framework to determine themes and factors related to WPV within the unit. This allowed the principal investigator to develop recommendations for the implementation of future evidence-based interventions to improve care in this unit.

**Significance/Potential Outcomes**

According to Gates et al. (2011), over one million ED workers have been impacted by WPV. Baker (2012) reported that 32% of ED employees are verbally threatened daily and 18% have been physically assaulted. The presence of a mental health history has been identified as a patient-related contributing factor to incidents of WPV (Kowalenko et al., 2012). According to Powley (2013), staff must be educated and confident in their ability to recognize early signs or predictive factors of violence in order to react effectively. In one study, ED staff reported feeling ill-prepared and under qualified to work with psychiatric patients and manage their unpredictable behaviors (Jelinek, Weiland, Mackinlay, Gerdtz, & Hill, 2013). There is an increased level of stress when staff feel ill-prepared or fearful of WPV, which can lead to posttraumatic stress disorder, decreased productivity, decreased job satisfaction, and increased burnout (Kowalenko et al., 2012). There is a substantial financial burden associated with WPV when considering the medical, legal, and security costs as well as missed time from work (Taylor & Rew, 2010).

The ability of staff to recognize and react to imminent violent behaviors such as restlessness or withdrawn behavior is critical (Powley, 2013). Ignoring pertinent behaviors or assuming they do not warrant further action permits the situation to escalate, while overreacting can lead to unwanted results (Manton, 2013). Analysis of events in which a patient exhibits

precursors to violent behavior can help staff increase their awareness and learn to defuse violent situations (Powley, 2013). This can be achieved through the use of the Haddon Matrix (Haddon, 1972). The Haddon Matrix is a framework used to improve safety as well as prevent injury. The anticipated outcome of this scholarly project was to identify gaps in ED specific management of psychiatric patients that contribute to violent events and to diminish the frequency of violent events through the implementation of the Haddon Matrix. Identifying these gaps offers insight into future implementation recommendations to significantly decrease violent events.

### **Theoretic Framework**

The Haddon Matrix was originally based on highway safety and accident prevention but has evolved to specifically address WPV in the ED (Haddon, 1972; McPhaul & Lipscomb, 2004; Runyan, Zakocs, & Zwerling, 2000). It has been used in the clinical setting and yielded positive results (Gates et al., 2011). The Haddon Matrix can be used to evaluate both behavioral and environmental strategies to guide future violence prevention. The theory proposes that injury interventions, prevention strategies, and phases in time can be combined to allow an individual to plan for and minimize an injury. The theory is valuable to ED psychiatric patient management because it allows staff to break down the overall management process and identify areas for improvement. The Haddon Matrix involves an evaluation of events in three phases: pre-event, event, and post-event as seen in Appendix A (Haddon, 1972). The *pre-event phase* refers to the pre-energy exchange prior to the interaction between individuals. The *event phase* is the time in which an energy exchange takes place and violence occurs. The *post-event phase* is when the event ends but factors remain that can contribute to injury.

These phases are evaluated by addressing various key concepts, including the host, agent, social environment, and physical environment (Runyan et al., 2000). The *host* is defined as the

person at risk for an injury. The *agent* is the vector through which energy is transmitted, such as a fist or thrown object. The *physical environment* is defined as the characteristics of the setting where the event takes place. The last concept is the *social environment*, which involves the legal and social norms in the practice setting. Through observation and analysis of events, staff look for ways to reduce the potential damage that can occur during an event and avoid unwanted outcomes. After breaking down findings using the phases of events, staff can identify where in the process to apply interventions to produce the desired results. As the phases of events are addressed individually, the outcomes can be measured through continued observation and analysis.

### **Literature Review**

Identifying factors leading to WPV involving psychiatric patients in the ED is an important step to decrease and even eliminate violent events. Literature supports the use of the Haddon Matrix to decrease WPV in the ED (Runyan et al., 2000). It was important to evaluate studies conducted involving the use of the Haddon Matrix in the ED to establish the value of using this matrix for the current scholarly project. The principal investigator conducted a literature search and used the Johns Hopkins Nursing Evidence-Based Practice Rating Scale to rate articles on a scale from I to V, I being the highest level of evidence and V being the lowest level (Newhouse, Dearholt, Poe, Pugh, & White, 2005). Evidence grading was derived from a 3 level scale including a quality of A, B, or C, listed in order of highest to lowest quality. The researcher evaluated each article for its level of evidence and quality. Results can be found in Appendix B.

The Haddon Matrix was the only tool repeatedly used to produce quality data for evaluating WPV in the ED, although other studies revealed the value of using various theories to

guide practice (Runyan et al., 2000; Taylor & Rew, 2010). Researchers have identified deficits in knowledge related to psychiatric and aggressive patient management by ED staff including nurses and providers (Jelinek et al., 2013). According to Jelinek et al. (2013) nurses were dissatisfied with violence in the workplace and reported increased stress levels. An increase in WPV was more likely to be associated with psychiatric patients when compared to other patient populations presenting to the ED (Gillespie et al., 2013). One technique discussed frequently in literature for the HCT to be familiar with to aid in psychiatric patient management is the use of de-escalation techniques (Richmond, Berlin, Fishkind, Holloman, Zeller, Wilson, Rifai, & Ng, 2011). Key domains for de-escalation techniques include respecting personal space, clear communication, identifying what the patient wants, active listening, and limit setting while offering choices.

Two studies found to be directly significant to this scholarly project specifically evaluated WPV using the Haddon Matrix with the ED population. Runyan et al. (2000) used the Haddon Matrix in a systematic review of the literature to identify gaps in practice to develop future implementation recommendations. A total of 50 quantitative and qualitative research articles were evaluated in the review. A wide array of approaches to WPV prevention were identified but with little to no evidence to support the use of these approaches. Some of these approaches included, but were not limited to, nurse training in behavior management, high-risk patient identification through a computerized “warning flag,” crisis intervention post-assault, music therapy, and a patient privilege system. Gates et al. (2011) used the Haddon Matrix in a qualitative study to identify deficits in current practice to make future recommendations. Ninety-six participants across three hospitals in the United States were interviewed using open-ended questions about ED WPV. The findings highlighted nurse and patient focused deficits as well as

identified gaps in social and environmental factors contributing to WPV. The deficits included gaps in communication from nurse to patient, a lack of staff training in psychiatric and aggressive patient management, and inconsistencies in creating an isolated environment for the aggressor.

The studies by Runyan et al. (2000) and Gates et al. (2011) as well as other reviewed literature showed there is a lack of standardized processes for ED psychiatric patient management and various areas are in need of future interventions. These areas include pharmacologic management, staff awareness, staff training, communication, de-escalation techniques, restraint use, workspace design, crisis planning, security presence, and consistent post-event debriefing.

In the literature, no particular intervention was shown to have a statistically significant effect on managing violence. According to Kynoch, Wu, and Chang (2011), staff would be better prepared to manage patient aggression if they had increased knowledge as well as improved skills, attitudes, and confidence. However, they identified a lack of consistency in training programs, making it difficult to draw conclusions about the most effective or ideal educational programs. In a systematic review, Kynoch et al. found evidence to support the use of staff training, chemical restraints, and physical restraints. Results of a qualitative study by Sivakumar, Weiland, Gertz, Knott, and Jelinek (2011) identified a deficit in confidence and knowledge among staff. The researchers identified process gaps including patient factors, environmental factors, and process barriers, as well as knowledge and skills deficits. Gillespie et al. (2013) focused their qualitative design on ED nurses and found that violence in the ED was most prevalent with patients presenting with both mental health illness and substance abuse. The results of the study suggested staff should maintain a safe distance from violent patients and be

aware of a patient's history, as a history of violence indicates an increased risk of repeat violence. Most research has focused on the evaluation of WPV but has not identified interventions based on evidence-based practice (Taylor & Rew, 2010).

A common theme among studies reviewed was an interest in learning evidence-based practices to manage psychiatric patients in the ED to avoid unwanted outcomes. WPV was determined to be costly across all studies and was shown to have an impact on employers paying for medical and psychological care, job turnover, workers' compensation, and productivity (Gates et al., 2011). The impact also extended physically and psychologically to patients and employees (Jelinek et al., 2013; Zun, 2012). The studies testing interventions were found to have weak designs and minimal useful data (Runyan et al., 2000). Practice recommendations include using a theoretical framework such as the Haddon Matrix to identify gaps in practice to develop and test interventions (Gates et al., 2011; Runyan et al., 2000; Taylor & Rew, 2010).

## **Methods**

### **Quality Improvement Project Design and Sample**

The purpose of this quality improvement project was to identify key aspects and factors, including behavioral and environmental factors, related to WPV. For the purpose of this project, WPV was defined as any incident where a provider sustained physical harm or was threatened by a psychiatric patient. Incidents could include direct verbal threats, threatening body language, and verbal abuse that could be psychologically detrimental to staff. Events were also deemed violent if they included situations requiring physical restraints, chemical restraints, or security participation. Security participation was defined as verbal and/or physical participation in the event with direct interact with the patient, and does not include simply being present on the unit. The principal investigator conducted a clinical inquiry through evidence-based prospective

observation and analysis of violent events. This process was designed to identify gaps in current practice and the need for future interventions to prevent WPV.

Observational descriptive data collected included information regarding: (a) the environment, (b) patient behaviors, and (c) health care team (HCT) behaviors. The HCT included patient care techs, nurses, psychiatric social workers, and doctors providing direct care.

Participants observed included the HCT and psychiatric patients. No limits were placed on the sample size in an effort to obtain all available data. The focused patient population included individuals 18 to 65 years of age with a history of psychiatric diagnosis who were being treated in the ED observational unit. Exclusion criteria included pediatric, geriatric, and dementia patients. Pediatric and geriatric patients are not directly placed into this unit; they are placed in other units and receive age specific screenings. Patients who present with a history of dementia and no previous psychiatric history are also not directly placed in the observation unit. Patients were deemed appropriate for the observation unit if they presented with an emergency petition by the police or court or if they were brought to triage by a third party for psychiatric evaluation and had a diagnosed psychiatric history. Patients who had a history of psychiatric diagnosis and presented voluntarily for a psychiatric complaint including, but not limited to, suicidal ideation, homicidal ideation, and depression, were also considered appropriate for the observation unit.

### **Ethical Approval**

A synopsis of this proposal was submitted to the IRB at UMB and the local hospital. UMB IRB determined the project to be non-human subjects research and therefore did not require further IRB review. The local community hospital determined the project to be non-research and did not need IRB review. Data were stored on a locked, password protected laptop in a secure location. No identifying patient demographics were recorded during the observations

nor were used for the purpose of this project. To maintain complete patient privacy a numeric event code was used to identify the patient participants. The HCT participants were identified with an event code to match the incident with the patient.

### **Setting**

The setting was a local community hospital ED “observation unit,” which is designed for psychiatric patients who are being medically cleared by an ED physician, evaluated by an ED psychiatric social worker, and cared for by an ED nurse. The unit is an 8-bed locked-down area with restricted access. This prospective design allowed the PI to observe events. The current unit set up included a camera in each observation room to monitor patient and staff safety within the unit. These cameras allowed the PI to observe all patient and HCT interactions at all times.

### **Procedure and Data Collection**

For the purpose of this project, the PI was located in the observation unit to observe potential incidents of WPV. The PI was well versed on the Haddon Matrix and the themes and key concepts of focus. The PI observed the restricted unit at random time intervals from 4 to 8 hours to capture a sample of events, a minimum of twice a week, over an 8-week period. Observations by the PI took place a total of 17 times, including 7 days, 6 evenings, and 4 nights. The PI descriptively documented events that occurred during the pre-event, event, and post-event periods. The PI identified each patient presenting to the unit using a numeric code. Patients presenting to the unit were observed by the PI. Descriptive data was documented based on the observations of their behavior and the environment regardless of the presence or absence of a violent event. Documentation of the patient encounters began upon the initial interaction between the HCT and the patient during the evaluation time frame.

To ensure standardization, documentation was guided using the key concepts and themes identified in research by the Haddon Matrix (Appendix C). At each observational period, the key concepts of focus included the host, agent, environmental, and physical factors. Documentation further included the identification of specific themes within the key concepts as seen in Appendix D. Examples of themes within the key concepts included a functioning security system, the patient having a history of violence, and non-violence crisis intervention.

### **Data Analysis**

During data collection, one to six patients were observed per time frame. Although the unit is an 8-bed unit, construction eliminated two beds, leaving six as the maximum number of patients on the unit at a time. A total of 55 patients were observed during this evidence-based project. Of the 55 patients, 11 (20%) were involved in WPV as previously defined for this evidence-based project and 44 (80%) were not involved in WPV. Physical restraint was used once in conjunction with security presence and chemical restraint. Chemical restraint was used a total of seven times, four of which included security participation. Security participation was used independently four times.

The PI grouped and categorized the results by descriptive variables according to the key concepts of the Haddon Matrix (Appendices H and I). Data obtained from psychiatric patients without incidents of WPV served as a comparison group for those patients involved in WPV. The researcher evaluated the data statistically using SPSS version 22 to conduct a descriptive analysis and obtain frequencies of WPV as well as management strategies used by the HCT. In addition, the analysis included ordinal ranking of WPV event severity using the violence pyramid called the Pyramid of Hate located in Appendix F (Anti-Defamation League, 2005).

## Results

The following is a presentation of the qualitative and quantitative findings as presented in Appendices H and I. The findings are presented in the pre-event, event, and post-event times for violent events and pre-event time for no violent event. Upon analysis of the data, it was found that 20% of the psychiatric patients were involved in WPV in the ED observation unit. To manage these events, staff used chemical restraints 63.6% of the time, physical restraints 9.1% of the time, and security involvement 81.8% of the time. For 45.5% of the events, more than one approach was needed to manage the violent event.

### Violent Observations

For violent events, in the pre-event phase it was concluded that many of the factors involved included an actual or perceived delay in care. The factors observed included the HCT not responding to patient calls or escalating behavior (45%), delay in HCT response to patient requests (55%), HCT giving patients misleading or untrue information (18%), extended wait times (45%), and documented to not be using de-escalation techniques (18%). A history of violence could not be confirmed or denied for many patients due to the nature of the observation.

When looking at non-violent events with respect to the above factors, the frequency is as follows: HCT not responding to patient calls or escalating behavior 1/44 (2.3%), delay in HCT response to patient requests 1/44 (2.3%), HCT giving patients misleading or untrue information 0/44 (0%), extended wait times 9/44 (20%), and not using de-escalating techniques 0/55 (0%), as shown in Appendix J.

An example of an event where WPV occurred can be seen with a particular patient encounter. A patient arrived to the observation unit where he was to be met by the HCT and checked for weapons by security. Upon arrival, the patient went into the room with no staff

interaction. The patient care technician went to the bedside shortly after while the nurse and security remained behind the nurse station. Once the nurse finished on the internet and went to the bedside, the patient verbalized being homicidal, suicidal, and threatened to punch him. The nurse returned to the nursing station and informed security. Security remained on the cell phone for over 4 minutes before going to the bedside to check the patient for weapons. Once security completed his safety check and the HCT completed the psychiatric protocol (i.e. belongings list, blood draw, obtaining a urine sample, placing patient in a gown as seen in Appendix E), the patient was left in the room with the call bell. The patient used the call bell to ask for pain medication and the nurse responded, "Ok, I'll wait on that based on what he said to me; I'm not rush for that." Over 90 minutes later, the nurse called the doctor to request pain medication for the patient. As the patient continued to escalate, using the call bell, requesting to leave, cursing, and getting restless, security remained playing a game on the cell phone. The nurse began to use de-escalation techniques at this time and calling the doctor to address the patient situation. Thirty minutes lapsed between the medication request and the nurse getting the order for it from the doctor. This encounter was included as a delay in HCT response to patient requests, HCT not responding to escalating behavior, and extended wait times.

During the event phase, nurses (RNs) were identified to be utilizing de-escalation techniques. At this time, patients were already angry, yelling, or pacing. Two patients were observed using call bells in an unsafe manner, such as wrapping them around their necks. One patient escalated to destroying hospital monitors and equipment in the unit.

During the post-event time, RNs continued to attempt to use de-escalation techniques (27%), which were observed to be more effective as the patient calmed down. For chemical restraints, no formal debriefing process occurred whereas debriefing did occur after physical

restraints were used. One RN was observed debriefing after chemical restraint was used, leading to calm patient behavior. It is unclear whether the behavior change could be attributed to the debriefing, medication, or a combination of both. Members of the HCT were heard expressing concern and describing the event. Their concerns included the absence of a second exit from the unit, no private rooms for violent patients, and due to the physical layout of the room, no way to avoid getting trapped in the room with a patient. A nurse stated that she was in an unsafe environment and felt she was in an unsafe position during the event. Once during this event the nurse was observed to be in an unsafe position. In this event, the nurse found herself against a wall, with the bed and patient blocking the only exit.

### **Non-Violent Observations**

For the non-violent pre-event phase, factors consistently present included the HCT building rapport (31.8%), minimally disturbing sleeping patients (87.5%), and offering incentives (18.2%). Patients were offered juice, extra food, and TV as a distraction or a bribe to calm down. Nurse awareness of the use of de-escalation techniques was observed (38.6%). The nurses used a variety of these techniques in the pre-event phase. Clear communication, active listening, direct eye contact, setting clear limits, and explaining the process to the patient were frequently observed when there was an absence of violence. Nurses were observed educating co-workers and openly discussing the use of these techniques. For comparison, the above techniques were factors in violent events as follows: building rapport 3/11 (27%), offering incentives 2/11 (18%), and clear use of de-escalation techniques 3/11 (27%). No patients involved in violent events were observed sleeping so a comparison for this factor could not be conducted.

### **Violent and Non-Violent Observations**

In situations with and without WPV, observations included intermittent construction taking place on the unit, use of lights off/down in the unit, use of security cameras in each room, frequent use of cell phones and the Internet, and security stationed in the unit. The effects of the above factors were unclear as they were present whether the event was violent or non-violent. For example, in violent event observations, staff were observed to have brief delays in response time to these violent events while closing Internet browsers, completing typing messages on a cell phone, and/or ending a cell phone call. These same delays were seen when staff responded to patients who did not become violent. In addition, staff frequently discussed the lack of a second exit or a secured nursing station but the effects could not be measured, as these factors were consistent for all events. Concerns noted but not linked to a direct outcome included staff not knowing how to fix non-operative cameras, inconsistency with the execution of the units protocol to inventory patient belongings, and staff not being able to identify which doctor was responsible for which patient after the shifts rotated. The PI documented a reoccurrence of patients complaining about extended wait times and a delay to see a provider in both violent and non-violent observations.

Using the Pyramid of Hate (Appendix G), the researcher evaluated violent events on a 5 level scale, with level 5 being the most severe form of violence and level 1 being the least severe. For this department, 18.2% of WPV events were rated as level 4, including threats to staff, physical assault, and vandalism of unit resources. Although no staff member was injured, there was significant potential during these events considering the severity of violence. The other 81.8% of events were rated a level 2 and included bullying the HCT, name-calling, and avoidance of interactions with the HCT prior to bullying behavior. Further data analysis to

determine the relationship of (a) factors related to WPV and (b) the occurrence of WPV was unable to be further evaluated due to the limited data set. Only 11 violent events were captured during the 8-week observations.

### **Implications and Recommendations**

It is evident that violence does occur in this local community ED setting and leads to the use of chemical restraints, physical restraints, and security intervention. Once violence occurred, it was observed that a majority of the time, security presence was necessary and effective. This ED should continue to maintain security presence in the unit at all times. The early use of de-escalation techniques appeared to aid in decreasing violent outbursts. Specific techniques should include active listening, limit setting, and clear communication. Approaches seen in this project that need to be avoided include ignoring patients and providing misleading or untrue information. Management should ensure staff is educated on de-escalation techniques. Education for the HCT members who are less confident or knowledgeable in this skill set is imperative. In addition, knowledge and consistency were lacking with regard to the HCT following psychiatric protocol across the board. Clear education and expectations should exist across all staff with regard to the process. The department should ensure the protocols are clearly accessible and that staff is efficiently following them for each patient. The use of personal cell devices and the Internet, which may or may not be work-related but should be set aside promptly when staff address patient needs, as WPV can escalate quickly.

Although the majority of WPV events during this observation period at this institution were at a lower level based on the Pyramid of Hate, it does not diminish the concern. Events at this level may have the potential to escalate if not addressed properly. However, it is the more severe cases that have the potential to result in employee injury and long-term consequences.

Threats, vandalism, and assaults can lead to both long-term physical and emotional disability for staff and patients. Having 20% (11/55) of patients involved in violent events creates concern, as staff cannot know which violent event will lead to assault or injury. Educating staff on the various levels of violence and behaviors to recognize early will help the HCT better understand, prepare, and react to escalating situations. Based on observer analysis, the factors that patients most often complained about included extended wait times and delay to see a provider when requested. Simply addressing these factors as well as the factors linked to WPV discussed above may decrease the risk to staff and patients. It is recommended to have clear expectations in regards to informing patients of their plan care. The expectation of the HCT should be to discuss this information with the patient within a set timeframe. A recommendation to ensure this occurs would be to have the doctor's desk located within the observation unit along with the nurse, patient care technician, and security.

It is imperative to discuss with management and administration the results of the project, including the concern with safety. Discussing ways to ensure a safe environment including eliminating call bell cords and other items in the room would be a key step. It appeared that the unit has been used for medical patients in the past. It is in the best interest of both the HCT and patients if the unit was permanently cleared of excess medical equipment to protect all involved parties. Discussing the limitations of room design and safety concerns with nurses getting blocked in a room may lead to new ideas to improve practice and promote safety. It is specifically recommended to have a meeting designed to identify a way to adjust the room layout for efficient and safe practice to be conducted. The goal of this meeting should include not only a better physical design in the mindset of administration, but also to find a design where the HCT feels safe to provide care. The new layout should be immediately implemented and then

evaluated to ensure success. To further determine the association with (a) factors related to WPV and (b) the occurrence of WPV, additional observation is needed for a more extended time frame in order to capture a greater number of events.

### **Limitations**

This quality improvement project was conducted at one local community emergency department and therefore, the results are not generalizable to all Emergency settings or departments. In addition, the project was conducted in one unit of the department during limited time intervals, thereby limiting the number of events captured. The unexpected construction within the unit may have altered the amount of data obtained due to the reduced number of patients presenting to the unit. The construction also eliminated the use of the private rooms in the unit, altering the types of patients placed in the unit. According to policy, patients with more violent presentations cannot be placed in semi-private rooms, which caused them to be directed to other units. This factor alone may have greatly decreased the number of witnessed events as well as altered the number of more severe or higher level events using the Pyramid of Hate.

Additional observations of WPV events would lead to a more in depth understanding of the variables in place at this ED. This would be achieved through an extended observation time frame during more ideal unit conditions including the elimination of construction projects. Another factor in the project was the presence of an informed observer as the PI. The observer brought a knowledge base of the unit that may have aided in data collection. This factor may have accounted for the observer recognizing technology as a factor in WPV when literature had not identified this factor. However, this predisposed knowledge base within the unit may have also aided in bias that will remain unknown. The final limitation to consider is the project design. There was a high value in conducting this project using a prospective design. This provided first

hand observations during actual violent events. However it limited the number of events captured. A retrospective design would have allowed the PI to collect a larger number of events to be used for data collection although limiting the data obtained to what was previously documented.

### **Conclusion**

In conclusion, WPV is a concern in the emergency setting especially involving psychiatric patients. WPV is often under reported and often leads to injury. Many factors are associated with WPV. It is important for the HCT to use evidence-based methods to determine factors related to WPV in their health care setting. They can use this information to ensure they provide evidence-based patient management and maintain a safe environment. The Haddon Matrix is one framework that can and has been used to evaluate WPV in an effort to improve safety and eliminate injury.

### References

- Anti-Defamation League. (2005). *Pyramid of hate*. Retrieved from <http://www.adl.org/assets/pdf/education-outreach/Pyramid-of-Hate.pdf>
- Baker, S. (2012). Management of acute agitation in the emergency department. *Advanced Emergency Nursing Journal*, 34(4), 306-318.
- Centers for Disease Control and Prevention. (2002). *Violence occupational hazards in hospitals*. Retrieved from <http://www.cdc.gov/niosh/docs/2002-101/>
- Gates, D., Gillespie, G., Smith, C., Rode, J., Kowalenko, T., Smith, B., & Arbor, A. (2011). Using action research to plan a violence prevention program for emergency departments. *Journal of Emergency Nursing*, 37(1), 32-39.
- Gertz, M. F., Daniel, C., Dearie, V., Prematunga, R., Bamert, M., & Duxbury, J. (2013). The outcome of a rapid training program on nurses' attitudes regarding the prevention of aggression in emergency departments: A multi-site evaluation. *International Journal of Nursing Studies*, 50, 1434-1445. doi:10.1016/j.ijnurstu.2013.01.007
- Gillespie, G., Gates, D., & Berry, P. (2013). Stressful incidents of physical violence against emergency nurses. *Online Journal of Issues in Nursing*, 18(1), 2. doi:10.3912/OJIN.Vol18No01Man02
- Haddon, W. (1972). A logical framework for categorizing highway safety phenomena and activity. *The Journal of Trauma*, 12(3), 193-207.
- Jelinek, G., Weiland, T., Mackinlay, C., Gerdtz, M., & Hill, N. (2013). Knowledge and confidence of Australian emergency department clinicians in managing patients with mental health-related presentation: Findings from a national qualitative study. *International Journal of Emergency Medicine*, 6(2), 1-7.

- Kowalenko, T., Cunningham, R., Sachs, C., Gore, R., Barata, I., Gates, D., . . . McClain, A. (2012). Workplace violence in emergency medicine. *Journal of Emergency Medicine, 43*(3), 523-531.
- Kynoch, K., Wu, C. J., & Chang, A. M. (2011). Interventions for preventing and managing aggressive patients admitted to an acute hospital setting: A systematic review. *Worldviews on Evidence-Based Nursing, 8*(2), 76-86.
- Manton, A. (2013). *Care of the psychiatric patient in the emergency department* (White paper). Des Plaines, IL: Emergency Nurses Association. Retrieved from <https://www.ena.org/practice-research/research/Documents/WhitePaperCareofPsych.pdf>
- McPhaul, K., & Lipscomb, J. (2004). Workplace violence in health care: Recognized but not regulated. *Online Journal of Issues in Nursing, 9*(3), 6. Available at [www.nursingworld.org/MainMenuCategories/ANAMarketplace/ANAPeriodicals/OJIN/TableofContents/Volume92004/No3Sept04/ViolenceinHealthCare.aspx](http://www.nursingworld.org/MainMenuCategories/ANAMarketplace/ANAPeriodicals/OJIN/TableofContents/Volume92004/No3Sept04/ViolenceinHealthCare.aspx)
- Newhouse, R., Dearholt, S., Poe, S., Pugh, L. C., & White, K. (2005). *The Johns Hopkins Nursing Evidence-based Practice Rating Scale*. Baltimore, MD: The Johns Hopkins Hospital; Johns Hopkins University School of Nursing.
- Papa, A., & Venella, J. (2013). Workplace violence in healthcare: Strategies for advocacy. *OJIN: The Online Journal of Issues in Nursing, 18*(1), Manuscript 5. doi:10.3912/OJIN.Vol18No01Man05
- Powley, D. (2013). Reducing violence and aggression in the emergency department. *Emergency Nurse, 21*(4), 26-29.

- Richmond, J., Berlin, J., Fishkind, A., Holloman, G., Zeller, S., Wilson, M., Rifai, M., & Ng, A. (2011). Verbal De-escalation of the Agitated Patient: Consensus Statement of the American Association for Emergency Psychiatry Project BETA De-escalation Workgroup. *Western Journal of Emergency Medicine*, 13(1), 17-25.  
doi: 10.5811/westjem.2011.9.6864
- Rocca, P., Villari, V., & Bogetto, F. (2006). Managing the aggressive and violent patient in the psychiatric emergency. *Progress in Neuro-psychopharmacology & Biological Psychiatry*, 30(4), 586-598.
- Runyan, C. (1998). Using the Haddon Matrix: Introducing the third dimension. *Injury Prevention*; 4, 302-307. doi: 10.1136/ip.4.4.302
- Runyan, C., Zakocs, R., & Zwerling, C. (2000). Administrative and behavioral interventions for workplace violence prevention. *American Journal of Preventive Medicine*, 18(4S), 116-126.
- Sivakumar, S., Weiland, T., Gertz, M., Knott, J., & Jelinek, G. (2011). Mental Health-related Learning needs of Clinicians working in Australian Emergency Departments: A National Survey of Self-reported Confidence and Knowledge. *Emergency Medicine Australasia*, 23, 697-711.
- Taylor, J., & Rew, L. (2010). A systematic review of the literature: Workplace violence in the emergency department. *Journal of Clinical Nursing*, 20, 1072-1085. doi:10.1111/j.1365-2702.2010.03342
- Zun, L. (2012). Pitfalls in the care of the psychiatric patient in the emergency department. *Journal of Emergency Medicine*, 43(5), 829-835.

**Appendix A: Haddon Matrix Template**

| Phases     | Host | Equipment | Physical Environment | Social Environment |
|------------|------|-----------|----------------------|--------------------|
| Pre-event  |      |           |                      |                    |
| Event      |      |           |                      |                    |
| Post-event |      |           |                      |                    |

Model adapted from Haddon Matrix by Haddon (1972) and Runyan (1998)

**Appendix B: Literature Review Table: ED Psychiatric Patient Management**

| # | Author   | Date | Evidence Type   | Sample & Sample Size  | Results/ Recommendations  | Limitations  | Rating Strength/ Quality |
|---|--|------|---|---|---|--|--------------------------|
| 1 | Sivakumar, Weiland, Gertz, Knott, & Jelinek              | 2011 | Cross-sectional national survey; qualitative study                      | 225 participants both nurses and doctors in the ED                          | Deficits in confidence and knowledge exist in the management of psychiatric patients in the ED. Areas of need of intervention include patient factors, environmental factors, process barriers, and knowledge and skill deficit. Data should be used in future research find ways to improve care and manage ED psychiatric patients.   | No quantitative data obtained; survey instrument has no confirmed test-retest reliability; cannot rule out non-response bias or selection bias; smaller sample size than needed for a 95% CI.                    | III / B                  |
| 2 | Gertz, Daniel, Dearie, Prematunga, Bamert, & Duxbury     | 2013 | Mixed method; pre-test post-test survey and key stakeholders interviews | 471 nurses and midwives employed at participating ED                        | The environment was identified as a risk factor in aggression. Staff attitudes showed significant change on 1 of 5 items tested: staff showed a heightened awareness for the environment and the patient's perception of the environment after program initiation. Staff continued to be uncertain about the role and safety of restraint use.  | Only acquired data from nurses/midwives, no data obtained based on patient perspectives. Possible response bias due to non-random convenience sampling. Two-thirds drop out rate between pre-test and post-test. | II / B                   |
| 3 | Gates, Gillespie, Smith, Rode, Kowalenko, Smith, & Arbor | 2011 | Qualitative; group interviews, open-ended questions                     | 3 hospitals; U.S.; 96 participants all ED employees                         | The Haddon Matrix was used to evaluate WPV. Employees are dissatisfied with WPV. Strategies to be explored for improvement include communication, frequent training, staffing issues, and isolation of the aggressor. A desire to stick with non-violent interventions was clear. A need for enhanced security and police involvement was stated. Interventions such as debriefing are necessary to reduce emotional trauma, job dissatisfaction, and turnover.                         | The study may not be generalizable to all ED settings, including rural settings. Only interviewed nurses and managers. Only qualitative data were obtained.  | III / A                  |
| 4 | Gillespie, Gates, & Berry                                | 2013 | Qualitative; descriptive research design                                | 177 nurses currently employed by the ED setting; systematic random sampling | Four themes related to aggression were identified: personal worker factors, workplace factors, aggressor factors, and assault situations. Violence was most prevalent with mental health illness and substance abuse. Victims of violence were seen as more likely target for further violence acts. Staff is encouraged to maintain a safe distance from patients and have a workplace layout to enhance safety. Patients with history of violence were more likely to become violent. | No quantitative data were obtained. Potential for selection bias; self-selected participants. Homogeneous sample was used (White, females, bachelor-prepared)  | III / A                  |
| # | Author   | Date | Evidence  | Sample &  | Results/ Recommendations  | Limitations  | Rating                   |

|   |   | Type | Sample Size   |   |  | Strength/<br>Quality  |         |
|---|---|------|---|---|--|---|---------|
| 5 | Runyan, Zakocs, & Zwerling                  | 2000 | Systematic review of qualitative and quantitative designs | 137 papers were reviewed discussing WPV and intervention strategies; 50 papers providing data results | Nine articles provided data on intervention strategies but used weak designs and lacked consistent reliability/validity. 41 articles were on suggested interventions with no data provided. No intervention was shown to be consistently effective or used. Theoretical framework such as Haddon Matrix has been used to consistently identify gaps and should be used to guide future interventions.  | Retrospective study reviewing literature, so some data could have been missed due to lack of documentation. Most articles were qualitative design. Limited data obtained. Focus was broad, not just ED or healthcare.   | IV / B  |
| 6 | Jelinek, Weiland, Mackinlay, Gerdtz, & Hill | 2013 | Qualitative; telephone interviews                         | 36 emergency department doctors and nurses clinical active  | Knowledge gaps in risk assessment related to violence exist in the ED. Better availability of skilled psychiatric support staff would enhance staff confidence. Areas of least confidence for staff include risky behaviors, continuity of care, and managing dual-diagnoses. A desire to learn evidence-based practice was discussed. Nurses feel a lack of knowledge and skill to treat psychiatric patients in the ED.  | Qualitative design, no quantitative data or intervention identified. Results not necessarily generalizable due to limited region of study.  | III / B |
| 7 | Kynoch, Wu, & Chang                         | 2011 | Systematic review of RCTs                                 | 10 studies reviewed of RCTs on adult patients over 18y.o.   | Evidence supports staff training, chemical restraints, and physical restraint use for aggressive patient management. No strong evidence supports one specific intervention. It is recommended that institutions implement interventions related to medication administration, staff training, and physical restraints. There is a need for a systematic review of all qualitative literature/evidence in order to determine efficacy of different interventions. | Disagreement between reviewers in the evaluation process of data. Ethical issues with conducting studies in this area create barriers to knowledge and limit ability to complete RCTs. No qualitative data were reviewed (much of the literature obtained on this topic was excluded by excluding this data). | I / B   |
| 8 | Taylor & Rew                                | 2010 | Systematic review   | 16 articles reviewed; quantitative and qualitative, as well as mixed method design                    | There is a lack of intervention studies. No consistent framework/standardized process was provided in literature to guide evidence-based practice based on results. There is under-reporting of WPV in the ED.   | Data specific to the ED on this topic were limited; a lot of WPV data were excluded. Older data were excluded due to time frame but could have offered value due to the already limited data available. Potential for bias- one review is a ED nurse but aimed to remain neutral.                             | IV / A  |

**Appendix C: Haddon Matrix Theme Identification**

| Phases                       | Host (victim)   | Agent<br>(source of<br>violence)   | Physical<br>Environment   | Social<br>Environment   |
|------------------------------|---|--|---|---|
| Pre-event<br>(Pre-assault)   | <ul style="list-style-type: none"> <li>• Nurse Knowledge</li> <li>• Nurse Education</li> <li>• Experience</li> <li>• Policy, procedure</li> </ul> | <ul style="list-style-type: none"> <li>• History of violence</li> <li>• Patient experience</li> </ul>                            | <ul style="list-style-type: none"> <li>• Adequate lighting</li> <li>• Environment free of safety hazards</li> </ul> | <ul style="list-style-type: none"> <li>• Policy dissemination</li> <li>• Two Nurse presence</li> <li>• Security</li> <li>• Visitor policy</li> <li>• Stress management</li> </ul> |
| Event<br>(Assault)           | <ul style="list-style-type: none"> <li>• Escape techniques</li> <li>• Non-violent crisis intervention</li> </ul>                                  | <ul style="list-style-type: none"> <li>• Distance between patient and nurse</li> <li>• Isolation of perpetrator</li> </ul>       | <ul style="list-style-type: none"> <li>• Alarms; security system</li> </ul>   | <ul style="list-style-type: none"> <li>• Escape route</li> <li>• Security action plan</li> </ul>  |
| Post-event<br>(Post-assault) | <ul style="list-style-type: none"> <li>• Debrief</li> <li>• Counsel</li> <li>• Event reporting</li> </ul>   | <ul style="list-style-type: none"> <li>• Police involvement</li> <li>• Violent Patient identified</li> <li>• Referral</li> </ul> | <ul style="list-style-type: none"> <li>• Surveillance camera</li> </ul>   | <ul style="list-style-type: none"> <li>• Emergency treatment</li> <li>• Rehabilitation and job retention strategies</li> <li>• Debrief</li> </ul>                                 |

Model adapted from Haddon Matrix by Haddon (1972) and Runyan (1998)

**Appendix D: Observation and Analysis Tool Adapted from the Haddon Matrix**

Event #: \_\_\_\_\_

History of Psychiatric Diagnosis: \_\_\_\_\_

History of Violence: \_\_\_\_\_

Began ED work up in Observation Unit: \_\_\_\_\_

Violent Event Occurred: \_\_\_\_\_

Trigger Identified: \_\_\_\_\_

| Phases     | Host | Equipment | Physical Environment | Social Environment |
|------------|------|-----------|----------------------|--------------------|
| Pre-event  |      |           |                      |                    |
| Event      |      |           |                      |                    |
| Post-event |      |           |                      |                    |

### **Appendix E: WPV Policies**

- Overview of hospital policy on WPV:

The general policy reviews the institution's definition of WPV. In addition, states that security assigns a threat assessment team to assess the institution's vulnerability to WPV to take preventive measures. New hires are screened for a history of violence and victims are referred to medical, psychological, and legal counsel.

- Overview of ED policy on WPV:

The hospital policy is used for the ED. See above.

- Overview of hospital policy on psychiatric patient management:

Multiple policies discussing various aspects of psychiatric patient management are available. The policies discuss the availability of provider consultation and the process for medically screening patients prior to psychiatric evaluation in the ED. It also explains the requirement to document symptoms related to substance abuse or mental health concerns, and the requirement to refer patients with substance abuse to appropriate treatment on discharge.

Other policies include (a) the procedure for transferring a patient from the institution to a psychiatric institution as well as the process for voluntary and involuntary admission/documentation; (b) what precautions to take for suicidal patients, including the removal of equipment from the room and 1:1 observation if admitted to the general hospital; (c) the use of behavioral restraints and acute care restraints including definitions, required training/education, the process for application, and when to remove restraints; and (d) a policy on non-violence crisis intervention, role designation of each health care provider, and the need for collaboration.

- Overview of ED policy on psychiatric patient management:

No specific policy for the ED; the ED policy is within the hospital policy as discussed above. The specific procedure/protocol for patients presenting in the ED is discussed below.

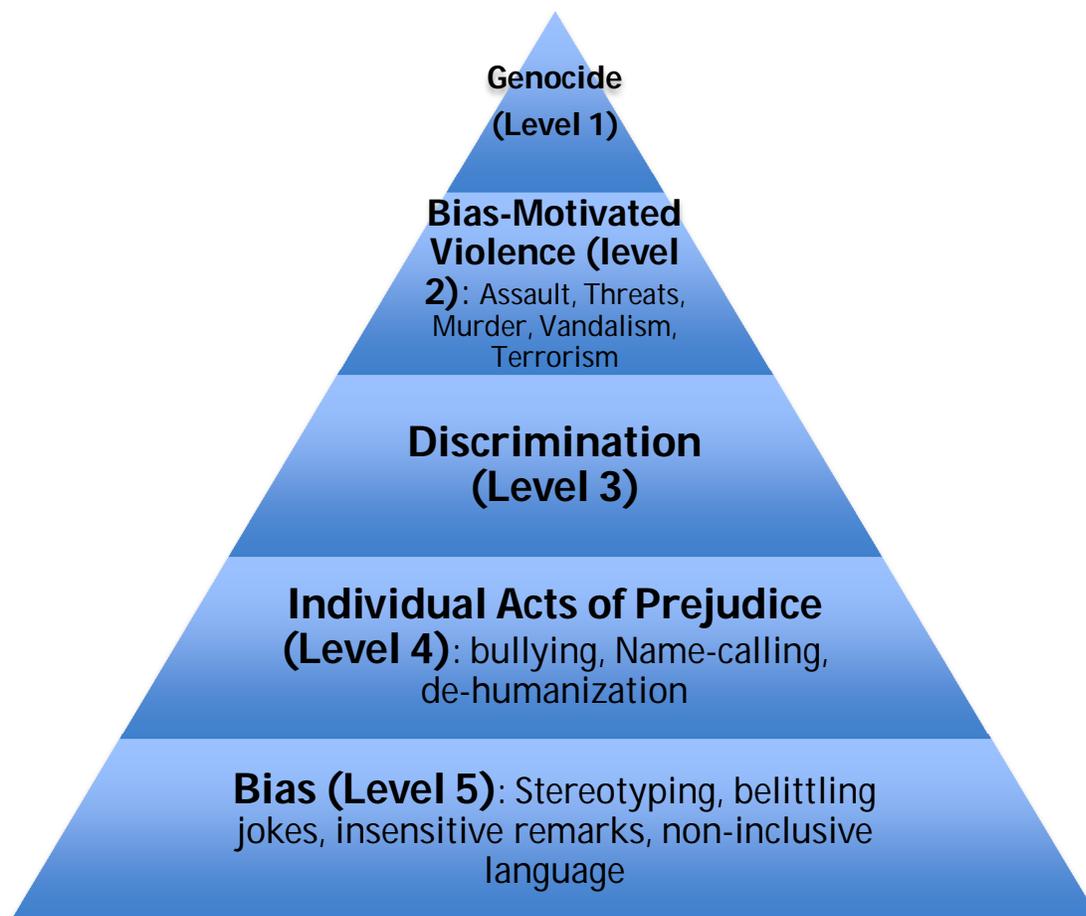
- ED procedure for psychiatric patients:

Patients are triaged and moved to an appropriate bed placement within the ED. When beds are available, the patient is placed directly to the observation unit. A protocol is ordered guiding the HCT to begin the assessment, evaluation, and treatment process. The patient is to remove all clothing and wear a gown, while security checks belongings for weapons. After the weapon check, valuables are secured in a sealed bag and placed with security. Other clothing and belongings are placed in a locked location during the patient's stay in the unit.

The HCT draws appropriate lab work, obtains urinalysis and toxicology screening, and an ED physician evaluates the patient to medically clear him or her. Once he or she is medically cleared, the patient is then seen by psychiatry for admission or discharge decision. Patient care is managed throughout the ED stay by the ED HCT until the decision to admit occurs and the patient is accepted onto the psychiatric service.

### Appendix F: Pyramid of Hate

Pyramid of hate used for data analysis to allow for a ranking of events from physical violence to psychological violence. This ordinal data was used for data analysis.



Adapted From: Pyramid of Hate by Anti-Defamation League (2005).

**Appendix G: WPV Factors**

| Phases     | Host  | Equipment                  | Physical Environment   | Social Environment                                   |
|------------|---|----------------------------|--|--|
| Pre-event  | Ignoring<br>No De-escalation<br>Long waits<br>Misleading info.<br>Delay in Response | Pacing<br>Restlessness     | Lights down<br>Intermittent construction<br>Call bell in reach | Security presence<br>Locked unit<br>Cameras in rooms |
| Event      | De-escalation techniques  | Yelling<br>Pacing<br>Angry | Lights down<br>Intermittent construction<br>Call bell in reach | Security presence<br>Locked unit<br>Cameras in rooms |
| Post-event | Debriefing for physical restraints  | Calm<br>Discharged         | Lights down<br>Intermittent construction                       | Security presence<br>Locked unit<br>Cameras in rooms |

Model adapted from Haddon Matrix by Haddon (1972) and Runyan (1998)

**Appendix H: Factors in the Absence of WPV**

| Phases     | Host  | Equipment | Physical Environment   | Social Environment                                   |
|------------|---|-----------|--|--|
| Pre-event  | De-escalation techniques<br>Building rapport<br>Bribes<br>Active listening<br>Limit setting |           | Lights down<br>Intermittent construction<br>Call bell in reach | Security presence<br>Locked unit<br>Cameras in rooms |
| Event      | n/a   | n/a       | n/a  | n/a  |
| Post-event | n/a   | n/a       | n/a  | n/a  |

Model adapted from Haddon Matrix by Haddon (1972) and Runyan (1998)

**Appendix I: Data Analysis**

| Frequency of Violence and Restraint Use in the Presence of Violence |        |
|---|--------|
| Violent Event Occurred  | 20%    |
| No Restraint Used   | 0%     |
| Chemical Restraint Used   | 63.70% |
| Physical Restraint Used   | 9.10%  |
| Security participation  | 81.80% |
| 2(+) approaches combined  | 45.50% |

Appendix J

Table 1: Factors in WPV compared to prevalence of the factors occurring in non-violent events.

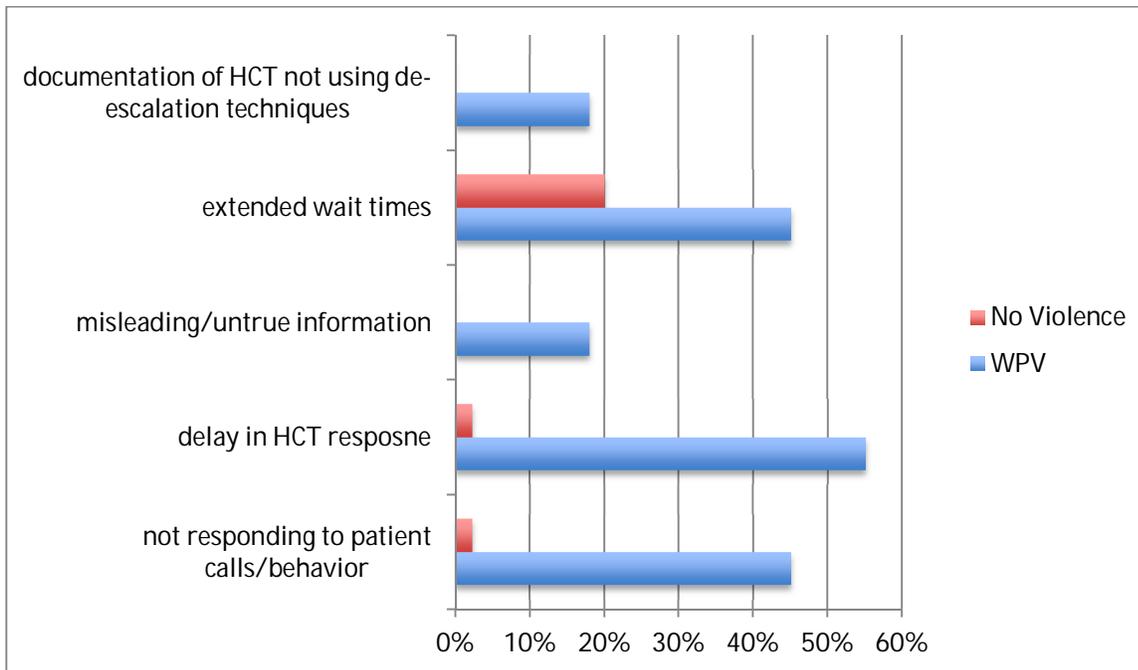


Table 2: Factors in non-violent events compared to prevalence of factors occurring in WPV.

