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ASSAULT PREVENTION THROUGH USE OF RISK FOR VIOLENCE SCREENING TOOL

A DOCTORAL PROJECT

Submitted in Partial Fulfillment of the Requirements

For the degree of

DOCTOR OF NURSING PRACTICE

By

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## ABSTRACT

**Introduction:** Healthcare workers in hospital-based Emergency Departments (EDs) experience high rates of workplace violence perpetrated by patients. **Aim:** The purpose of this quality improvement project was to implement and evaluate the effectiveness of a risk for violence screening tool (RVST) in an urban, academic trauma center ED to reduce staff assaults through an alert system and focused assault prevention strategies. **Method:** Using the socioecological framework, facility, and literature-based risk factors for assaultive behavior, a RSVT to flag patients for aggression reduction strategies was developed, implemented and evaluated. Six steps included the following: (1) adult patients screened at triage for risk criteria for violence, (2) positive risk patients identified with a Golden Hand (GH), (3) Electronic Medical Record (EMR) tracking system flagged with GH symbol to alert staff to risk, (4) GH signage posted to communicate patients' violence propensity, (5) assault prevention strategies implemented, (6) permanent EMR flag for repeatedly assaultive patients. **Results:** Physical assaults on staff were recorded and tracked monthly from January 2019, through January 2021, through a retrospective review of the hospital's online incident report system. Patient-to-staff physical assaults decreased from a range of one to four per month to a range of zero to one per month. Triage screening accuracy and compliance for patients who were assaultive increased from 33% compliance and 0% accuracy, to 96% compliance and 83% accuracy. **Conclusion:** Risk for violence screening upon arrival, an alert system, and assault mitigation strategies provide an opportunity for nurse leaders to promote ED workplace safety.

*Keywords:* workplace violence, healthcare worker assault, violence, aggression, emergency department, prevention, risk for violence screening tools, framework

## TABLE OF CONTENTS

ABSTRACT.....	iii
ACKNOWLEDGEMENTS.....	viii
BACKGROUND .....	1
Purpose Statement .....	3
Social Ecological Model: Framework for Violence Prevention.....	3
Model Level Descriptions.....	6
Quality Improvement Model.....	7
REVIEW OF LITERATURE .....	11
Workplace Violence.....	11
Precipitating Factors for Violence in EDs: Precedents and Antecedents of Violence .....	12
Perpetrator/Patient Characteristic Risk Factors .....	13
Healthcare Worker Risk Factors.....	14
Environmental/Organizational Risk Factors.....	15
Risk for Violence Screening Tools.....	15
Prevention Strategies for Workplace Violence.....	17
Framing the Violence Prevention Strategy.....	18
METHODS .....	20
Design .....	20
Setting .....	20
Sample.....	21
Ethical Considerations .....	21
Implementation of the Quality Improvement Program.....	21
Data Collection .....	26
Data Analysis.....	28
RESULTS .....	30
Sample Demographics .....	30
Physical Assaults .....	32
Monitoring RSVT Compliance and Accuracy.....	32
DISCUSSION.....	37

Limitations .....	40
CONCLUSION.....	41
REFERENCES .....	42

LIST OF TABLES

<u>Table</u>	<u>Page</u>
1. Demographic Characteristics of Patients Involved in Assaults/Behavioral Events...	30
2. Demographic Characteristics of Staff Involved in Assaults .....	32

LIST OF FIGURES

<u>Figure</u>	<u>Page</u>
1. Social-Ecological Model Framework for Violence Prevention.....	5
2. PDSA Model for Quality Improvement.....	8
3. Flowchart of ED Violence Risk and Prevention Screening.....	23
4. Control Physical Assaults c Chart by Month.....	33
5. Staff compliance with and Accuracy of Risk for Violence Screening .....	34
6. Pain Score for Assaultive and Behavioral Patients.....	35
7. Themes Surrounding Physical Assaults and Behavioral Events.....	36

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## Background

Patient aggression and violence toward healthcare workers is a growing local, national, and international problem, recognized by several professional, regulatory, and licensing organizations. The World Health Organization (WHO) defines Workplace Violence (WPV) as “incidents where staff are abused, threatened, or assaulted in circumstances related to their work, involving an implicit or explicit challenge to their safety, well-being or health” (Violence Against Health Workers, 2018). The impact of WPV has been shown to reduce job satisfaction and commitment to career and work efficiency, resulting in poor quality of life, increased stress, sleep irregularities, burnout and even death. In addition, WPV has a negative effect on the retention of healthcare workers (HCWs) and the quality of medical care (Liu et al. 2019), affecting patient outcomes, staff productivity, and quality of life, not to mention the organizational costs of work-related injuries (Gabel-Speroni et al., 2014). Frequent exposure to WPV can result in anger, fear or anxiety, post-traumatic stress disorder symptoms, decreased job satisfaction, increased intent to leave the organization, lower health and well-being, absenteeism, poor morale, moral disengagement, and decreased productivity (d’Ettorre et al., 2018; Ramacciati et al., 2019).

HCWs in hospital-based Emergency Departments (EDs) experience high rates of workplace violence perpetrated by patients. The emergency department (ED) is often a chaotic, fast paced environment with frequent patient turnover, continuously changing priorities, unusual sounds, sights and smells, and high level of ambiguity (Wolf, 2016). Gacki-Smith et al. (2009) reported hospital ED staff suffer a patient-to-staff violence rate of 30% physical assault and 54% verbal assault annually. Campbell et al. (2015) found that as many as 70% of emergency nurses experienced abuse or violence by patients including threats, assaults, and sexual harassment.

Nurses are victimized at higher rates than other healthcare professionals, which correlate with findings of increased patient contact time (Martinez, 2016). Due to decreased funding and access to mental health services, severely ill and marginalized patients with tendencies for violence have increased their use of EDs rather than more specialized facilities for treatment. At the tertiary safety net hospital where this project was conducted, the annual ED patient population of over 170,000 includes the homeless, the severely violent, transfers or discharges from forensic settings, and a high number of patients with co-morbid medical illnesses, personality and substance use disorders (Claudius et al., 2017).

Studies show that effective strategies for reducing risk of assault include implementing workplace environmental designs that ensure safe egress, educational courses to improve the workers' communication skills, minimizing stressful situations in waiting rooms, candid reporting of each violent incident, improving the healthy work environment (HWE) through management commitment and active employee involvement in a WPV prevention program (d'Etorre et al., 2018). The Occupational Safety and Health Administration (OSHA) created a webpage to provide employers and workers with strategies and tool kits for preventing WPV in various healthcare settings. OSHA recommends strategies and tools focusing on WPV prevention programs including management commitment and worker participation; worksite analysis and hazard identification; danger prevention and hazard control; training programs on safety and health; robust record keeping, systematic program evaluation and feedback to HCWs. OSHA can fine employers if WPV is recognized, but the organization does nothing to prevent violent events from occurring in the workplace, putting HCWs, visitors and patients at risk (Gillespie et al., 2017). Environmental risk assessments done on a consistent basis create a structure for managing and reducing WPV.

## **Purpose Statement**

The purpose of this quality improvement project was to implement and evaluate the effectiveness of a risk for violence triage screening tool (RVST) in an urban, academic trauma center emergency department to reduce staff assaults through an alert system and focused assault prevention strategies.

## **Social Ecological Model: Framework for Violence Prevention**

Utilization of a theoretical framework is a critical step in planning interventions to change patient and provider behavior or systems. Theory is closely linked to strategic planning, so it is critical to carefully select an implementation framework, through which lens the entire project is focused. There are a number of theories and frameworks that guide individual and organizational behavior change; and selecting the most appropriate theory for designing implementation interventions can be challenging (French et al., 2012). Several publications focus on patient signs and symptoms of agitation or use of a validated screening or assessment tool to determine if a patient requires de-escalation techniques (Arnetz et al., 2015; d’Ettorre et al., 2018, Gillespie et al., 2014); however, few look at the whole complexity of constructs which are at play when a violence-vulnerable patient enters the realm of an urban, tertiary care, Level 1 trauma center’s ED.

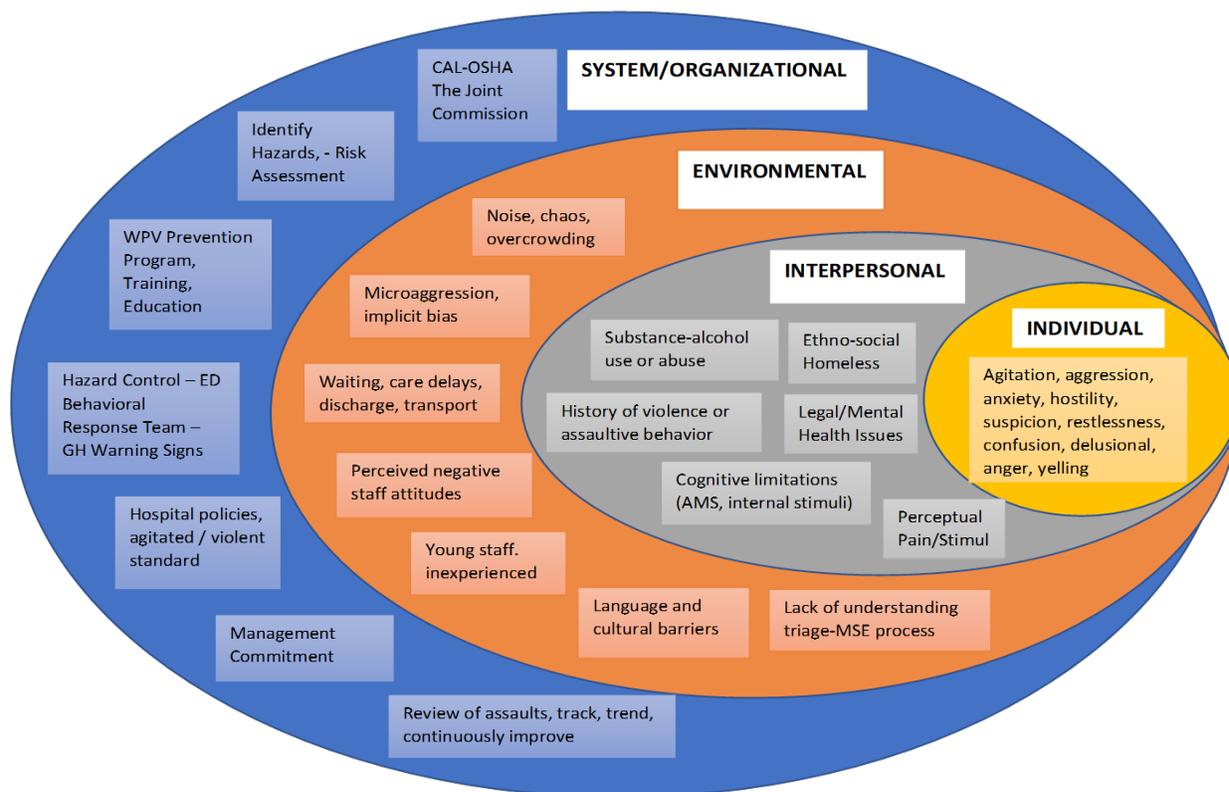
Frequently used in epidemiological or safety frameworks and programs, the Social Ecological Model (SEM) allows the development of strategies to influence the risk factors and mitigate the outcome. The ultimate goal of the work of violence prevention is to stop violence before it begins. Epidemiology looks at the infection (acute behavioral disturbance), the host (medical, mental, social factors, status), the exposure (environmental stressors to the host), and the system (prevention programs, policies, procedures, supportive management), so this SEM

model lends itself towards the prevention of aggression and assaults. Violent behavior is complex and results from a combination of multiple, complicated influences on behavior. How patients relate and respond to those around them, and their internal and external environment influences their behavior (CDC - NIOSH Publications and Products - The Changing Organization of Work and the Safety and Health of Working People, 2014). The SEM framework views the individual behavioral and emotional precursors to violence within the context of a system of constructs wherein these behaviors can escalate to assaultive behavior or be controlled with minimal impact on the system, if identified and acted on early.

SEM proposes the four inter-related ecosystems: individual, relationship, community, and system/society, which collectively create a dynamic within which patients, providers and staff influence each other, impacting the healthcare systems, medical centers, and hospitals, and ultimately the work unit where patient care is delivered. Using the modified four-level SEM (individual, interpersonal, environmental and system/organization) would help providers to better understand the complexity of violence and the effect of potential prevention strategies and consider the range of factors that put people at risk for violence. It would also help to mitigate situations or experiences that can incite violence. Figure 1 depicts the Violence Prevention Model modified from the Centers for Disease Control (CDC) SEM. The overlapping rings in the model exemplify how elements at one level interchangeably influence factors at another level.

**Figure 1**

*Social-Ecological Model Framework for Violence Prevention: Modified from the Centers for Disease Control and Prevention*



*Note:* This framework depicts the Violence Prevention Model modified from the Centers for Disease Control (CDC) SEM. The overlapping rings in the model exemplify how elements at one level interchangeably influence factors at another level, viewing the individual behavioral and emotional precursors to violence within the context of a system of constructs wherein these behaviors can escalate to assaultive behavior or be controlled. *Model: A Framework for Prevention.* <https://www.cdc.gov/violenceprevention/overview/socialecologicalmodel.html> (Accessed February 2, 2020).

## **Model Level Descriptions**

### ***Individual/Internal Level***

In this level, biological, emotional, and behavioral factors are identified. For example, acute behavioral disruptions (ABD) such as agitation, aggression, anxiety, hostility, suspicion, restless/pacing, confused, delusional, angry, yelling, require immediate interventions to prevent physical or verbal assault, or violence (Robertson et al., 2012; Weiland et al., 2017).

### ***Relationship/Interpersonal Level***

In this level, interpersonal relationships and social history that may increase the risk of experiencing violence as a victim or perpetrator are examined. Such factors include substance or alcohol use or abuse, current or recent history of violent or assaultive behavior, cognitive limitations, altered mental status, hallucinations or responding to internal stimuli, incarceration, homelessness, (Robertson et al., 2012) psychiatric hold for danger to others and high levels of pain. Dagirmanjian et al. (2017) found that violent behavior was perceived as essential when there is a sense of threat to one's social status or self-image (Dagirmanjian et al., 2017).

### ***Community/Environmental Level***

In this level, the ED setting in which the social relationships influence the responses that can lead to violence were explored. Descriptors involve such factors as noise, chaos, overcrowding, perception of negative staff attitudes, micro-aggressions, implicit bias, inexperienced or insufficiently trained staff, language/cultural/racial barriers, lack of understanding the triage/medical screening process, delays in treatment, and transitions in care (discharge, transport, waking up) (Dagirmanjian et al., 2017; Gillespie et al., 2013; Martinez, 2016; Warshawski et al., 2019).

### ***System/Organizational Level***

In this level, broad system/organizational factors are examined, such as risk assessment or identification of work hazards, workplace violence prevention programs, staff training, education, regulatory agencies (CAL-OSHA, The Joint Commission; Arnetz et al., 2017), hospital zero tolerance policies, agitated/violent patient standards, management commitment to staff safety, strong safety and just culture, monitoring of assaults (track, trend), analyzing and risk mitigation. These factors help create a climate in which violence is discouraged while maintaining awareness of economic or social inequalities between groups in society of an urban, academic trauma center ED where cultures and world views merge and sometimes collide (CDC - NIOSH Publications and Products, 2014; McPhaul et al., 2013).

### **Quality Improvement Model: Plan - Do - Study - Act (PDSA)**

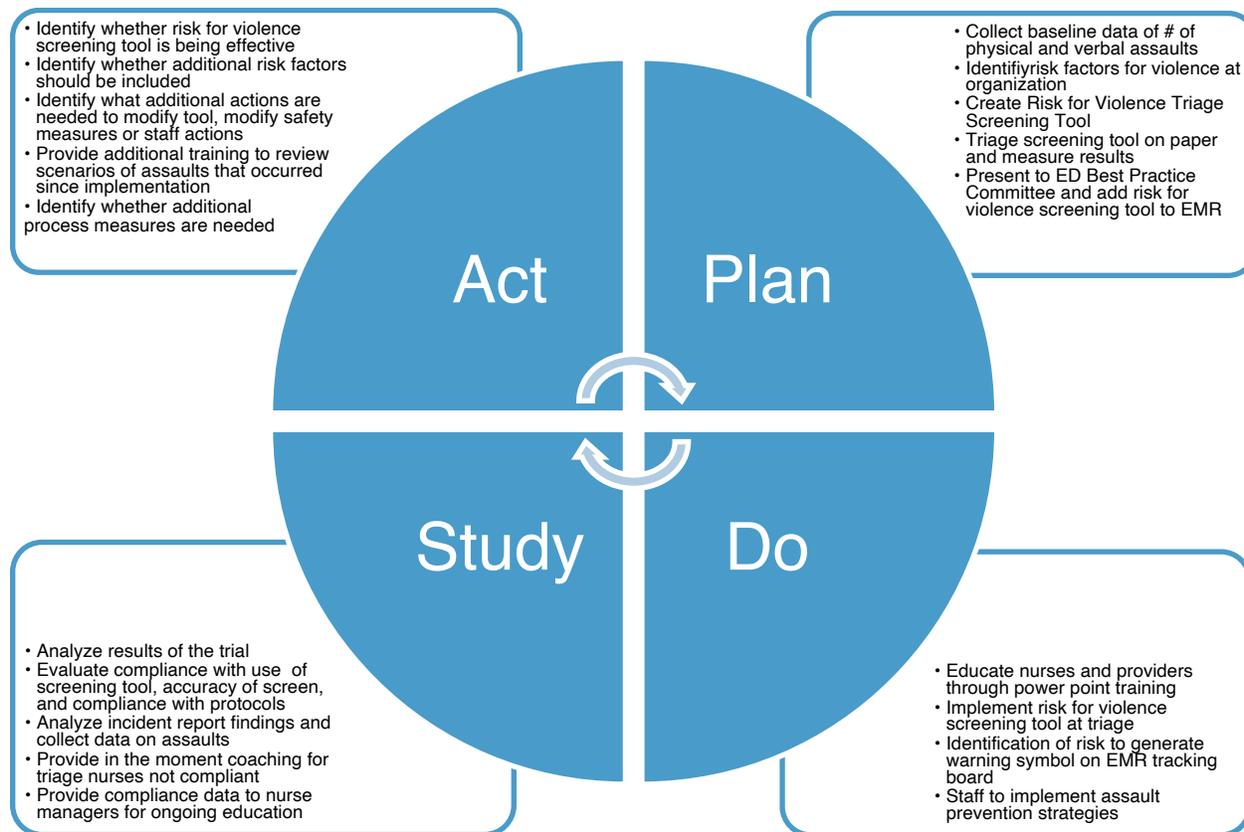
While the social ecological model framework helped to contextualize WPV within the environment of the ED, the PDSA framework guided the quality improvement action and allowed for a rapid cycle test of the planned change in this project. The social ecological framework informed the development of the Risk for Violence Screening Tool (RVST) that was used in this project. This tool was used to screen all patients presenting to the ED in order to identify patients who were prone to aggression and violence towards others. The tool used historical facility and literature-based risk factors inclusive of presenting behaviors, social history, acute medical and mental health symptoms and history, and history of violence to flag patients for aggression reduction strategies. The goal was to minimize the exposure of those identified at high risk to environmental factors that could escalate existing conditions to levels of aggression. It also allowed a faster initiation of a rapid response from the ED Behavioral Response Team to mitigate any injury to staff, visitors, or patients. While aggression and

violence should not be accepted as inevitable, it is important to recognize that aggression is rarely purposeless. Although the environment or system is not to blame, it is helpful to understand that aggression does not exist in a vacuum and that there are complicated, intricate interactions at play which contribute to preventable violence (Baby et al., 2018).

The PDSA Model for Improvement, shown in Figure 2, consists of a set of fundamental questions that drive improvement. These questions are: (1) what are we trying to accomplish; (2) how will we know that a change is an improvement; and (3) what change can we make that will result in improvement?

**Figure 2**

*PDSA Model for Quality Improvement*



PDSA is an acronym of the four process improvement steps including Plan, Do, Study, Act. The first step is to plan the test which includes the who, where, when, what and how of the test, including the collection of information during the test. The second step is to run the test or implement the action and be ready to learn from the unexpected results of the test, as well as the planned ones. The third step is to review and summarize what was learned from the test or action, and to compare the results with the prediction. The fourth step is to decide what action is warranted based on what was learned. The fourth step may be to implement the change, to refine the change and tests again, or even to abandon the test and look for others (Langley, 2014). Knowledge is built by a data-driven approach and convergent process of developing a theory, making predictions based on that theory, testing the predictions with data, improving the theory based on the results, making predictions based on the revised theory, and continued iterative reviews. When designing the small tests of change, the planned tests should support the consecutive nature of building knowledge (Provost & Murray, 2011).

The planning stage for this project included collection of data about patient-to-nurse assaults from the incident reporting system to establish baseline and historical information. It also included conducting a literature review, reviewing assaultive incidents, and identifying risk factors at the organization and in the literature.

The doing stage for this project involved creating a RVST to be used upon arrival at triage or at any stage in the patient's visit where risks were identified and adding the screening tool to the EMR. Using the EMR allows for ease of documentation and communication of risk to all team members via a warning flag on the electronic board, so that all staff interacting with patients would use strategies to maintain the safety of patient and staff.

The study stage for this project included analyzing the results of the trial, evaluating compliance with the use of the screening tool, accuracy of use, and compliance with standard and safety measures to prevent violence. Data collection on number of physical and verbal assaults and behavioral events was assessed to determine whether there has been a decrease.

The act stage for this project involved analyzing what elements of the process needed to be revised or identifying additional actions that needed to be taken to improve outcomes. Data were analyzed through chart reviews, staff and patient interviews, and analysis of situational events surrounding the assaults to determine whether additional actions needed to be implemented to enhance the effect of the screening tool or strategies to reduce staff assaults. Repeated cycles were conducted as data was analyzed monthly.

## **Review of Literature**

A review of the literature was conducted in preparation for the development of this quality improvement project utilizing the following databases: PubMed, CINAHL, ProQuest, Wiley Online Library, OVID, Elsevier, and EBSCO. Search terms included: “workplace violence (WPV),” “healthcare worker (HCW) assault,” “violence, aggression,” “emergency department,” “workplace violence prevention,” “risk for violence screening tools,” “risk for violence assessment tools,” “socioecological model,” and “perpetrator.” Reference lists of retrieved studies were also searched to identify pertinent publications. Secondary searches with unique terminology found in these publications were conducted to identify additional publications. In addition, a search was conducted for articles by expert authors in the field of WPV in ED settings. A table of evidence synthesis was created categorizing studies under the following subtopics: workplace violence, precedents and antecedents of violence, perpetrator/patient characteristics risk factors, HCW risk factors, organizational/environmental risk factors, risk for violence screening tools and prevention strategies for workplace violence.

### **Workplace Violence**

Workplace violence (WPV) from patients and visitors is a problem affecting every occupation in the health and social service areas, especially the ED. The World Health Organization defines WPV as “incidents where staff are abused, threatened or assaulted in circumstances related to their work, including commuting to and from work, involving an explicit or implicit challenge to their safety, well-being or health” (WHO, 2020). McPhaul et al. (2008) describe Type II workplace violence as “violence toward employees perpetrated by a client or customer” who has a legitimate relationship with the organization and becomes violent while being served by the organization. In a meta-analysis using 283 epidemiologic

observational studies, Liu et al. (2017) determined that Type II WPV by patients or visitors towards HCWs is elevated globally, with disparities in regions and practice settings, particularly in the ED, mental health, and prehospital care settings. Studies show that a range of 52% to 92% of HCWs report experience with WPV in their work settings and the negative effects on them personally as well as the poor patient care outcomes. Quantitative, experimental studies are rare in the examination of this WPV against HCW problem. Piloting a program to reduce violence in half of patients seen in the ED would leave the HCW group without the intervention at risk for more violence if the hypothesis was supported by the study, creating an ethical dilemma for the non-intervention group. Therefore, since there are more qualitative, retrospective reviews and program analysis in this area, it is more difficult to determine which prevention strategies would work best in a variety of hospital EDs with different configurations of patients, workers, workplaces, communities, health systems of care, and supervisorial and environmental structures.

### **Precipitating Factors for Violence in EDs: Precedents and Antecedents of Violence**

Risk factors for WPV in EDs include overcrowded waiting areas, working more remotely from coworkers, working in a high crime area (McPhaul et al., 2008), hours of high ED occupancy (Medley et al., 2011), evening shift hours, transporting patients, poor environmental space design, access to weapons, patients with a history of psychosis, involuntary hold, aggression, or evaluation for danger to others (Claudius et al., 2017) and working with volatile patients. Pich et al. (2017) found predictors of violence to be alcohol intoxication, behavioral health issues, substance abuse, and history of violence; triage and ED areas of high stimulation and long wait times. According to the ecological occupational health model of workplace violence, risk factors external to the individual patient can be categorized as worker, workplace,

and community/environmental factors (McPhaul et al., 2008). Recognizing essential themes and sub-themes of patient violence such as transitions of care, physical transfers, restraints, pain/discomfort, and demanding to leave (Arnetz et al., 2015) can help inform HCW to recognize these risk factors and mitigate violence. Examining the risks factors contributing to HCV through the prism of the SEM provides a construct with which to analyze the precedents and antecedents of WPV to design a workplace prevention strategy that works for the specific institution.

### **Perpetrator/Patient Characteristic Risk Factors**

Perpetrator risk factors identified throughout the literature include static indicators of a history of psychosis, involuntary hold for danger to others, aggression, history of violence (Claudius et al., 2017; Pompei et al., 2013) and dynamic indicators of alcohol intoxication, substance abuse, cognitive impairment, dementia, and request for pain medication prescription (Arnetz et al., 2015; Calow et al., 2016; Claudius et al., 2017; d'Etorre et al., 2018; Gillespie et al., 2017; Luck et al., 2007; Pich et al., 2017). Behavioral risk factors include anxiety, mumbling, staring, pacing, aggressive statements, rapid speech, verbal escalation, possession of weapons (d'Etorre et al., 2018; Luck et al., 2007; Pich et al., 2017) and anger, fear, frustration, and confrontation (Calow et al, 2016; Chapman et al., 2009;). Perpetrators of physical violence were found to be more often male (Gillespie et al., 2010), but there was a variety of findings on age. Some found most violence in ages 30s and 40s (Claudius et al., 2017; Pich et al., 2017; Pompei et al., 2013), while others found a higher range from ages 39 to 65 (Chapman et al., 2009; Gillespie et al., 2010). Patient and visitor difficulty dealing with crisis situations is a perpetrator risk for violence, including disagreements with the medical plan, perceptions that a HCW is rude or uncaring, grief over the death of a loved one, and lack of control over a

healthcare outcome (Gates et al., 2011; Gillespie et al., 2010). Other demographics such as race, ethnicity, marital status, or religious preference are rarely included in the WPV literature.

### **Healthcare Worker Risk Factors**

Nursing is a high-risk occupation with registered nurses and nursing attendants experiencing the highest number of violent physical and verbal workplace events (Gillespie et al., 2017; Pompei et al., 2013;). This is attributed to the close proximity and longer care giving times provided to patients, increasing exposure to the potential for violence. Several studies found that nurses with less than five years-experience, who are female, white, and younger than 30 years of age (Edward et al., 2016; Pompei et al., 2013) were more at risk for WPV, while others found that more men are victimized than women (Campbell, et al., 2015; Gacki-Smith et al., 2009). In addition, a meta-analysis looking at global observational studies found that being a younger HCW working longer hours and doing shift work was associated with a higher risk for WPV (Liu et al., 2019). Kowalenko et al., (2013) reported that HCWs with a graduate education were less likely than those with a two- or four-year degree to be physically assaulted. Chapman et al. (2009) found that staff inexperience, limited staff knowledge and skill level, and inappropriate communication styles were associated with patient and visitor verbal and physical assaults (Chapman et al., 2009; Hahn et al., 2013; Ramacciati et al., 2019). HCWs who use authoritarian communication, have poor technical skills, lack ability to demonstrate caring, reveal anxiety and fear can experience increased aggression and violence from patients (Calow, et al., 2016; Chapman, et al., 2009;). Studies showed mixed results in the effectiveness of physical crisis intervention training (Gillespie, et al., 2014; Hahn, et al., 2013) on HCW management of aggressive behavior and assault prevention.

## **Environmental/Organizational Risk Factors**

HCWs are exposed to external environmental and organizational factors that increase their risk for verbal and physical violence. Injury epidemiologists promote risk assessment and environmental design as a strategy to reduce workplace injuries (McPhaul, et al., 2008). Environmental factors included nurses working in a hospital-based ED during the evening shift and in ED settings where patients and staff are in close proximity (Gillespie, et al., 2017). Situational risk factors were found to include higher expectations of quality of care, staffing shortages, longer pain management wait times and perceptions of staff rudeness and disrespect (Chapman, et al., 2009; Thompson, et al., 2019). A study by Vrablik et al. (2019) found that inadequate healthcare worker/patient relationships, inferior perceived safety climates, elevated anxiety levels, high job demands, and long waiting times were determinants of violence (Vrablik et al., 2019). Another study found a correlation between occupancy rates or ED crowding and violent events (Medley et al., 2011; Pich, et al., 2017). The ED was found to have more non-physical assaults and psychiatry to have more physical assaults (Liu, et al., 2019). Studies assessing the effectiveness of programs to reduce incidence of WPV found that environmental design including security, presence of security cameras and weapon screening decreased the rate of violence (Gillespie, et al., 2010; Gillespie, et al., 2014). Finally, organizational factors such as lack of leadership commitment, absence of policies and procedures supporting staff or lack of a zero tolerance for violence policy related to higher levels of WPV (Gillespie, et al., 2014).

## **Risk for Violence Screening Tools**

Early identification of patients at risk for violence in the healthcare setting can allow mitigating systems to be put in place to reduce the antecedents and precedents of violence (Calow et al., 2016; Claudius, et al., 2017, Hall, 2016). Many of the studies conducted on risk

for violence screening tools were conducted in the inpatient psychiatric settings. Screening tools such as the Broset Violence Checklist (BVC) (Rechenmacher et al., 2014) and the Historical-Clinical Risk Management-20 (HCR-20) are well established tools that are effective in the psychiatric setting; however, the BVC does not include static indicators and the HCR-20 is lengthy. A novel study by Partridge and Affleck (2018) had security guards screen for the behaviors with the BVC tool to identify patients upon arrival to the ED who had a potential for violence during their visit (Partridge & Affleck, 2018). Although the findings were not statistically significant, elements of the tool were shown to have clinical significance if the security guard doing the screening had a way of communicating risks to the clinical staff. The STAMP (Staring, Tone, Agitation, Mumbling, Pacing) Screening Tool was studied in a mixed method case study design but was limited in the single case study that could not be generalized to all EDs (Luck et al., 2007). Additional risk-for-violence screening tools identified for predicting violence in the ED were the M55 (Ideker et al., 2011), the ABRAT (Kim et al., 2019) and the STAMP/EDAR (Chapman et al., 2009), although they all need additional evaluation to establish their accuracy and validity (Ghosh et al., 2019). Calow et al., (2017) compared ED tools STAMP (Luck et al., 2007), ABC (Sands, 2007) and the Five Attributes of Caring (Luck et al., 2009) to avert violence but found that there had been little testing of the tools in other settings. These studies and literature reviews of the risk-for-violence screening tools for the ED did not result in a strong recommendation for any one of these tools. There are common themes and sub-themes; however, there is no one screening tool that has gone through rigorous testing or that works consistently in all ED settings.

## **Prevention Strategies for Workplace Violence**

There is a consensus in the literature that identifying and mitigating the precursors to violence, predicting an aggressive or violent event early in the escalation process, and implementing practiced approaches to deescalate the situation will positively impact the outcome of potentially hazardous incidents (Chapman et al., 2009). WPV reduction strategies include training courses on de-escalation techniques, building therapeutic patient-to-HCW relationships, improved communication skills, increased reporting of WPV, improved labor relations through management commitment and employee engagement in prevention programs (Vrablik et al., 2019), in addition to environmental improvements, focused policies and procedures, and education and training (Gillespie et al., 2014). Prevention strategies require simulation drills, a team approach to managing aggressive, violent behavior; and actions focused on overall responses to aggression and violence, targeted at the pre-event, event, and post-event phases of the violent behavior (Richardson et al., 2019).

A qualitative review of the themes involved with HCW assault showed that patient behavior, patient care events and situational events were catalysts to violence (Arnetz et al., 2017). Sub-themes provide guideposts which could alert staff to use caution in the following circumstances: when a patient is confused, demanding to leave the ED before they are discharged; working in close proximity with the patient when starting IVs or administering injections, or physical procedures causing pain or discomfort; physically assisting patients to transfer; restraining, and helping a patient back to bed or to the bathroom. In the ED setting, these are sub-themes which occur frequently and increase the opportunity for HCW injury.

A key strategy for violence reduction is instruments to measure and report occurrences of HCW violence. Accurate information on the prevalence and risk factors contributing to patient

aggression and violence is needed to develop effective and efficient interventions. The National Institute of Occupational Safety and Health (NIOSH) and the Occupational Safety and Health Administration (OSHA) have written clear guidelines for workplace violence prevention and response protocols to be used in healthcare organizations. Key prevention tactics include an integrated organizational approach incorporating WPV monitoring tools, focused training for staff, simulated drills, and a predetermined response standard (Campbell et al., 2015; Okundolor et al., 2020). A reporting instrument requires a structure that allows for a standardized method of entering information regarding verbal and physical assaults that will allow for identification of the psychometrics at play and the specific risks at each organization. Pompei et al. (2013) found that more detailed surveillance methods that capture the circumstances surrounding the workplace violent events are required to develop prevention strategies specific to the risk factors that are identified.

### **Framing the Violence Prevention Strategy**

Some researchers have investigated WPV from similar public health frameworks, including the Haddon Matrix Model looking at the vector and the host (Gates et al., 2011; Richardson et al., 2019) and the SEM (Gillespie et al., 2014) which looks at the system elements surrounding the violence. Ramacciati et al., (2017) provide an overview of available theories and frameworks of violence toward emergency nurses to assist in developing appropriate interventions and corrective measures. In an article highlighting WPV, the authors made recommendations for protecting HCWs by categorizing the discussion in the framework of the SEM – individual-level, relationship-level, workplace-level and societal-level recommendations (Gillespie et al., 2015). Arnetz et al. (2015) recommend adaptation of the SEM advocated by the CDC as a framework for societal prevention of assaults. Looking at each of these elements,

frameworks, and sub-themes as they exist within the system as a whole can be helpful in planning violence prevention efforts in the healthcare setting and were used in this quality improvement project.

## **Methods**

This quality improvement project implemented and evaluated the effectiveness of a risk for violence triage screening tool in an urban, academic trauma center emergency department (ED). The goal of the project was to reduce physical and verbal staff assaults through an alert system and focused assault prevention strategies.

### **Design**

This was a quality improvement project with pre- and post-comparison of data on physical assaults and behavioral events before and after the implementation of a risk-for-violence triage screening tool in the adult ED.

### **Setting**

The quality improvement project took place at a large, urban, academic trauma medical center's ED in Los Angeles, comprised of adult, pediatric, and psychiatric designated areas in the ED. An average of 480 patients present daily for emergency care employing ambulance, car, bus, police, and walking. After a brief security weapons screening upon arrival, patients are met at the ambulance and ambulatory entrances by a registered nurse and a registration clerk, are registered and briefly triaged within minutes of arrival. During this quick triage, the registered nurse takes an oxygen saturation reading, heart rate, respiratory rate, and temperature. She/he then determines the patient's chief complaint, acuity, and risk factors of infectious disease, suicidality, and falls. The medical and psychiatric acuity determines the immediacy and location of care, enhanced by risk factors for infectious disease, suicidality, and falls. An Emergency Flow Coordinator (EFC) regulates the availability of rooms for these arriving patients and takes measures to ensure the availability of necessary capacity in the 100 bed ED by working with charge nurses in each of the seven care areas to expedite treatment and evaluation, discharge,

admission, or transfer. A Rapid Medical Evaluation (RMED) and Treatment Area sees patients who do not require a treatment bay and can be discharged home from the RMED section and do not occupy one of the 100 beds. Los Angeles Sheriff Department (LASD) deputies patrol the campus and are available to intervene when a crime has or is likely to occur.

### **Sample**

The inclusion criteria for the project included all patients who presented to the adult ED during the period of time immediately before and after implementation of the risk-for-violence triage screening tool. Exclusion criteria for the project included pediatric and adolescent patients seen in the Pediatric ED and psychiatric patients presenting on 5150 psychiatric holds directly to the Psych ED brought by police or ambulance transferred from another ED.

### **Ethical Considerations**

An Institutional Review Board (IRB) determination was obtained from the Los Angeles Medical Center's IRB as well as from California State University Long Beach (CSULB). The work duties of the clinical lead on this quality improvement project included chart review and investigation into assaultive events that occurred in the ED.

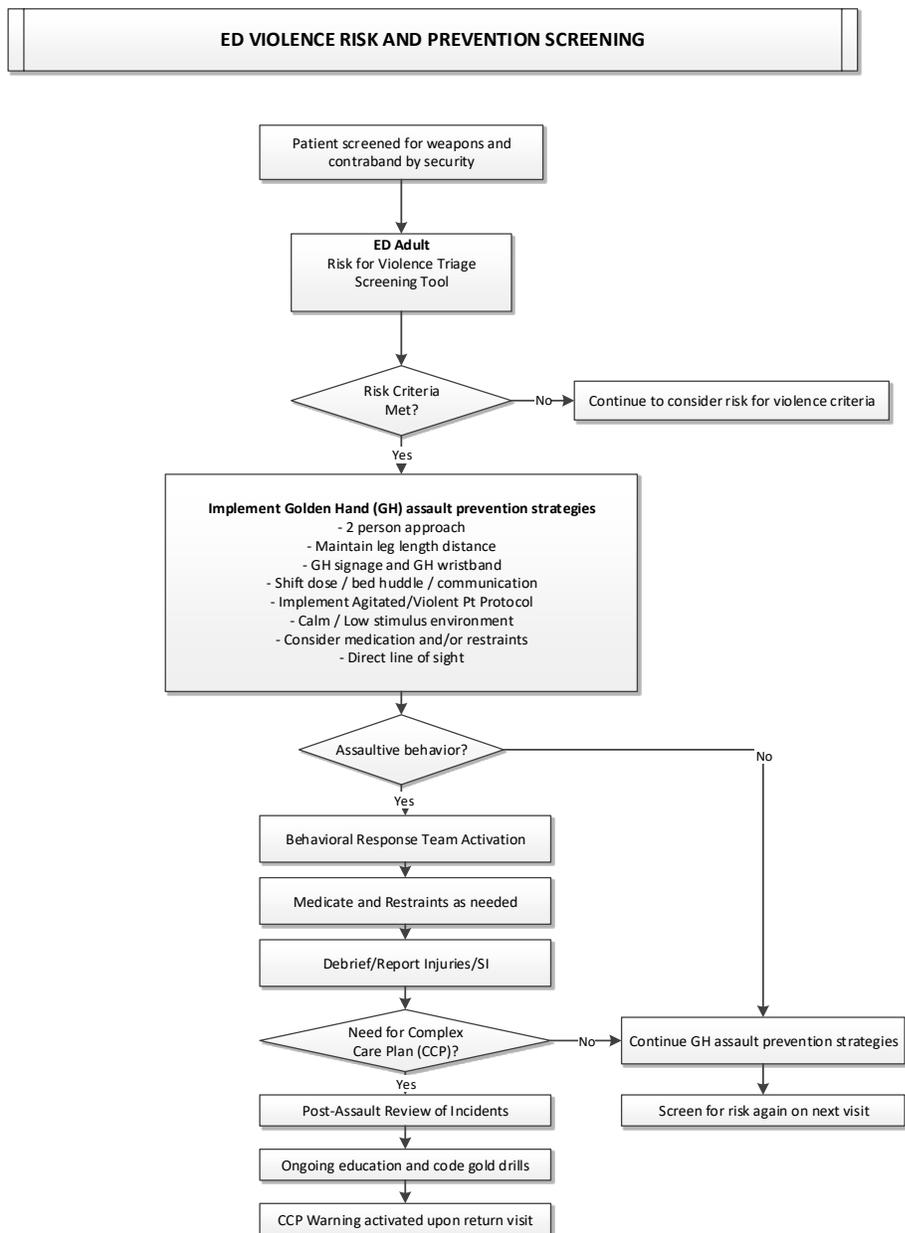
### **Implementation of the Quality Improvement Program**

The request for the addition of a risk-for-violence screening tool to the EMR was submitted to and approved by the Department of Emergency Effective Practice Committee (DEEP-C). The committee was aware of the concern over the increased number of assaults against staff in all the EDs throughout the county health system and the need to be able to provide alerts in the system should there be an assault at one organization. A pilot administration of the screening tool was done on paper with 500 patients presenting to the ED in one 24-hour period. The pilot showed that it was possible to identify patients at risk for violence

upon arrival and implement assault reduction strategies to prevent assaults. The addition of the Risk for Violence Screening Tool (RVST) to the shared EMR was critical as use of a paper tool was not sustainable and there was no way to easily communicate the identified risk to all staff. Collecting data in the EMR enabled the evaluation of whether this screening tool could be consistently applied and demonstrate effectiveness in identifying at risk patients throughout the Medical Center's ED, and eventually in the other EDs within the health system. Screening of patients for risk-for-violence, if positive, triggered a Golden Hand (GH) symbol on the patient care track and communicated the need to interact with the patient safely and effectively with specific aggression reduction and agitation prevention strategies. A GH warning sign was placed at the patient's exam room to alert those approaching the patient of the need to practice GH strategies to maintain safety. Staff alerted to these patients could always maintain a safe distance and obtain assistance from another caregiver when approaching the patient to provide direct patient care. Workflow included steps one through six, demonstrated in the Flowchart of ED Violence Risk and Prevention in Figure 3.

**Figure 3**

*Flowchart of ED Violence Risk and Prevention Screening*



Revised 2/10/2020

1. Select one hard risk factor for potential violence (5150 for danger to others/suicidal with complaints requiring medical clearance, history of violence, threatening violence) and/or two soft risk factors (cognitive impairment, high level pain score, bizarre behavior/internal stimuli/hallucinating, substance use/abuse or under influence).
2. Trigger Golden Hand risk warning flag automatically with the selection of one hard or two soft risk factors on the patient care track to alert staff to risk for violence.
3. Place Golden Hand (GH) signage at exam/treatment room and GH wristband to remind staff to implement Aggressive/Violent Patient Standard: keep the patient's leg length distance away from the patient at all times, never turn their back, obtain help from a second person when approaching to provide direct patient care, keep in a single room free of potentially harmful objects, provide a calm, low stimulus environment and minimize disruptions to care.
4. Assign care companion to monitor patient, provide early intervention to mitigate escalation, notify ED Behavior Response Team, and prevent injury whenever possible.
5. Escalate treatment to reduce pain levels and provide the treatment needed to calm and care for the patient quickly and communicate needs efficiently.
6. Design a Complex Care Plan (CCP) for aggressively violent patients with a known history of assault with staff injury, or mitigation requiring advanced interventions by the ED Behavioral Response Team. This CCP provides advanced interventions and behavioral modalities due to the high level of risk for violence and provides an alert at every new patient visit so alert staff to the patient's history. This alert provides the basis for Golden Hand interventions at each ED visit, regardless of the patient's behavioral presentation.

Case reviews and analysis were conducted on each assault. Previous violence prevention strategies were maintained to ensure a new culture was created to allow for the GH practice to continue. These strategies included weapon screening by security, sheriff deputies making rounds on site, Zero Tolerance for Violence Policy, mandatory Non-Violence Physical Crisis Intervention (NVPCI) training for nursing and physician staff, ED Behavioral Response Team (EDBRT) comprised of LVN, Nursing Attendant and security staff, Assaultive Patient Protocol, Code Gold - EDBRT simulation drills, and assigned sitters for 5150 patients.

Each patient presenting to the ED was screened for risk factors of violence at each visit, even if there was one or more visit per day. Once a patient had demonstrated repeated or ongoing threatening behavior, or extremely violent behavior, the CCP automatically provided the warning of the history of violence with registration, and the RVST was used by the triage nurse to flag the patient with a GH symbol due to their known history of repeated violence, ongoing threatening behavior, or extremely violent behavior. Additional warnings provided CCP guidance to all providers who opened the patient's medical record as they were involved with the patient's care. It was hypothesized that with the early identification of risk for violence and implementation of strategies to reduce the risk, there would be fewer assaults or repeated aggressive or/and violent behavior requiring a CCP. By helping patients at risk for violence to successfully navigate their ED visit, fewer patients would act out in a way that would flag them as someone who had committed an assault on previous visits. Also, through a review of acts of aggression, assaults, and behavioral events, more information was obtained to inform staff of environmental, situational, and interpersonal triggers that increased the likelihood of violence beyond what was discovered from previous research conducted on ED assaults at this organization.

The Registered Nurses (RNs) were educated through a presentation about how to use the screening tool to assess for risk for violence during triage and patient assessments during a patient's visit. Nurses were also educated on how to initiate and implement the assaultive patient protocol to prevent injury. In addition, random chart reviews were done in real time by the quality improvement team members to verify whether the triage RNs were using the RVST for each patient arriving at the ED and whether the nurse was using the tool accurately. Furthermore, reminders were issued to the triage RNs who did not complete the screening tool and a weekly compliance report was given to the triage nurse manager to promote ongoing coaching of triage RNs.

As early data about physical and verbal assaults, and behavioral events were analyzed, it was identified that staff were interpreting the behaviors in the tool literally and were not comfortable identifying patients who are assessed as high risk for assaultive behavior without a check box specific to a behavior. Additional behavioral descriptors were added to the RVST to assist with the identification of potentially assaultive patients. It was at this time that the RVST was rolled out to the other hospitals in the health system. Another educational class was scheduled midway through the quality improvement project to provide training on these additional risk factors and to use recent examples of missed risk for violence factors upon arrival and subsequent incidents of violence. The class also focused on assault prevention strategies and continued monitoring of patients for behavioral risk factors that could identify their risk at any point in their ED visit.

### **Data Collection**

A report from the organizational Safety Intelligence (SI) reporting system was run to determine the number of behavioral events and physical assaults to nurses or other healthcare

workers during the eight months preceding the implementation of the screening tool. This report helped to establish a baseline indicator, support the need to conduct this quality improvement project, and to implement the strategies that were expected to decrease the number of physical assaults and behavioral events. Reports were analyzed with each process improvement action taken to identify the impact it contributed to change.

To understand the contextual variables that may trigger assaults, a retrospective chart review of the Electronic Medical Record (EMR) and staff interviews were conducted to assess the precursors, patient characteristics and demographics, staff perspective, and situational factors surrounding each physical assault or behavioral event. The hospital crowding report was also evaluated to determine the environment and ED capacity at the time of the physical assault or behavioral event. Scheduling software was used to analyze staffing patterns prior to and at the time of the event.

The patient demographic data collected included age, race, gender, and homelessness. Clinical data included a history of violence, substance abuse or under influence, psychiatric hold or diagnoses, cognitive impairment, pain score identified by the patient, bizarre behavior, and verbal aggression. Other data collected included the day and time of the event, crowded level of ED, staffing levels, the role, gender, age, and experience level of person assaulted. Each event was evaluated for other triggers or risk factors that may have contributed to and/or provided a warning for aggression and violence.

The data review and collection continued for 17 months after the implementation of the RVST at triage. The quality improvement team review of the compliance with the RVST at triage was tabulated weekly and given to the nurse manager for coaching of the triage team. Immediate coaching was provided for triage nurses who were not compliant with the screening

process. Individuals who consistently failed to complete the screening were coached individually, and barriers to adherence were investigated and given to the quality improvement team.

### **Data Analysis**

The use of the QI Macros software was used to analyze and trend the collected data. Run charts and control charts were used to show the monthly number of physical assaults, behavioral events, and compliance and accuracy of risk for violence screening. Pareto charts were used to frame the situational themes and pain scores of patients involved in physical assaults and behavioral events, and a table was created to display the demographic characteristics (age, race and homelessness status) of patients involved in assaults or behavioral events. To establish the baseline number and types of assaults and behavioral events, inclusive of demographic data, a total of 37 cases were reviewed in the 8 months preceding the implementation of the QI project.

The baseline data from 37 patients who physically assaulted nurses or healthcare workers or had behavioral events in the time of January through August 2019, were compared to the data collected for the 17 months that followed the implementation of the risk for violence triage screening tool upon arrival to the ED (September 2019 through January 2021). More specifically, the incidence and frequency of physical assaults were compared between baseline pre- and post-implementation. Excluded from the analysis were patients younger than 18 years old and individuals with a primary psychiatric diagnosis who were treated in the Psychiatric ED.

Measures to show the successful implementation of the risk-for-violence tool were the random checks for completion of the risk for violence tool and the accuracy of the screening with the available data. Run charts show the daily percentage of compliance with completion of the risk for violence screening tool and the accuracy of identification of potentially violent patients

upon arrival to the ED. Additional measures were used to look at nurse and healthcare worker compliance with the focused strategies and protocols for preventing aggression and assaults from patients who were identified as having a risk for violence. The risk for violence screening tool was further evaluated in cases where the tool was used appropriately but failed to identify the potential for violent behaviors.

Use of descriptive statistics were employed to describe patient demographics, patient and staff characteristics, the patient stated reason for being assaultive, if stated in the incident report or the medical record, the situation occurring at the time of the assault, the occupancy level of the ED, staffing levels, and the role, age, gender, and experience level of the HCW. Statistical analysis was conducted to determine if differences in assault frequency existed based on healthcare worker roles, time of day, gender, age, race, situational events, pain level, ED crowding status and staffing levels. Overall, the analysis focused on determining if a statistically significant decrease in physical assaults rate and a statistically significant increase in compliance with the risk for violence screening tool occurred at the completion of the data collection as compared to baseline prior to implementation of the screening tool.

## Results

### Sample Demographics

There was a total of 112 patients involved in assaultive or behavioral events between January 2019, and December 2020. The majority (72%, n=80) of aggressors were men, 28% (n=30) were female, and 1% (n=1) transgender, with a racial distribution of 22% (N=25) White, 25% (n=28) Latino, 42% (n=47) African American, and 11% (n=12) other/unknown. Ages of assaultive patients were categorized into the following groups: 20-39 (28%, n=31); 40-59 (47%, n=53); and 60-79 (25%, n=28). Additional data showed that 58% (n=65) of the 112 patients involved in assaultive or behavioral events were homeless and 48% (n=54) had a history of incarceration. Table 1 shows the detailed characteristics of patients involved in assaults/behavioral events.

**Table 1**

*Demographic Characteristics of Patients involved in Assaultive or Behavioral Events: January 2019- December 2020*

	Physical Assaults/Behavioral Events (n=112)			
	Total (Percentage)	Baseline Number (Percentage)	Post- Implementation Number (Percentage)	Post- Implementation Pandemic Months Number (Percentage)
<b>Gender</b>				
Male	80 (72%)	25 (68%)	55 (73%)	27 (73%)
Female	31 (27%)	11 (31%)	20 (27%)	10 (27%)
Transgender	1 (1%)	1 (1%)	0 (0%)	0 (0%)
<b>Race/Ethnicity</b>				
White	25 (22%)	9 (24%)	16 (21%)	8 (22%)
Latino	28 (25%)	9 (24%)	19 (25%)	9 (24%)
Black	47 (42%)	15 (41%)	32 (43%)	16 (43%)
Other/Unknown	12 (11%)	4 (11%)	8 (11%)	4 (11%)

Age				
20-39	31 (28%)	5 (24%)	26 (35%)	17 (46%)
40-59	53 (47%)	21 (57%)	32 (43%)	16 (43%)
60-79	28 (25%)	11 (30%)	17 (23%)	4 (11%)
Homeless				
Yes	65 (58%)	25 (68%)	40 (53%)	22 (59%)
No	23 (21%)	7 (19%)	16 (21%)	9 (24%)
Unknown	24 (21%)	5 (14%)	19 (25%)	6 (16%)
H/O Incarceration				
Yes	54 (48%)	20 (54%)	34 (45%)	18 (49%)
No	34 (31%)	12 (32%)	22 (29%)	12 (32%)
Unknown	24 (21%)	5 (14%)	19 (25%)	7 (19%)

*Note:* Table comparing demographic characteristics of 112 patients involved in assaultive or behavioral events during periods pre- and post-implementation, baseline pre-implementation, post-implementation period, and the 9 months of the COVID-19 pandemic post-implementation, April through December 2020.

There was a total of 52 staff members who were physically assaulted between January 2019, and January 2021. The overwhelming majority were females (n=43, 83%) and 17% (n=9) were male. The majority (n=34, 67%) of the staff members who were physically assaulted had less than two years' work experience in the ED at this facility; n=10 (20%) had two to five years' work experience, n=4 (8%) had six to ten years' work experience, and n=4 (8%) had more than ten years' work experience in the ED at this facility. N=35 (67%) were RNs, n=2 (4%) LVNs, n=2 (4%) Nursing Assistants, n=5 (10%), n= 8 (15%) resident physicians, and n=2 (4%) registration staff. 81% (n=40) of the physical assaults occurred between the hours of 3:00 pm and 3:00 am. Table 2 shows the years of work experience the assaulted staff members had in this facility's ED prior to their physical assault.

**Table 2***Demographic Characteristics of Staff Involved in Assaults: January 2019 - January 2021*

Physical Assaults (n=52)				
	Total (Percentage)	Baseline Number (Percentage)	Post- Implementation Number (Percentage)	Post- Implementation Pandemic Months Number (Percentage)
Years of Work Experience				
< 2 years	34 (67%)	11 (58%)	22 (69%)	8 (57%)
2-5 years	10 (20%)	5 (26%)	5 (16%)	3 (21%)
6-10 years	4 (8%)	1 (5%)	3 (9%)	3 (21%)
>10 years	4 (8%)	2 (11%)	2 (11%)	0 (0%)

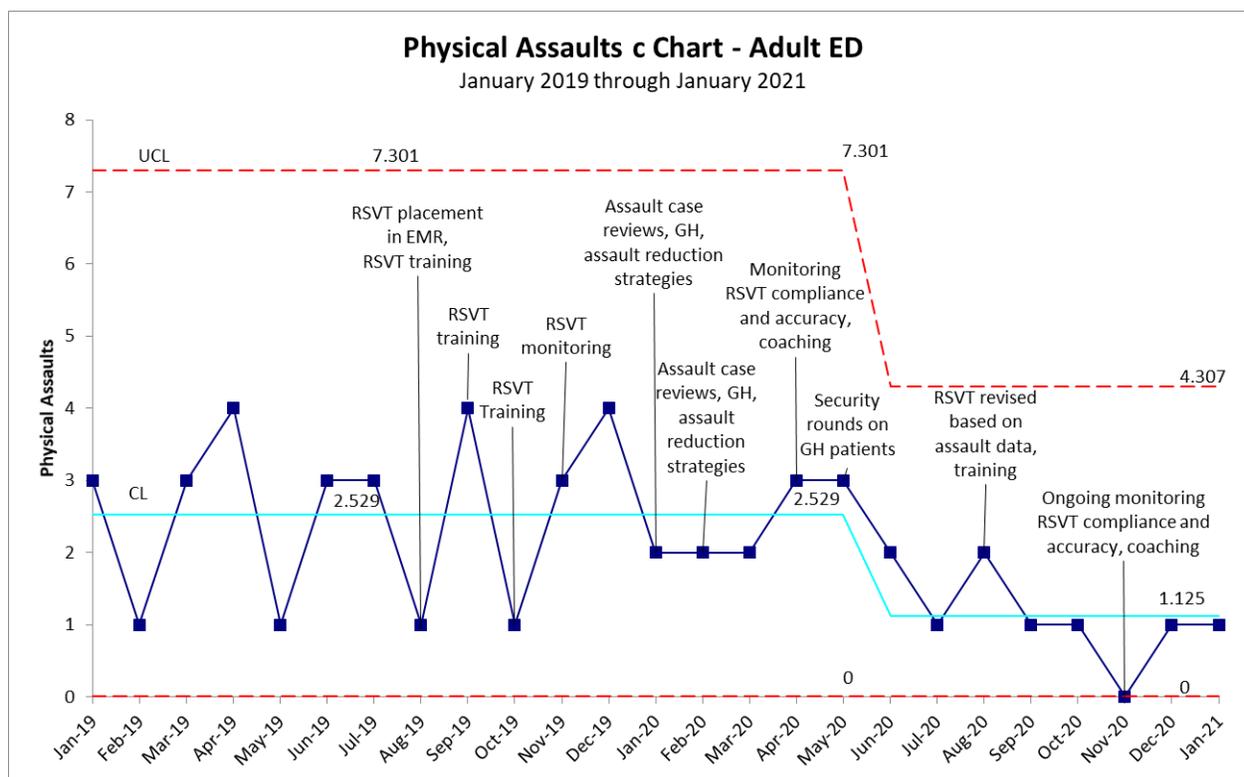
*Note:* Table demonstrating number of assaulted staff by years of work facility at this facility.

### **Physical Assaults**

There was a range of one to four physical assaults per month in the eight months preceding the quality improvement project, January 2019, through August 2019. The average number of assaults per month for this pre-implementation period was 2.529. In the 17 months of the quality improvement project implementation, there was a range of zero to four physical assaults. The average number of assaults per month for this period was 1.125. Additional education was conducted in January and February 2020, resulting in a decrease of physical assaults to two in January through March 2020. During the following months of April and May 2020, the patient to staff physical assaults increased to three per month. With continuing monitoring of compliance and accuracy, coaching nurses, and security staff rounds on GH patients, the physical assaults decreased again to an average of two per month. Since the RSVT was revised in August 2020, the range of physical assaults has been ranging between zero to one in the last five months through January 2021.

**Figure 4**

*Control Physical Assaults c Chart by Month from January 2019 through January 2021, with Interventions*



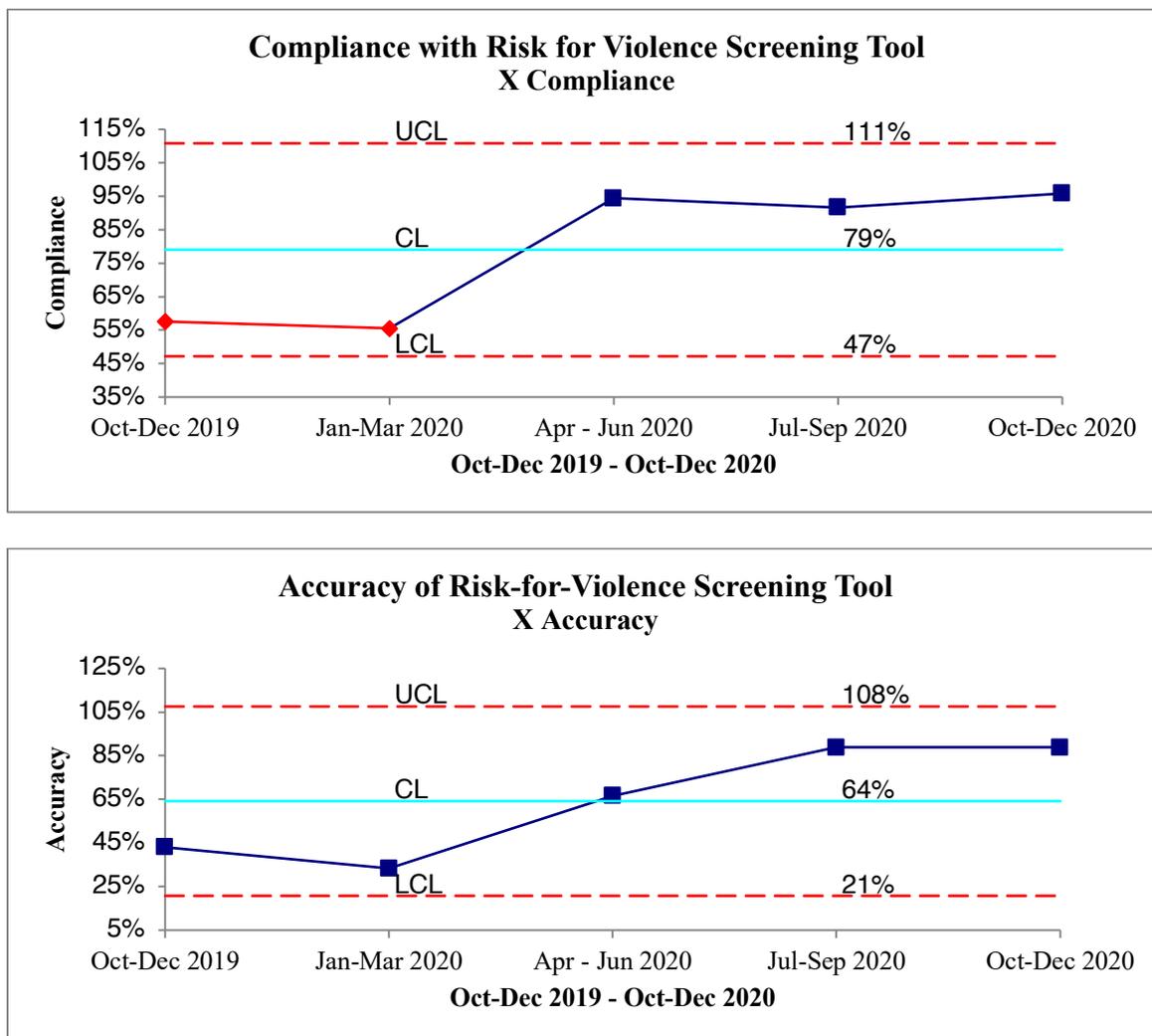
*Note:* c Chart trending of the 52 physical assaults over the eight months pre-implementation of the RVST in the EMR for screening upon arrival, and the 17 months post-implementation of RVST in EMR for screening upon arrival, highlighting the additional interventions..

### Monitoring RSVT Compliance and Accuracy

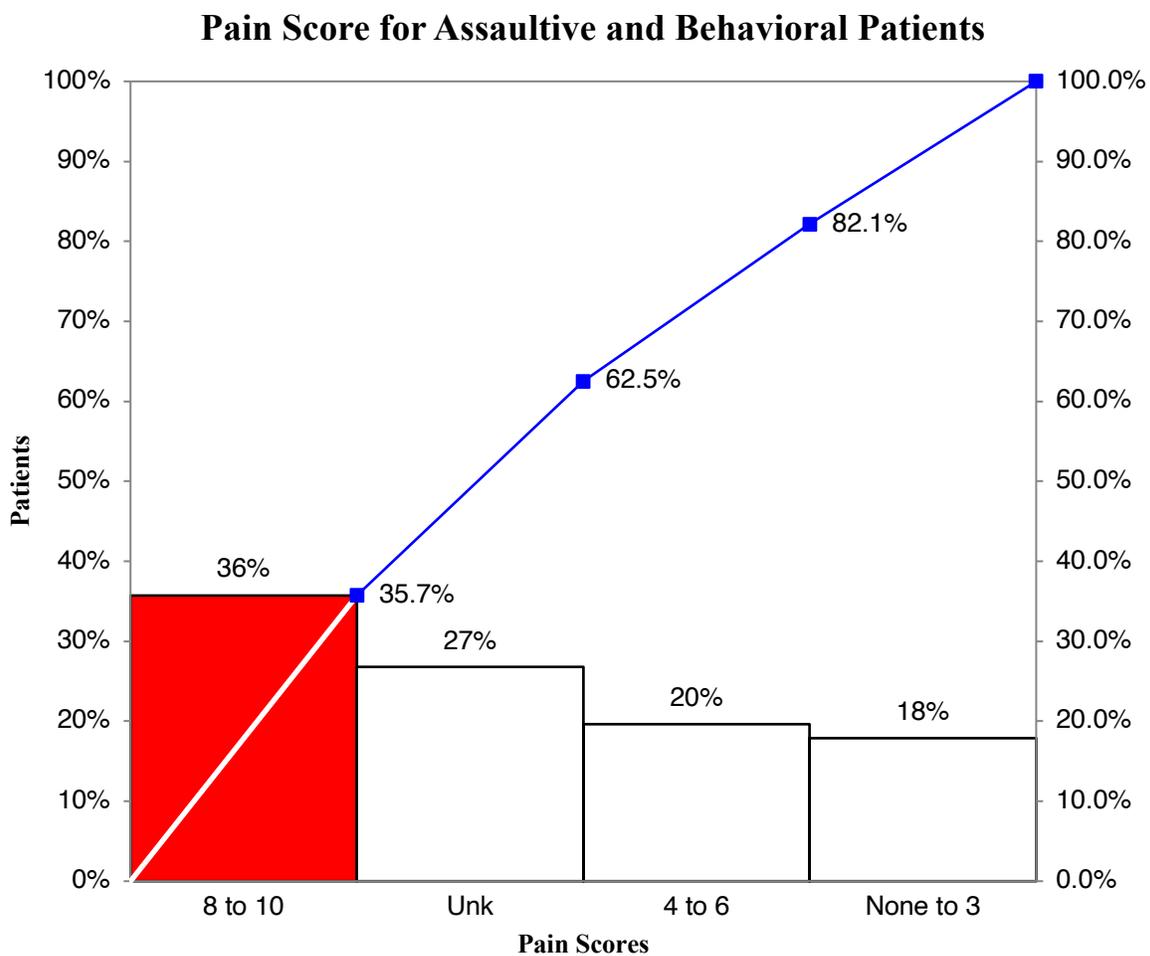
Monitoring of the use of the RSVT and the accuracy of the RN performing the screening was conducted throughout the performance improvement project. The triage RVST compliance and accuracy for patients who were assaultive during their ED visit increased from 33% compliance and 0% accuracy per quarter in October through December 2019 to 94% compliance and 83% accuracy per quarter in October through December 2020. (Figure 5).

**Figure 5**

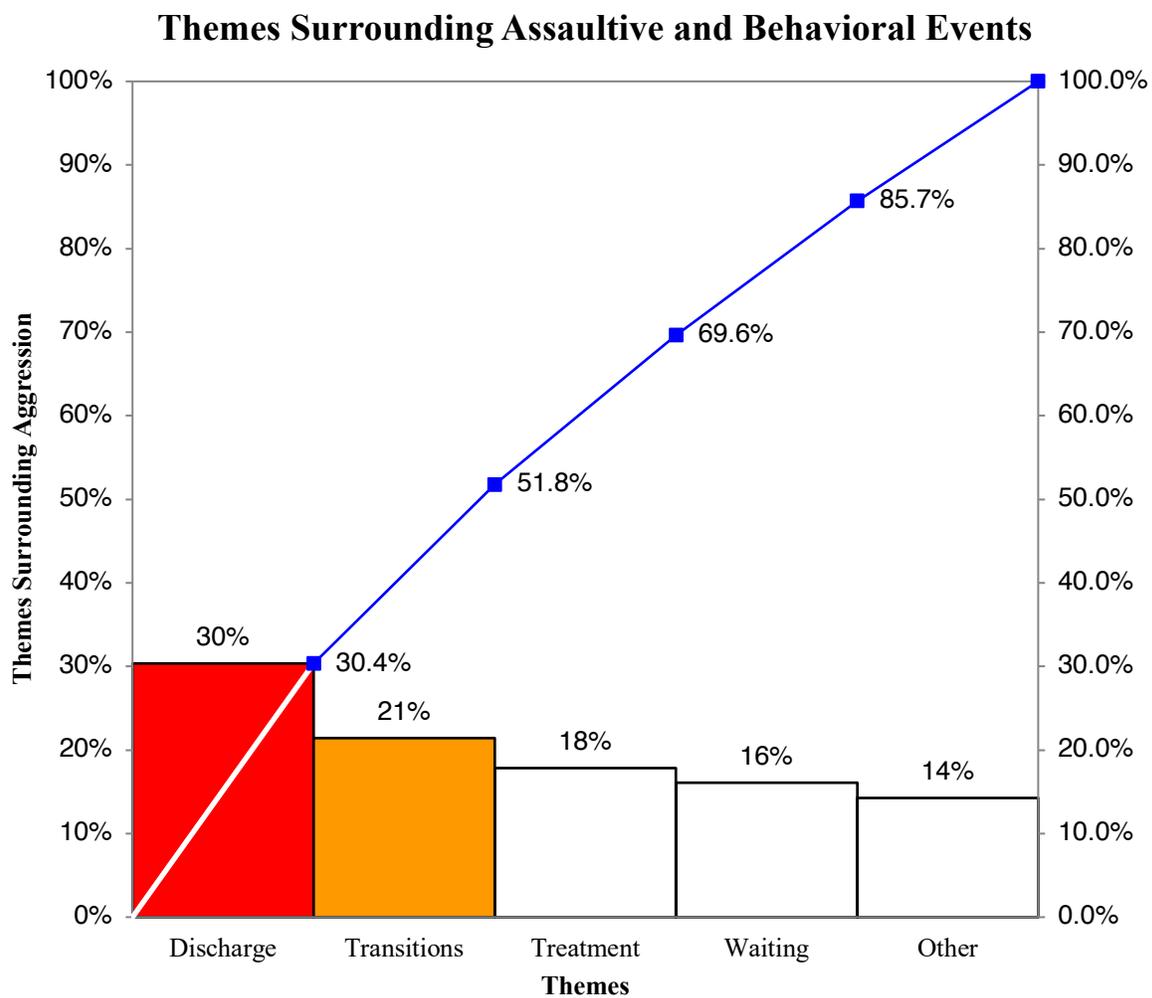
*Staff Compliance with Screening and Accuracy of Risk for Violence Screening for Patients who were Assaultive or had Behavioral Events During their Visit Post-Implementation*



Pain levels of greater than seven occurred in 62% of behavioral adult patients and accounted for 36% of the pain scores for these patients (Figure 6).

**Figure 6***Pain Score for Assaultive and Behavioral Patients*

Situational triggering event themes of discharge (30%), waiting (16%), transition (21%), treatment (18%) and other (14%) emerged from the analysis (Figure 7).

**Figure 7***Themes Surrounding Physical Assaults and Behavioral Events*

## Discussion

The purpose of this quality improvement project was to implement and evaluate the effectiveness of a RVST to reduce staff assaults through an alert system and focused assault prevention strategies. The RVST was used to screen all patients presenting to the ED in order to identify patients who were prone to aggression and violence towards others. The goal was to minimize the exposure of those identified at high risk to environmental and interpersonal factors that could escalate existing conditions to levels of aggression and to flag patients for aggression reduction strategies. It also allowed a faster initiation of a rapid response from the EDBRT to mitigate any injury to staff, visitors, or patients.

Patient-to-staff physical assaults trended down during the 17 months of the project, ending with very low assaults in the last five months from September 2020, through January 2021, with no physical assaults in November 2020. April and May 2020 showed an increase in physical assaults, which was unusual because the volume of patients coming to the ED during the pandemic months of April and May 2020, decreased significantly, as the community feared contracting COVID-19 by coming to the hospital. A review of these assaults revealed associated factors such as a history of homelessness, incarceration, drug dependency and personality disorders with multiple ED visits and history of aggressive behavior, and with patients who interacted with nurses and providers who had less than two years of experience (n=34, 67%). The catalyst for the violence in most of these cases was the patient not wanting to be discharged.

Another point of interest is the change in the number of assaultive behaviors among patients in different age groups. For example, the number of assaultive or behavioral events decreased in patients in the age group 60 to 79 years during the pandemic and dropped to zero in the last five months of the project. Similarly, the number of patients 40 to 59 years old decreased

from 57% at baseline to 43% during the pandemic months. On the other hand, the number of assaultive patients 20 to 39 years old increased from 24% at baseline to 46% during the pandemic months. Nurse staffing levels and/or overcrowded ED conditions did not appear to impact the number of assaults or behavioral events; however, the experience level of the nurses and providers assaulted was less than two years (n=34, 67%), which is in line with research on this topic (Hahn et al., 2013, Pompei et al., 2013). This increased risk for inexperienced and younger nurses and HCWs, or those with poor interpersonal skills, is supported by research done by Ramacciati (2019), Wasmati (2019) and Kleissl-Muir (2018) in multiple EDs throughout the world.

Pain levels of greater than seven out of a potential score of 10 occurred in 62% of violent behaviors among adult patients (Figure 7). While some studies reference requests for pain prescriptions as a risk factor for violence (Arnetz et al., 2015; Calow et al., 2016; Claudius et al., 2017), the perceived level of pain upon arrival is not included as a risk factor or catalyst for aggression or assaults. Requests for pain medication prescription is generally noticed later in the visit and denial of providing a narcotic pain prescription is the trigger for violence in these studies. Early recognition and acknowledgement of pain may allow for the HCW to be seen in a positive light and allow for alternative treatments for pain so that when narcotics are not prescribed, the lack of interpersonal or microaggression catalysts may allow for a more therapeutic resolution to the denial of pain prescription.

Other situational triggering event themes included discharge (30%), waiting (16%), transition (21%), treatment (18%) and other (14%) emerged from the analysis (Figure 7). These findings are comparable to the catalysts for violence in ED found in studies such as Arnetz et al. (2017) and provide data for future quality improvement focusing on patients presenting with

high levels of pain and situational events that increase the risk for assaultive behavior.

Multiple risk screening tools were evaluated for use but were not found to include all of the risk indicators identified at this facility and in the literature, with both static and dynamic indicators. The purpose of designing a facility specific tool was not to create yet another risk for violence screening tool, but to screen for specific risks identified at this facility in the construct of the socioecological framework, and to communicate that risk to all caregivers who could encounter the patient during their visit. The RSVT was revised in consultation with other health system EDs in the county in August 2020, which helped the triage RNs identify risk-for-violence patients more easily. The RSVT is being used at the other county health system EDs and data is being analyzed to determine impact at their facilities.

Risk-for-violence screening upon arrival, an alert system and assault mitigation strategies provide an opportunity for nurse leaders to promote ED workplace safety. The findings of increased patient to staff assaults by patients with a high pain score, and during situations of discharge, waiting, transition and treatment, provide additional opportunities to teach nurses and HCWs to be alert to these interactions with patients at risk-for-violence, as well as to implement other strategies at these points to further reduce violence. The propensity for older, black males to be assaultive in this inner-city environment (42%), disproportionate to the percentage of black patients treated by the facility (12%), but more in line with the 34% of homeless African Americans in Los Angeles (Homeless in Los Angeles 2019, n.d.), creates another opportunity to design aggression reduction strategies specific to this patient population. Consideration should be given to other socioecological community and environmental factors such as the long history of systemic racism in Los Angeles, disenfranchised patients seeking help in an academic, trauma center ED, staffed primarily by young residents, advanced practice

providers and registered nurses receiving training and work experience.

### **Limitations**

Limitations of this quality improvement project included the lack of consistent reporting of verbal assaults and verbal violence via the reporting system. Although WPV is defined by the hospital system following Occupational Safety and Health Administration (OSHA) criteria as any type of physical or non-physical violence, including physical assault, verbal abuse, bullying, harassment, or intimidation directed towards hospital employees, it was noted that very few incidents of non-physical assault violence were entered into the hospital system. In order to have a larger number of patients to evaluate pre- and post-implementation, behavioral events were analyzed, which included criminal threats, destruction of property, suicidal gestures, and weapon concealment. The large number of HCWs working in this ED required ongoing education and training throughout the project. In addition, the COVID-19 pandemic started six months into the project, and it is unknown how much impact this had on the performance improvement project.

## **Conclusion**

The screening of patients upon arrival for their risk of violence, communication of that risk to all HCWs who encounter the patient, and the use of strategies to prevent aggression and assault in those patients reduced the rate of physical assaults in the ED. The lessons learned in this quality improvement project are applicable to other EDs. Risk-for-violence screening upon arrival, an alert system and assault mitigation strategies provide an opportunity for nurse leaders to promote ED workplace safety. In addition, it is critical for HCWs to use a RVST that is based upon a socioecological framework reflective of their patient population and designed specifically to screen for the types of violent events typically identified in their ED setting.

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