Standard Work to Assist Emergency Department Nurses in managing and preventing workplace violence

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Abstract

Background/Purpose: Type II workplace violence (WPV), violence committed by patients and visitors against staff, is prevalent in Emergency Departments (EDs) throughout the US and leads to burnout, attrition, and reduced quality of care. This quality improvement project sought to respond to type II WPV in the ED by creating a tool for nurses to aid in decision making for escalating patient behavior.

Methods: This project utilized a pretest-posttest design to assess nurse confidence in managing aggression, rates of type II WPV, and nurse feedback in two community/rural EDs. Nurse confidence was measured using the Clinician Confidence in Coping with Aggression (CCPA) scale. The intervention was implementation of standard work that triggers team huddles to guide response to escalating patient behavior. The intervention used Plan-Do-Study-Act (PDSA) cycles to improve the standard work based on staff feedback.

Results: Education was provided to 60 ED nurses. 23 participated in the pretest survey and 15 participated in the posttest survey. There was no statistically significant change in the CCPA total scores. There was a statistically significant increase in nurse ability to protect themselves from physical violence. Reporting for type II WPV increased at both sites. Analysis of nurse feedback revealed that environmental safety, practice support, and patient interventions are areas where nurses need support.

Conclusion: This project contributes to the body of knowledge suggesting that type II WPV interventions in EDs should be multi-pronged with strong leadership support and sustainment plans. Physical and environmental safety are important components of type II WPV prevention.

Implications: This project was designed for sustainability, using PDSA cycles to refine the standard work. More research is needed regarding the theoretical framing of type II WPV in healthcare. Type II WPV remains underreported. Strong reporting mechanisms are important for sustainable prevention plans.

Key Words: type II workplace violence, emergency department, de-escalation, nurse confidence, patient aggression
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Workplace violence (WPV) against health care workers is a growing problem in the US (Zhang et al., 2021). The United States Occupational Safety and Health Administration (OSHA) and the Bureau of Labor Statistics (BLS) estimate that 10% of all WPV incidents in the United States occur in health care settings (OSHA, 2015). A 2014 American Nurses Association (ANA) survey of 3,765 nurses and nursing students found that 43% of respondents had experienced a threat by a patient or family member and 24% reported being physically assaulted by a patient or family member in the last year (ANA, 2015). WPV has serious consequences for health care workers and health care systems. It leads to trauma for nursing staff which can result in psychological harm, missed days of work, and decreased engagement in patient care (Zhang et al., 2020).

The National Institute for Occupational Safety and Health (NIOSH) defines WPV as threatening behavior, verbal abuse, physical assault, or sexual assault occurring in the workplace (2020). Although four categories of WPV have been identified, the focus of this project is on type II WPV, violence committed against employees by visitors or patients, the most common type of WPV within health care settings (OSHA, 2015). Type II WPV committed against Emergency Department (ED) nurses is prevalent across the US (The Joint Commission [TJC], 2018). A survey conducted by the Emergency Nurses Association (ENA) between 2009 – 2011 found that 12% of ED nurses experienced physical violence by a patient or family member in the last seven days (OSHA, 2015).

The ability to prevent and protect against type II WPV amongst ED nurses is impacted by lack of leadership support, inadequate physical security measures, and lack of education and
competencies related to managing aggression and de-escalation (Zhang et al., 2020). Addressing and preventing type II WPV should address factors such as education regarding the scope and prevalence of the problem, education regarding patient and visitor precursor behavioral cues, and de-escalation techniques and strategies (American Nurses Association [ANA], 2015; Butkowski et al., 2022; TJC, 2021). The consequences of type II WPV against nurses include psychological trauma, burnout, decreased job satisfaction, increased attrition rates, and diminished quality of patient care (Li et al., 2020; Zhang et al., 2020). Programs aimed at preventing and minimizing the impact of type II WPV will result in improved safety amongst RN, lower rates of burnout, and decreased turnover.

**Background**

A survey by Gillespie and colleagues of ED nurses in the Midwest United States revealed that in their ED careers, 91.9% of nurses experienced verbal abuse, 65.8% experienced a threat of violence, and 67.3% experienced physical assault (2017). These high numbers of WPV incidents against nurses in the ED are thought to be related to patients’ presenting factors such as trauma, mental health crisis, and intoxication as well as the proximity and constant contact nurses have with patients (Ayaresh & Hayajneh, 2021). ED nurses often lack knowledge in patient behaviors that are precursors to violence as well as knowledge of de-escalation techniques to utilize when these precursors occur (Wolf et al., 2014). Zhang and colleagues conducted a qualitative review of the experience of WPV for ED nurses and found that nurses express needing support from leadership – both in reporting an incident and in education about type II WPV and how to prevent it (2020).

WPV is underreported in the United States and responses to type II WPV amongst health care systems vary (NIOSH, 2020). Many nurses report feeling unsupported in reporting incidents
with either no formal structure for reporting or lack of support from management or peers (NIOSH, 2020). In addition to reporting and identification issues, ED nurses have insufficient knowledge in patient behavioral precursors to violence and de-escalation techniques (Wolf et al., 2014). Nurses also report needing more support from leaders, information about the scope of type II WPV, and practical education and competencies related to managing aggression and tools to assist them with managing aggressive and potentially violent behavior (Wolf et al., 2014; Zhang et al., 2020).

The sites for this project are two rural EDs in a large, multi-hospital system in the Midwest of the United States. The system includes urban, community, and rural settings. A system-wide workgroup was convened in 2018 to address the growing reporting of type II WPV at daily check-in huddles at all sites. A WPV policy was drafted and implemented. A reporting structure was developed and was further refined in 2019. Data regarding incidents, including type and location are maintained. The workgroup is focused on system wide education and proactive approaches to WPV reduction. In two rural EDs within the system, since January of 2021, between 2-5 type II WPV incidents per month have been reported with a higher rate of verbal reports through daily huddles. About 40% of these incidents are reported by nurses and an additional 30% are reported by nurse technicians. Staff injuries that have occurred in the last six months include psychological trauma, lacerations, and contusions. Additionally, a safety survey was conducted in October of 2022, and the staff rated their answer to “I feel safe at work” unfavorably, and seven points lower than answered two years ago. Comments on the safety survey predominately focused on type II WPV prevention and the need for safety measures to keep staff safe.
Type II WPV is frequent in EDs and leads to significant adverse consequences for nurses and patient care. Absence of proactive support and tools that assist nurses in addressing aggressive and violent behavior contributes to the problem. The purpose of this project is to create, implement, and evaluate standard work for nurses to utilize in response to escalating behavior in EDs. This work builds on interventions already implemented at the project sites, including type II WPV education and patient screening tools. The project has four aims: to understand baseline rates of type II WPV and level of nurse confidence in managing aggressive behavior, to implement and assess the effectiveness of the standard work on rates of type II violence, to assess the effectiveness of the standard work on nurses’ confidence in their ability to manage escalating and aggressive behavior, and to explore nurse feedback on the standard work tool and type II WPV prevention in the ED.

Review of Literature

Although type II WPV in health care settings has gained significant national attention (ANA, 2015; Butkowski et al., 2022; TJC, 2018; NIOSH, 2020), there is limited evidence that there is one effective intervention for ED nursing teams that impacts rates type II WPV. In fact, evidence suggests that nursing knowledge alone is not an effective intervention, and a holistic, multi-pronged, and comprehensive approach to the problem is warranted. There is emerging evidence, through quality improvement projects and expert guidelines, that unit level interventions do improve nursing knowledge and confidence in their ability to manage aggression (Butkowski et al., 2022; Chang et al., 2022; Dahnke & Mulkey, 2021; Hamrick et al., 2022; Zicko, et al., 2017).

Despite limited evidence regarding the effectiveness of interventions at the unit level on preventing incidence of type II WPV, there is promising evidence in some scenarios. Studies that
focus on the development of an educational intervention at the unit level have found modest, but short-term impact on rates of type II WPV in some settings (Arnetz et al., 2017; Gillespie et al., 2014; Senz et al., 2021). Interventions designed in collaboration with staff on the units had a statistically significant impact on rates of type II WPV (Arnetz et al., 2017; Gillespie et al., 2014; Senz et al., 2021). Some of the most effective interventions in the literature are multi-pronged interventions based on unit walk throughs with staff and leader input (Arnetz et al., 2017). Furthermore, units with limited engagement before and after implementation of interventions are not as successful at implementation or achieving desired results (Gillespie et al., 2014).

There is evidence that sustained, multi-phased interventions with leadership support and strong reporting structures are effective (Arnetz et al., 2017; Gillam, 2014; Gillespie et al., 2014; Senz et al., 2021; Wirth et al., 2021). Multi-step interventions involve development of a WPV reporting tool, modification of charting, leadership support of policies and procedures dedicated to WPV prevention, and leadership engagement (Arnetz et al., 2014; Gillespie et al., 2014; Spelten et al., 2020; Wirth et al., 2021). Interventions that are designed in collaboration with unit leaders and staff have a statistically significant impact on decreasing rates of type II WPV (Arnetz et al., 2017; Gillespie et al., 2014; Senz et al., 2021). Qualitative studies reveal that nurses report needing multiple interventions aimed at type II WPV prevention which include education about the scope of the problem, screening tools, de-escalation techniques, and support in de-escalation (Gates et al., 2011; Gillespie et al., 2019).

There is growing evidence that the use of proactive tools or algorithms, particularly in response to patient behavioral cues, has an impact on both nurse knowledge and confidence as well as rates of type II WPV (Chang et al., 2022; Dahnke & Mulkey, 2021; De la Fuente & Schoenfisch, 2019; Hamrick et al., 2022; Story et al., 2020; Zicko et al., 2017). This concept was
originally studied in psychiatric settings but has recently been applied to acute care settings with success (Zicko et al., 2017). Proactive interventions studied include the use of a behavioral emergency response team, trained at de-escalation and behavioral modification (Dahnke & Mulkey, 2021; Zicko et al., 2017), use of aggression screening tools with associated interventions for de-escalation and behavior management (Hamrick et al., 2022), and education through comprehensive training programs (Chang et al., 2022; Story et al., 2020).

Many professional and regulatory organizations have created guidelines for the prevention of type II WPV in the health care and ED setting. These include the ANA (2015), TJC (2021), NIOSH (2020), the Institute for Healthcare Improvement (IHI) (Butkowski et al., 2022), and various other state and national organizations. In fact, as of January 1, 2022, TJC workplace prevention strategies are required in the standards of care for all accredited hospitals (TJC, 2018). These guidelines are based on available evidence and draw from several fields, such as psychiatry and law enforcement. The recommendations include the following: (1) development of supportive policies and procedures, (2) security engagement, (3) education to staff, (4) disruptive behavior algorithms, and (5) reporting and after incident support (ANA, 2015; Butkowski, et al., 2022; NIOSH, 2020; TJC, 2021). The use of protocols or tools that detail behavioral response plans is recommended within these bundles (Butkowski et al., 2022; TJC, 2021).

**Translation Framework**

The Knowledge to Action (KTA) framework is the evidence translation model for this project. The KTA framework, created by Graham and colleagues at the University of Ottawa, Canada in 2006, integrates knowledge creation with knowledge application (White et al., 2021). The model is intended to be used by systems and assumes a process that is complex and iterative
with adaptation to changes and new learnings along the way (Graham & Tetroe, 2010). The
generation of new knowledge and the application of that knowledge are processes that occur in a
cycle and can occur sequentially or simultaneously (White et al, 2021). This project builds on
work already done at the sites, including WPV education, de-escalation training, and the use of
patient behavioral screening tools. The KTA framework provides structure for the ongoing
nature and complexity of this work and the evidence that bundled approaches to type II WPV are
most effective. The six steps of the KTA framework and their application to type II WPV
prevention are displayed in Appendix A.

The KTA framework supports use of research generated as well as experiential and
contextual knowledge (Graham & Tetroe, 2010), allowing for the creation of standard work
based on evidence and national guidelines but tailored to unit needs. The steps of the KTA
framework also support the Plan-Do-Study-Act (PDSA) approach to project implementation.
Feedback from leadership rounding was incorporated to new iterations of the standard work and
sustainment of the use of the standard work tool. The KTA framework also supports this
project’s contribution to new knowledge as insights gained during the project can be shared as
the cycle to KTA is continuous. This project achieved results that could guide the generation of
new interventions at the site as well as research for further knowledge discovery related to the
relatively young field of type II WPV prevention in hospital and health care settings.

**Method**

This project utilized a pre-test/post-test design to test the impact of standard work that
triggers a nurse led huddle for patients that screen at risk for violent or aggressive behavior. The
project was conducted over a 16-week time period. The sites for the project were two EDs within
a multihospital system in the Midwest of the US. Site A is an 18 bed ED in a rural/community
setting and site B is a 10 bed ED in a rural setting. Site A has about 24,000 annual visits and site B has about 14,000. Both sites are level 4 trauma centers and Site A is a certified primary stroke center. The sites are 18 miles apart and nurses, staff, and providers often work at both sites. Ethical review and approval for this quality improvement project was obtained from the Johns Hopkins University School of Nursing Project Ethical Review Committee (PERC) and the project was waived for Institutional Review Board (IRB) review by the senior nurse researcher and nurse research council at implementation site.

The primary sample for the project is a convenience sample of all ED nurses and float pool nurses who work within the ED at both sites. During the project period, there were about 60 nurses in this pool and the turnover rate was between 20-25%. The secondary sample is a convenience sample of all patients encounters during the project period. The ED visits were only analyzed for volume and count of type II WPV incidents.

This project added to existing type II WPV prevention efforts within the system. The Aggressive Behavior Risk Assessment Tool (ABRAT), a tool that identifies behavioral cues and risks for potential escalation and aggression, had been implemented in the months prior. The ABRAT tool has been validated in acute inpatient care units (Kim et al., 2012) and in long term care settings (Kim et al., 2019) in identifying potential aggression in patients. It was recently validated for use in the Emergency Department through an internal study at the organization (Kim et al., 2022). The assessment is done upon admission for every ED visit for patients greater than age 10. A score above 0 indicates the potential for escalation. Prior to implementation, all employees had also had a mandatory electronic education module on de-escalation techniques.
The standard work tool was created as an intervention for at risk, escalating, or violent patients in the EDs using ANA (2015) and TJC (2012) guidelines. The tool was created in conjunction with leaders and staff at the sites. The document was created four weeks prior to implementation and reviewed and edited as needed based on feedback. The final document was shared with teams two weeks prior to implementation. Education regarding the tool was shared electronically via email, and verbally with education sessions conducted with day and night shift RNs at both sites over the course of two weeks. The standard work document can be found in Appendix B.

Prior to the intervention, rates of type II WPV in both EDs were assessed utilizing the sites’ safety reporting system data as well as security logs for calls related to type II WPV. Surveys were administered to the nursing team collecting demographic information as well as nurse sense of confidence in managing and addressing aggressive and violent behavior using the Clinician Confidence in Coping with Patient Aggression (CCPA) scale (Thackrey, 1987; de la Fuente & Schoenfisch, 2017; Story et al., 2020). The CCPA scale has been tested for validity and reliability and has achieved a Cronbach’s alpha score between 0.92-0.96 in previous studies (de la Fuente & Schoenfisch, 2017; Story et al., 2020). Permission to use the CCPA scale in its original form was granted by Dr. Thackrey on April 3, 2022. The scale can be found in Appendix C.

The project design included utilizing a Plan-Do-Study-Act (PDSA) model. Three PDSA cycles were conducted during the implementation period of twelve weeks. After implementation of the standard work, weekly rounding was conducted by the project team to remind team members to utilize the tool, seek feedback, and collect debrief forms. After the first four-week PDSA cycle, the teams reported that use of the debrief tool was challenging to use after or during
a potential or actual type II WPV event. After that cycle, the debrief form was made optional and verbal feedback was collected and documented after each rounding session. A video was shared electronically with the team to review the changes and encourage huddles. During the second PDSA cycle, it was determined that nurses were utilizing huddles but not utilizing all triggers for the huddles. Reinforcement was provided during weekly rounding. During each PDSA cycle, feedback was incorporated or addressed. The standard work tool changed only minimally during the 12 weeks, but the project team was able to provide coaching and feedback during weekly rounds. The hospital supervisor team, the social work team, and the security team was engaged and educated about the tool to help support the team members during huddles and care planning for the patient.

After 12 weeks, at the conclusion of the project, the CCPA survey was sent out to all ED nurses. This final survey had an open-ended question for team members to provide any final feedback on the standard work document. Additionally, feedback sessions were held at each site and information was recorded by hand and transferred to electronic document. No identifying information was recorded. Rates of type II WPV were assessed during the project period.

**Data Analysis**

Statistical analysis was performed using SPSS Version 27. Pre and Post intervention demographic data, rates of type II WPV, and CCPA scores were analyzed using descriptive statistics. Rates of type II WPV were calculated using two data points: the organization’s reporting system and a security calls log at each site. The mean total and individual pre/post CCPA scores were compared using Mann Whitney U tests. Qualitative data collected from rounding and feedback sessions and from the post intervention survey were analyzed for themes.
Results

Sample

All ED and float pool nurses (N=60) were offered education and support regarding the standard work document. 23 nurses participated in the pre-intervention survey and 15 nurses participated in the post intervention survey. Due to RN turnover and recruiting challenges, separate groups participated in the pre and post intervention surveys. The characteristics for both groups are described in Table 1. In both groups, most nurses were female and white with under 10 years of experience as an RN and as an ED RN. Most respondents in both groups work in both EDs and over 95% have been exposed to type II WPV in their careers.
Table 1
Demographic Characteristics, Pre and Post Intervention groups

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Pre- Intervention (N=23)</th>
<th>Post-Intervention (N=15)</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender, n (%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>3 (13)</td>
<td>2 (13.3)</td>
<td>0.886</td>
</tr>
<tr>
<td>Female</td>
<td>19 (82.6)</td>
<td>11 (73.3)</td>
<td></td>
</tr>
<tr>
<td>Nonbinary</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Other, Prefer not to respond</td>
<td>1 (4.3)</td>
<td>2 (13.3)</td>
<td></td>
</tr>
<tr>
<td>Race, n (%)</td>
<td></td>
<td></td>
<td>0.310</td>
</tr>
<tr>
<td>White</td>
<td>22 (95.7)</td>
<td>12 (80)</td>
<td></td>
</tr>
<tr>
<td>Black or African American</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>American Indian or Alaskan Native</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Asian</td>
<td>0</td>
<td>1 (6.7)</td>
<td></td>
</tr>
<tr>
<td>Native Hawaiian or other Pacific Islander</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>1 (4.3)</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>No Response</td>
<td>0</td>
<td>2 (13.3)</td>
<td></td>
</tr>
<tr>
<td>Years Experience as RN, n (%)</td>
<td></td>
<td></td>
<td>0.410</td>
</tr>
<tr>
<td>0-2 years</td>
<td>2 (8.7)</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>3-5 years</td>
<td>5 (21.7)</td>
<td>5 (33.3)</td>
<td></td>
</tr>
<tr>
<td>6-10 years</td>
<td>8 (34.8)</td>
<td>4 (26.7)</td>
<td></td>
</tr>
<tr>
<td>11-15 years</td>
<td>3 (13)</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>&gt;16 years</td>
<td>5 (21.7)</td>
<td>4 (26.7)</td>
<td></td>
</tr>
<tr>
<td>Years Experience as ED RN, n (%)</td>
<td></td>
<td></td>
<td>0.808</td>
</tr>
<tr>
<td>0-2 years</td>
<td>7 (30.4)</td>
<td>3 (13.3)</td>
<td></td>
</tr>
<tr>
<td>3-5 years</td>
<td>9 (39.1)</td>
<td>4 (26.7)</td>
<td></td>
</tr>
<tr>
<td>6-10 years</td>
<td>3 (13)</td>
<td>3 (20)</td>
<td></td>
</tr>
<tr>
<td>11-15 years</td>
<td>1 (4.3)</td>
<td>1 (6.7)</td>
<td></td>
</tr>
<tr>
<td>&gt;16 years</td>
<td>3 (13.3)</td>
<td>2 (13.3)</td>
<td></td>
</tr>
<tr>
<td>Work site, n (%)</td>
<td></td>
<td></td>
<td>0.665</td>
</tr>
<tr>
<td>Site A</td>
<td>6 (26.1)</td>
<td>6 (40)</td>
<td></td>
</tr>
<tr>
<td>Site B</td>
<td>15 (65.2)</td>
<td>8 (53.3)</td>
<td></td>
</tr>
<tr>
<td>Both sites</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exposure, type II WPV in career, n (%)</td>
<td></td>
<td></td>
<td>0.204</td>
</tr>
<tr>
<td>Yes</td>
<td>22 (95.7)</td>
<td>13 (86.7)</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>0</td>
<td>1 (6.7)</td>
<td></td>
</tr>
</tbody>
</table>

Findings for Aim 1

Rates of type II WPV per 1,000 ED visits were calculated for three months pre intervention, during the intervention, and two weeks after the intervention. Figure 1 describes the
rates of type II WPV per the WPV reporting tool at the site. Due to low reporting, security call logs were analyzed. The rates of security calls per 1,000 patient visits were calculated. Figure 2 depicts security call rates for both sites pre and post intervention. Prior to the intervention, the average rate of type II WPV reporting for site A was 1.39 and for site B was 0.9. The average rate of security calls at site A was 1.67 and at site B was 2.25.

Prior to the intervention, the mean score for the CCPA scale was 51.87 with a standard deviation of 14.5. The median score was 53. The summary scores were normally distributed (Shapiro-wilk score of 0.981 and p value, 0.93).

**Findings for Aim 2**

Because the debrief forms were not utilized, the use of the standard work tool was assessed using collected feedback as well as an added question to the post intervention survey – “did you huddle for potentially aggressive or violent patients”. 40% of participants (n=6) stated that they used a huddle. Three main themes were identified after analyzing the nurse feedback. The themes were each grounded in the need for support: environmental/physical support; practice support; and support of the patient. The themes, sub-themes, and representative comments are listed in table 2. Nurses reported that the physical environment of the EDs was a concern. There is a lack of general space at site B and ED rooms that are several hallways away from the main nurses’ station at site A. ED rooms are not set up for optimal safety, with many objects and pieces of equipment available to be used as weapons. Nurses also reported needing practice support in a variety of formats. This includes desire for an emergency response team that responds to WPV incidents, a need for the standard work to be automated/embedded within the electronic medical record (EMR), greater visibility of patient history and care plan within the EMR, and continued training regarding de-escalation. Patient support needs identified centered
around more information in the chart about patient triggers and calming techniques and the ability to create a calming environment for patients with behavioral health concerns.

Table 2

<table>
<thead>
<tr>
<th>Theme</th>
<th>Sub-category</th>
<th>Nurse comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental/Physical support</td>
<td>Layout of ED</td>
<td>“we need more physical safety measures in place, like a safe space to go with doors that lock and a barrier around the nurses station”</td>
</tr>
<tr>
<td></td>
<td>Room layout</td>
<td>“rooms are too far away from the nurses station and we cannot get to them soon enough to help a colleague”</td>
</tr>
<tr>
<td></td>
<td></td>
<td>“our rooms have a lot of risk for patient self-harm and harming us...we should have rooms that are cleared of potentially dangerous equipment or rooms that we can easily clear or hide things that could be a danger”</td>
</tr>
<tr>
<td>Practice Support</td>
<td>EMR</td>
<td>“we need door signs to indicate behavior risk”</td>
</tr>
<tr>
<td></td>
<td></td>
<td>“This document would be more useful as part of the EMR”</td>
</tr>
<tr>
<td></td>
<td></td>
<td>“It is hard to use a piece of paper. If this popped up after we entered the ABRAT score, it would be more helpful”</td>
</tr>
<tr>
<td>Support team</td>
<td></td>
<td>“It would be helpful to know what triggers aggressive behavior and what interventions work. If this was an alert in the EMR, it would be very helpful”</td>
</tr>
<tr>
<td></td>
<td></td>
<td>“A huddle is good but I would rather be able to have an emergency team respond right away to a violent episode”</td>
</tr>
<tr>
<td>Ongoing training</td>
<td></td>
<td>“Our de-escalation training has been helpful, but we need more frequent training and more training”</td>
</tr>
</tbody>
</table>
Support of the patient | Remove triggers and potential harm | “we need information to understand why the patient becomes violent....is it mental health/behavioral health, reaction to medication, dementia or are they just mean?”
Understand therapeutic interventions | “It would be nice to be able to understand what interventions help a particular patient, so we don’t trigger them”

**Findings for Aim 3**

Figures 1 and 2 depict the pre and post intervention rates of type II WPV for both the WPV reporting tool and the security call log. The average rate of type II WPV reporting post intervention for site A was 1.36 and for site B was 0.36. The average rate of security calls for type II WPV post intervention for site A was 1.78 and for site B was 3.41. At both sites, there was an increase in type II WPV reports and security calls after the intervention, but site B appears to have lower rates of reporting overall. Site B, which is a smaller site, does call security more often.

**Figure 1**

*Type II WPV Reporting rates*

![Graph showing type II WPV reporting rates over time for Site A and Site B.](image)

*Note:* Line depicts timing of intervention
Findings for Aim 4

The post-intervention CCPA mean total score was 59.4, with a standard deviation of 10.45 and a median of 60. The mean scores are normally distributed (Shapiro-Wilk 0.946, p 0.462). Total survey scores as well as individual question ranks were compared using a Mann Whitney U test. The mean score difference between the pre and post intervention groups did not achieve statistical significance (p = 0.145). The mean scores and mean total scores for the pre and post intervention groups are depicted in Table 3. The only question where statistical significance was reached was question 10, “How able are you to protect yourself physically from an aggressive patient?”. The mean score for the pre-intervention group was 16.2 and for the post intervention group was 24.57, with a p value of 0.02.
Table 3

Mean CCPA Scores, Pre and Post Intervention

<table>
<thead>
<tr>
<th>CCPA Question</th>
<th>Pre-Intervention Mean</th>
<th>Post-Intervention Mean</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>How comfortable are you in working with an aggressive patient?</td>
<td>18.26</td>
<td>21.40</td>
<td>0.408</td>
</tr>
<tr>
<td>How good is your present level of training for handling psychological aggression?</td>
<td>18.5</td>
<td>21.03</td>
<td>0.497</td>
</tr>
<tr>
<td>How able are you to intervene physically with an aggressive patient?</td>
<td>18.02</td>
<td>21.77</td>
<td>0.314</td>
</tr>
<tr>
<td>How self-assured do you feel in the presence of an aggressive patient?</td>
<td>17.63</td>
<td>22.37</td>
<td>0.202</td>
</tr>
<tr>
<td>How able are you to intervene psychologically with an aggressive patient?</td>
<td>19.80</td>
<td>19.03</td>
<td>0.836</td>
</tr>
<tr>
<td>How good is your present level of training for handling physical aggression?</td>
<td>17.48</td>
<td>22.60</td>
<td>0.172</td>
</tr>
<tr>
<td>How safe do you feel around an aggressive patient?</td>
<td>17.48</td>
<td>21.23</td>
<td>0.304</td>
</tr>
<tr>
<td>How effective are the techniques that you know for dealing with aggression?</td>
<td>18.36</td>
<td>19.93</td>
<td>0.680</td>
</tr>
<tr>
<td>How able are you to meet the needs of an aggressive patient?</td>
<td>18.80</td>
<td>20.57</td>
<td>0.637</td>
</tr>
<tr>
<td>How able are you to protect yourself physically from an aggressive patient?</td>
<td>16.20</td>
<td>24.57</td>
<td>0.022</td>
</tr>
<tr>
<td>Summary Score</td>
<td>51.87</td>
<td>59.4</td>
<td>0.145</td>
</tr>
</tbody>
</table>

Discussion

Type II WPV in the ED is a complex and multifactorial problem that has not been solved by one single intervention. National guidelines suggest a multi-pronged approach that addresses type II WPV on several levels including leadership, system, local unit, patient, and physical environment (ANA, 2015; Butkowski et al., 2022; TJC, 2021). This project was created to test if a protocol, a standard work document, to prompt nurses to huddle proactively would impact rates of type II WPV or nurse sense of confidence in managing aggression in two small, rural EDs. The findings suggest meaningful clinical change but do not achieve statistical significance.

Standard work to prompt a nurse led huddle to address escalating behavior did not significantly impact nurse confidence in managing aggression or decrease rates of type II WPV.
The standard work did have a significant effect on nurse sense of confidence in managing physical aggression and seemed to increase type II WPV reporting at both sites. The findings of this project are consistent with the overall evidence that one intervention does not necessarily impact rate of type II WPV (Geoffrion et al., 2020; Spelten et al., 2020; Wirth et al., 2021). However, interventions done in collaboration with the unit staff and leaders tend to have more of an impact and this project did not (Arnetz et al., 2017; Gillespie et al., 2014; Senz et al., 2021). Quality improvement projects using proactive tools to address aggressive behavior have shown significant impact on summary CCPA scores (Dahnke & Mulkey, 2021; Zicko et al., 2017) but this intervention was unable to achieve statistically significant change. The significant change in the answer to the question about protection against physical aggression does have clinical significance, however. The standard work document addresses two areas that may have contributed to this change: the presence of security team members at each huddle as well as prompts for de-escalation and prioritization of staff safety. The teams were empowered to put safety measures in place for aggressive and potentially aggressive behaviors. These results suggest that although statistical significance was not achieved, clinical change did occur, and the ED nursing team is becoming more aware of and comfortable with managing aggressive behavior.

The increase in type II WPV reporting and security calls also has clinical significance at these sites. The rates of historical reporting at both sites have been low and are consistent with national trends in reporting (NIOSH, 2020). The increase in reporting may have been a result of the standard work prompts for reporting in the document. The security calls suggest that nurses were utilizing huddles for potential aggression, consistent with the finding that 40% of team members were huddling in the post intervention group. Type II WPV remains underreported at
both sites and further intervention should focus on ensuring accurate reporting. This would allow for more targeted and meaningful interventions (TJC, 2021).

Nurses in the post intervention group report huddling per the standard work guidelines for aggressive and potentially aggressive patients, a change in practice. The guidelines include de-escalation and safety techniques. In qualitative feedback, nurses also reported on the need for physical and practice support. These findings suggest that although the intervention did not have a significant impact on confidence overall, the intervention may have called attention to meeting basic safety needs of the nurses. This finding supports the literature in that physical environment is important to nursing teams and their sense of safety (Gates et al., 2011; Gillespie et al., 2019). This is also suggestive that a framework that incorporates physical safety and environment in addition to nursing practice and patient behavior may be more effective at preventing type II WPV and improving nurse confidence (Gates et al., 2011; Gillespie et al., 2019; Ramacciati et al., 2018).

Limitations

This project has several limitations related to the design and site-specific constraints and issues. This project utilized a convenience sample of ED nurses and only achieved a 38% participation rate for the pre intervention survey and 25% participation for the post intervention survey. Because of the small sample and differences in pre and post intervention group participation, a Mann Whitney U test was utilized for statistical analysis. This test is intended for use for independent samples, but five participants did complete both surveys. The low participation rate could have been related to several issues happening in the unit such as higher than normal turnover rates for nursing and manager turnover. Because type II WPV in healthcare is a relatively new field of study, there are not widely used tools to measure impact of
intervention. Many studies utilize outcomes of rate of type II WPV, nurse knowledge, and nurse confidence (Arnetz et al., 2017; Dahnke & Mulkey, 2021; Gates et al., 2011; Geoffrion et al., 2020; Gillam et al., 2014; Gillespie) as outcomes measures. Measures of nurse knowledge and confidence alone can be indicators of the immediate effectiveness of an intervention, but not long-term markers. Decreasing the rate and severity of type II WPV should be the overall goal, and this is difficult without sustained, long term, multi-pronged approaches that are widely supported by leaders (Arnetz et al., 2017; Gates et al., 2011; Gillam, 2014; Gillespie et al., 2014; Senz et al., 2021; Wirth et al., 2021). This project was implemented over a 16-week period and although it had strong leadership support, unit level changes made it difficult to sustain this over the entire project period.

**Recommendations**

The results of this quality improvement project support recommendations for future work both at the site and nationally. Efforts to prevent type II WPV should start with improved reporting systems. Reports should be easy to submit and include immediate follow up. Best practices for reporting and follow up need further research. Because reporting is still thought to be considerably low, improvement is difficult to capture. Initial results to interventions may be increased type II WPV rates. Because type II WPV prevention is best achieved with bundled approaches, single interventions are less effective (Arnetz et al., 2017; Gillespie et al., 2014; Senz et al., 2021; Wirth et al., 2021). Interventions that are part of a broader program and that have strong system and leadership support should be studied. Ongoing program evaluation with standardized and validated outcomes measure tools, such as the CCPA, are needed to measure incremental success in prevention of violence. Outcomes measures should be tracked regularly at the sites. Nurses report needing ongoing education in qualitative studies of type II WPV (Zhang
et al., 2020). In this project, nurses gave feedback that they need more education and practice support, suggesting interventions that have strong sustainment plans are necessary.

One challenge with type II WPV prevention is that its underreporting and multifactorial causes make it difficult to study. There is not a currently widely accepted theoretical underpinning for the study of type II WPV, but the evidence suggests that a framework that incorporates multiple dimensions is important for type II WPV prevention. An intervention aimed at nurse practice and education does not address patient care factors, environmental factors, or cultural factors. Ramacciati and colleagues (2018) reviewed theories and frameworks related to violence against emergency nurses. Most theories are untested, but those that might be most effective for further study regarding type II WPV in the ED (and more broadly in healthcare) are the Haddon Matrix, the social-ecological model, and the interactive model of workplace violence (Ramacciati, et al., 2018). The Haddon Matrix considers type II WPV in three points in time with three factors to consider: before assault, during assault, and after assault considering employee factors, patient/visitor factors, and physical/environmental factors (Ramacciati et al., 2018). The social-ecological model applies four categories to WPV prevention: individual, relationship, community, and societal factors (Ramacciati et al., 2018). The interactive model of WPV considers the interaction of the perpetrator and victim with their individual risk factors and workplace environmental factors. This model also considers the outcome of the violence as it relates to the victim and company (Ramaciatti et al., 2018). The qualitative feedback in this project suggests these theories may be a strong framework for future type II WPV prevention. Further testing of these theories is warranted.
Dissemination

The results of this project and recommendations for the future at both the local and national level will be shared with key stakeholders at the sites, system stakeholders, and various professional organizations. The results will be shared at WPV prevention committees within the site hospitals as well as the system wide committee. The results will also be shared with nursing leaders at a system wide bimonthly assembly and will be shared at a CNO council meeting. Recommendations for local changes will be incorporated, such as hardwiring standard work into the EMR, creation of a huddle or de-escalation team, and a physical safety assessment of the space. The project will be submitted for presentation or poster presentation at The American Hospital Association Rural Hospital conference and the American Organization for Nursing Leadership annual conference. The manuscript will be submitted for publication to the Journal of Nursing Administration.

Sustainability

The KTA framework and PDSA design of this intervention both have strong mechanisms for sustainability of this project. The last cycle of feedback and qualitative analysis of feedback can be incorporated into new versions of standard work. This particular intervention can also be built upon to enhance sense of confidence of nurses managing aggression and violent behavior. Because key stakeholders and committees were involved very early in the process of designing this project, they have been engaged in reporting outcomes and ensuring sustainability. The project can also be spread to other areas of the hospital, such as the medical-surgical unit and Intensive Care Unit (ICU). This project was created as a result of a gap in support for type II WPV prevention in the ED. The project itself generated discussion and contributed to gap analyses at both project sites. There is clinical staff and leadership support for continuing to use
the standard work as it is refined and incorporated into a more systemic huddle response to type II WPV and escalating behaviors.

**Conclusion**

This project adds to the body of work attempting to reduce or minimize the rates and impact of type II WPV in EDs. The project results reflect the challenges and successes of the existing body of knowledge on type II WPV prevention. A strong theoretical foundation is needed for future research. Additionally, interventions that are tailored to the unique environment, practice, patient population, and community in which they are implemented are important in making an impact in reducing type II WPV. This work should occur in partnership with the nurses, clinicians, and support personnel at the bedside. Dedication to sustainment and refinement of interventions by our healthcare system and leaders is imperative in this work.
References


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Doi:10.3390/ijerph17010299.


[https://www.osha.gov/sites/default/files/OSHA3826.pdf](https://www.osha.gov/sites/default/files/OSHA3826.pdf)


patient safety, Staff safety, and staff collaboration. *Worldviews on Evidence-Based Nursing, 14*(5), 377-384.
Appendix A

Select, tailor, implement interventions: use standard work co-designed with unit and system input

Monitor knowledge use: ongoing assessment of use of standard work; PDSA

Assess Barriers: work with local team and use local resources

Evaluate Outcomes: number of WPV incidents, staff knowledge & confidence

Adopt Knowledge to local context: fit huddle process within existing WPV work, create tool with feedback from local team

Identify Problem: Type II WPV in EDs

Identify, review, select knowledge: TJC and ANA guidelines - proactive management with huddles

Sustain knowledge use: ongoing evaluation, share results, fit into system work

Knowledge Inquiry

Knowledge Synthesis - WPV Prevention guidelines & bundles

Tailored Knowledge

Knowledge tools/products Local level tools based on national guidelines

Adapted from: Graham & Tetroe, 2010, page 208
## Appendix B

### Standard Work Activity Sheet

<table>
<thead>
<tr>
<th>Task Description:</th>
<th>Key Point / Image / Measure (What good looks like)</th>
<th>Who</th>
</tr>
</thead>
</table>
| **1.** ABRAT (Aggressive Behavior Risk Assessment Tool) Score is >0 (reminder ABRAT is a predictor of potential aggressive behavior) OR Patient has presented in an agitated state or is becoming increasingly agitated (at a level 1 or 2 on the attached algorithm) OR Attempts to verbally de-escalate are not appearing to help the situation | Beside RN or Charge RN to coordinate huddle by sending Voalte text or gathering team in person:  
- Charge RN if not already alerted  
- Security  
- Provider  
- MSW (Medical Social Work) (Master of Social Work)  
- Bedside RN  
- Safety Attendant  
- Nursing leader – hospital supervisor or nurse manager if available, may huddle without leader | Bedside RN/ Charge RN |
| **2.** Team huddles outside of patient room or at nurses’ station. Huddle led by RN, Charge RN, or hospital supervisor as determined by needs of the team. | Assess the need for:  
- De-escalation – see attached algorithm for de-escalation steps  
- Need for Social Work consult  
- Need for tele-psych consult  
- Environmental modification or comfort measures  
- Security/local PD Presence  
- Video monitoring or 1:1 sitter  
- Clarify AMA Status - can they leave or not? Reference AMA policy  
- Violent threat flag in EPIC  
- Door signage to alert care team | Charge Nurse, Bedside RN, MSW, Security, Provider, bedside safety attendant |
### De-escalation Techniques

<table>
<thead>
<tr>
<th>Level</th>
<th>Symptoms/Behaviors</th>
<th>Your Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Team initiates plan</td>
<td>• Medication management per provider</td>
</tr>
<tr>
<td></td>
<td>Plan is implemented. Plan for updates to team as decided upon at huddle.</td>
<td>Charge Nurse, Bedside RN, MSW, Security, Provider, bedside safety attendant</td>
</tr>
<tr>
<td>4</td>
<td>Re-evaluation of patient behavior after plan is initiated</td>
<td>Bedside RN or Charge RN, other team members as needed:</td>
</tr>
<tr>
<td></td>
<td><strong>OR</strong></td>
<td>• Secure personal safety, move away from situation if possible.</td>
</tr>
<tr>
<td></td>
<td>Patient continues to escalate</td>
<td>• Call security immediately</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Security to bedside</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Call care team together again for a huddle to re-evaluate and follow routine processes for violent behavior</td>
</tr>
<tr>
<td>5</td>
<td>Safety Pause</td>
<td>Document event</td>
</tr>
<tr>
<td>6</td>
<td>Continuous monitoring of situation</td>
<td>Interdisciplinary team to stay in contact as needed. If any additional changes are required- team is to re-huddle.</td>
</tr>
<tr>
<td>7</td>
<td>Debrief</td>
<td>Care team meets to debrief the situation (attached form).</td>
</tr>
</tbody>
</table>
| Level 1 MILD | - Changes in tone and volume of voice  
- Anxious, confused, defensive  
- Trembling, clenching, staring down. | - Anticipate needs  
- Acknowledge their feelings  
- Be empathetic  
- Apologize for negative experience  
- Amend problem if possible  
- Discuss alternative solutions |
| Level 2 MODERATE | - Verbal aggression: raising voice, insulting  
- Exaggerated movements: pacing, throwing hands, finger pointing  
- Making challenging or argumentative comments | - Be supportive  
- Allow the person to vent  
- Actively listen, show empathy  
- Validate concerns, recognize perceptions |
| Level 3 SEVERE | - Jumpy, easily startled  
- Yelling, screaming, possibly making threats  
- Difficulty listening and following directions | - Maintain self-control  
- Use a neutral tone  
- Open, non-threatening body language  
- Set behavioral limits and boundaries  
- Reduce external stimulation |
| Level 4 PANIC | - Behaviors that put others at risk – violence, weapon, etc.  
- Unable to process directions | - Get away from the situation  
- Call for help  
- Do NOT confront the person  
- Report the incident as soon as possible |

*High Risk /Behavioral Health Huddle BR&RC Emergency Departments*
Post Huddle Debrief

Date: 
Time: 
Location: 
Was the Standard Work Tool Utilized?   Yes           No
Who led the huddle? (Enter role, not name): 
What was the patient’s ABRAT score at the time of the huddle?
Did a WPV event occur?   Yes           No
What type of event occurred? verbal aggression    sexual assault    physical assault
Was a safety pause entered? Yes           No

What went well?

What could be improved?

What suggestions do you have for improving the Standard Work?

Appendix C
Therapeutics for Aggression
Psychological/Physical Crisis Intervention

SELF-ASSESSMENT INSTRUMENT

Circle the number that best describes you:

1. How comfortable are you in working with an aggressive patient?
   1 2 3 4 5 6 7 8 9 10 11
   very uncomfortable very comfortable

2. How good is your present level of training for handling psychological aggression?
   1 2 3 4 5 6 7 8 9 10 11
   very poor very good

3. How able are you to intervene physically with an aggressive patient?
   1 2 3 4 5 6 7 8 9 10 11
   very unable very able

4. How self-assured do you feel in the presence of an aggressive patient?
   1 2 3 4 5 6 7 8 9 10 11
   not very self-assured very self-assured

5. How able are you to intervene psychologically with an aggressive patient?
   1 2 3 4 5 6 7 8 9 10 11
   very unable very able

6. How good is your present level of training for handling physical aggression?
   1 2 3 4 5 6 7 8 9 10 11
   very poor very good

7. How safe do you feel around an aggressive patient?
   1 2 3 4 5 6 7 8 9 10 11
   very unsafe very safe

8. How effective are the techniques that you know for dealing with aggression?
   1 2 3 4 5 6 7 8 9 10 11
   very ineffective very effective

9. How able are you to meet the needs of an aggressive patient?
   1 2 3 4 5 6 7 8 9 10 11
   very unable very able

10. How able are you to protect yourself physically from an aggressive patient?
    1 2 3 4 5 6 7 8 9 10 11
    very unable very able