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# The Effect of Personal Portable Alarms on Clinical Staff's Perception of Safety at an Adult Psychiatric Hospital Unit

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INCREASING STAFF'S PERCEPTION OF SAFETY USING PERSONAL PORTABLE  
ALARMS: ADULT PSYCHIATRIC HOSPITAL UNIT

UNIVERSITY OF SAN DIEGO  
Hahn School of Nursing and Health Science

DOCTOR OF NURSING PRACTICE PORTFOLIO

by

Kornelia A Kopec

A Portfolio presented to the

FACULTY OF THE HAHN SCHOOL OF NURSING AND HEALTH SCIENCE  
UNIVERSITY OF SAN DIEGO

In partial fulfillment of the  
requirement for the degree

DOCTOR OF NURSING PRACTICE  
May/2016

## **Opening Statement**

Today Nurse Practitioners function as clinicians, leaders, researchers, educators, managers and policymakers. As a Doctorally prepared Adult and Geriatric NP I wish to prepare myself for the role of a2 clinician, educator, a change maker, trailblazer, policymaker and hopefully motivator and a mentor to other nurses. My experience as a nurse began 10 years ago as a navy Nurse Corps Commissioned Officer in the specialty of medical and surgical oncology. As a brand new nurse graduate I found the learning curve was steep in the military service and in the ever-growing field of cancer care. I soon realized lifelong learning is nowhere more important than in the healthcare field. New research leads to new evidence, which in turn directs development of new recommendations, guidelines and treatments. In order to have a positive effect on healthcare system and accessibility, research must be translated into practice and applied in clinical settings. I strongly believe as a DNP prepared clinician, I will be a qualified professional to make such impact in the medical oncology area of practice. Furthermore, I would like to combine my passion for psychiatry and oncology, through involvement in the subspecialty of psycho-oncology.

As my capstone project I decided to dedicate my efforts to increase clinical staff's perception of safety in an adult acute care psychiatric settings. This was done by introducing portable personal alarms and measuring the safety attitudes using the Safety Attitudes Questionnaire (SAQ), a scientifically validated screening tool developed by University of Texas. By taking a proactive approach to promptly alert others of potential or actual danger, and as a result initiate timely response, I strived to improve staff's perceived and actual safety. In order to answer the needs of our patients and staff in this ever more complex and oftentimes dangerous

face of healthcare system in our nation, I strongly support the 2004 proposal by the American Association of Colleges of Nursing (AACN) to require the DNP degree as an entry level for all advanced practice nurses.

Apart from patient care, I would like to teach as a professor at the BSN level. My nursing career has been intertwined with the role of an educator from the very beginning, when I was nominated as the Education Officer while serving in the armed forces. It continued as I served as the Director of Staff Development (DSD) at the San Diego County Psychiatric Hospital. Teaching new nurses is a perfect opportunity to contribute to the nursing profession. By sharing own knowledge and experiences, I hope to be able to inspire others to commit to the growth and development of this most honorable and trusted profession. Serving as a mentor is a very fulfilling and rewarding role and it provides an opportunity for personal intellectual achievements being passed on to the next generation of healthcare practitioners. Furthermore, there are certain personal qualities, such as leadership skills, I feel I was able to expand by completing the DNP program at USD. My ultimate dream is to become involved in policy development in the political arena and in doing so becoming a leader in the healthcare law. I strongly believe, completion of the program will enable a dream and a vision, to become a mission, and I have committed and dedicated myself to improve today's healthcare and further promote Doctoral preparation of Nurse Practitioners.

## **Abstract**

The aim of this evidence-based project was to introduce portable personal alarms to all clinical staff on an acute adult psychiatric locked unit at the Mesa Vista Behavioral Health Hospital, San Diego. The purpose was to increase staff's perceived and actual safety. The project resulted in an increase of staff's perception of safety in areas such patient safety as perceived by staff, improved perception of addressing medical errors, and improved perception of learning culture at the facility. While 80% of responding staff found the concept of portable personal alarms beneficial, most agreed alternative models of alarms should be investigated, due to high sensitivity of introduced alarms. The results demonstrate significance of early detection of high risk situations in relation to safety attitudes and identified additional areas of staff's safety concerns.

## **Background**

Throughout history behavioral health professionals have tried to effectively assess, accurately anticipate, successfully prevent and promptly respond to violent behavior. Violence prediction remains a complex phenomenon, especially considering its multifactorial nature (Grisso & Applebaum, 1992). Demonstration of aggression and violence may constitute a manifestation of acute or chronic range of conditions, both psychiatric and behavioral. It is imperative to recognize crisis promptly and perceive violent behavior as an emergency. Moreover, causes of crisis which may give rise to violence and high risk situations are frequently embedded in the structural arrangement of care, the culture of services and rather than solely dependent on patient pathology. (Fisher, 2003).

Violence prevention is of utmost importance to healthcare providers who are required by law to protect third parties against patient violence, as evidenced by the California Supreme Court decision in *Tarasoff vs Regents of the University of California* in 1976. The reality of violent events in the healthcare settings, and within mental health settings in particular, requires the staff to be equipped with proper training, appropriate equipment, screening tools and knowledge about appropriate interventions necessary to safely and effectively manage crisis.

Workplace violence is associated with a negative impact on healthcare workers. A cross sectional design study by Gates, Gillespie and Succop (2011) revealed violence significantly affects work productivity and 17% of staff who were victims of workplace violence suffered symptoms consistent with Post Traumatic Stress Disorder. Moreover, the same study reported increased absenteeism and frequent turnover of staff who suffered violence at the hands of the patients.

An organization's structured proactive and reactive measures should aim to ensure safety by enhancing clinical effectiveness of staff to identify hazards and foresee risks. A linear relationship between verbal and physical aggression has been established and clinical staff need to be able to recognize, assess, then promptly and skillfully intervene during potential and actual assaults (Maier, Stava, Mowwor, Van Rybroek, & Baumaan, 1987).

Healthcare facilities often require clinical (and non-clinical) staff to enter secluded areas to provide patient care. Low traffic and visibility areas are prime locations for violence against staff since the incident is unlikely to be observed or interrupted quickly. Personal portable alarms are a well-validated simple intervention to alert other staff of actual

and potential high risk situations and one of the best ways to protect staff from assault and violence. A wearable panic button devices or portable personal alarms enable rapid identification of location of the incident and facilitate a rapid response. The use of personal portable alarms by staff in clinical settings allows for fast onset of response system and therefore increases actual and perceived safety by clinical staff (ANA, 2012).

The Bureau of Labor Statistics estimates that 900 deaths and 1.7 million nonfatal assaults occur each year due to workplace violence across industries, which is an alarming statistic. A comparison of pre- and post-intervention survey data found an improvement in perceived violence climate factors, such as management commitment to violence prevention and employee engagement, although showed no overall change in assault rates (Lipscomb, 2006). Literature review from disciplines including criminology, occupational and public health, adult education, and mental health and psychology employees' perception of management commitment to violence prevention was associated with less workplace violence (McPhaul, 2004).

According to the ENA research, 82 percent of incidents of physical violence actually happen inside a patient's room, and most exam rooms are not outfitted with emergency alarms or panic buttons. Portable panic buttons that can be physically worn on the nurse may provide additional level of protection. In simple words of Brechner in 2011: "There's only one environmental control measure that we found that actually makes a difference in the amount of violence in a department, and that is a panic button or silent alarm."

## **PICO Question**

In an adult acute behavioral health inpatient locked unit do personal portable alarms increase perception of safety over a period of five weeks?

## **Setting**

Current practice at the Sharp Mesa Vista Hospital in San Diego does not utilize personal portable alarms and relies on use of cell phones, voice/yelling and a silent alarm button located at the nursing station to alert others of crisis/emergency situation. The initial staff interviews revealed concerns with personal safety based on following factors: limited visibility/ability to monitor patients due to unit layout and in particular new location of the nursing station; difficulty of access to the alarm button located at the nursing station and lack of awareness about its functionality. In addition staff expressed concerns with ineffectiveness of phone and voice raised alarms in out of sight areas or while being attacked/choked. Furthermore, staff expressed concerns about personal safety while walking to and from car after dark.

## **Project Plan and Implementation Process**

The Iowa Model of Research-Based Practice to Promote Quality Care was selected to guide clinical decision-making and evidence-based practice implementation from both the practitioner and organizational perspectives. The project began with conducting information interviews with key clinical and administrative staff. These interviews focused on collection of information about existing administrative structures for dealing with safety issues and general informations about existing safety procedures, policies in place. Elements addressed were presence of safety professionals, security force, committees, reporting and use of incident



reports, workers compensation reports, patient and staff safety surveys and OSHA or Joint Commission citations. In addition structures for reporting incidents of violence were identified to see if they are standardized and well understood by clinical staff. The interviews further focused on identification of training programs for personal safety, violence prevention, seclusion and restraint reduction and existence of emergency code system such as code team for violent incidents. Interviews also focused on incident procedures for documentation, counseling, and referral to employee assistance programs (EAP) programs if in place. An environmental audit followed with focus on existing physical and architectural environment and identification of elements contributing to risks of violence. This visual inspection focused on assessment of the degree to which architectural design and facility layout, even furniture placement, may have contributed to the risk of violence. The assessment included building materials and unit décor that could contribute to harm and injury. Pre-intervention data collection using Staff Attitude Questionnaire (SAQ) was completed over one week span. These instructions included how to use, wear and where to find alarm replacements. Any staff questions were addressed in three sessions set up at different times of the day to reach out to all shifts. Post- intervention data collection with additional feedback was conducted over the next two weeks. Finally data was analyzed, interpreted and results presented in a graph format and shared with facility administration, staff and nursing students present at the facility during that time. This project was designed and evaluated by a DNP student, and introduced by the hospital's nursing leadership in collaboration with the facility leadership, under the supervision of the Medical Director and the Director of Nursing services.

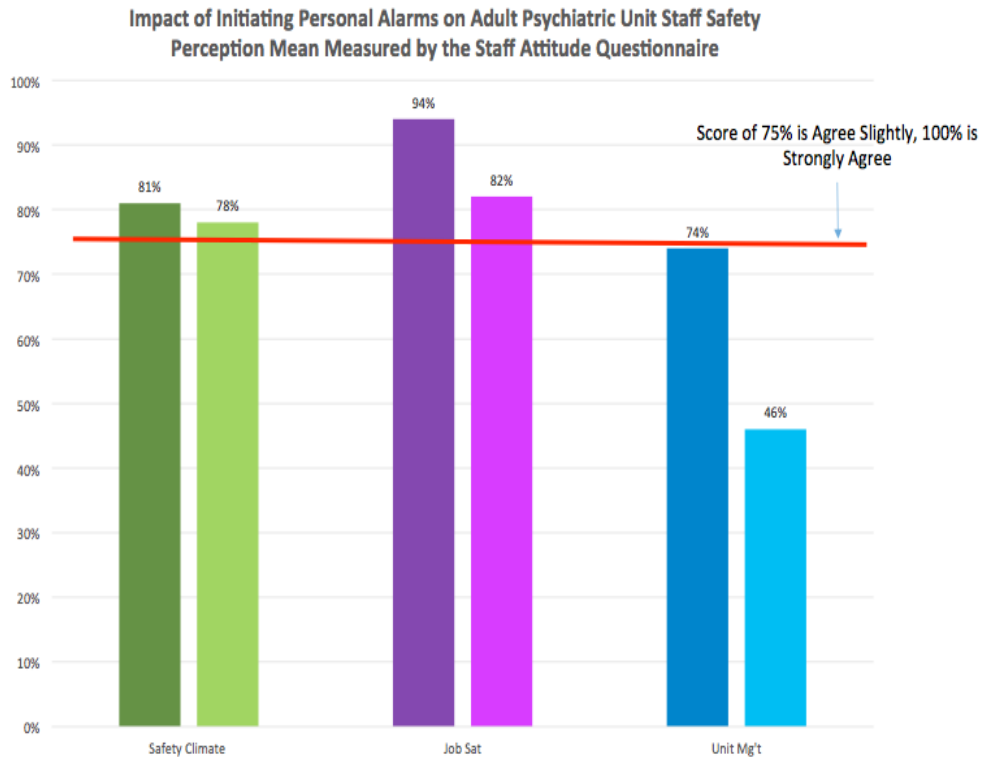
## **Evaluation**

The project was monitored and evaluated using the SAQ Questionnaires pre and post intervention. Additional feedback form containing 5 questions was developed to provide non-scored staff input and was attached to the post-intervention SAQ.

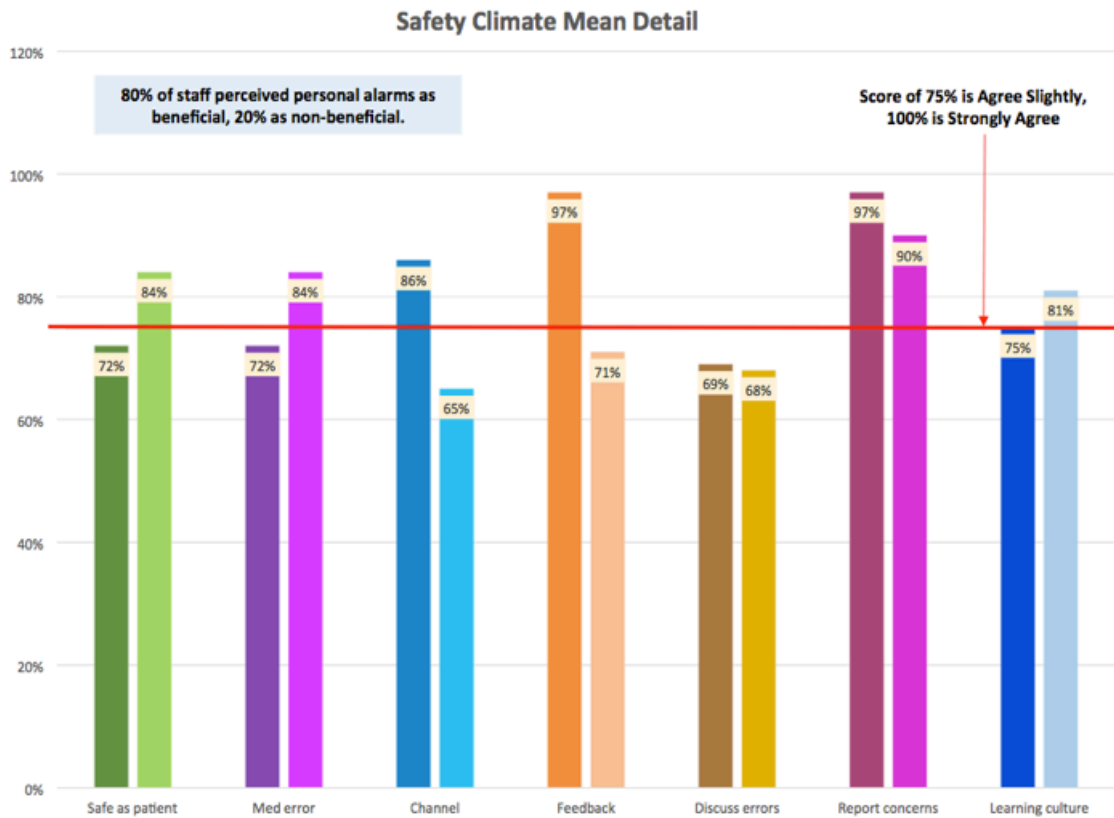
## **Outcomes**

The aim of the project was to increase clinical staff perception of safety by implementing portable personal alarms into clinical settings. Despite the small sample size (n=9 pre-intervention, and n=8 post-intervention) it may be safe to assume it was representative of the whole unit as all three shifts were represented. Although at first glance the results show decrease in three of the six main categories measured by the SAQ, it is necessary to look more closely at each specific question score and the additional feedback form. Based on the 5 question feedback form attached to the SAQ, the concept of personal alarms found acceptance in 80% of clinical staff who participated in the SAQ questionnaire. Remaining 20% of staff reported they did not chose to wear the alarms based on their pre- perceived believe in alarms not having a positive influence on safety. In the realm of Safety Climate, staff responses showed 12% increase in positive attitude when asked if they would feel safe if they were patients on the unit (marked as Safe as Patients on the graph). SAQ also revealed 12% in staff's support of Medical Errors being addressed appropriately on the unit and 6% increase in Learning Culture attitude. There was a considerable decrease noted in the attitudes relating to Communication channels, Receiving feedback and Reporting concerns, all relating directly to management style. This change could have been a result of recent unpopular decisions made by the leadership team, and were not

reflective of response to the introduction of personal alarms themselves. Both Job Satisfaction and perception of Unit Management showed significant decrease in staff's support.



Interestingly, staff found creative alternative uses for alarms to increase personal safety outside of the unit, within the hospital environment, such as utilizing the alarms while off the unit in the parking lot after sundown. In addition, the environmental audit and staff interviews revealed additional safety hazards and concerns, which staff hopes will be taken into consideration by management while implementing future safety interventions.



### **Conclusions and Implications for Practice**

The importance of a violence-free workplace is important in many areas of clinical practice. Early and effective alarm system in response to actual or potential violence allows for prompt interventions. Portable personal alarms have wide application not only in behavioral health settings, but also in general healthcare sites, correctional facilities, and other public and private settings with potential for violent behaviors.

Due to short time of the project further EBP data collection should focus on additional administrative information sets to include workers compensation claims, patient incidents reports, staff and security response logs, the OSHA 300 logs, as well as other data sources to supplement limited information collected in the pilot project.

Literature review suggests patients, their families, and/or interviews with their representatives could be potentially considered to provide insights on sources of frustration and triggers for patient violence (Allen, 2011). This in turn could help prevent high risk occurrences. Workplace violence prevention programs can also benefit from carefully constructed staff safety surveys conducted periodically (Arnetz, 2000). Such information could help to assess the level of verbal and physical violence that is not reported through the formal mechanisms (e.g. incident reports). Focus groups used as tool for assessing the perceptions of direct care staff in terms of the causes of violence, working conditions that may contribute to violence, and the understanding that staff have of safety policies could be considered and implemented. Easiest and ongoing intervention would be to invite direct care staff from all shifts to participate in the walk-around audits with open feedback format. These could ensure that staff concerns and perceptions about the environment are included in the reports and recognize staff's input and ability to have direct part in improving quality of care and increasing safety.

## **Closing Statement**

Through the course of my DNP study at University of San Diego, I have grown personally and professionally. I expanded my skills and knowledge base, and developed higher level or critical thinking and decision making as a health care provider. In addition the doctoral capstone project allowed me to gain understanding of healthcare change process itself, first hand. My project focused on increasing clinical staff's perception of safety in an adult acute care psychiatric settings. This was done by introducing portable personal alarms to the nursing staff and measuring safety attitudes. This was accomplished using the Safety Attitudes Questionnaire (SAQ), a scientifically validated screening tool developed by University of Texas. By taking a proactive approach to promptly alert others of potential or actual danger, and as a result initiate timely response, I strived to improve staff's perceived and actual safety. Thought the completion of the project, I was able to refine certain personal qualities, such as leadership skills and assertiveness. I believe the program has prepared me to accept leadership roles in the current healthcare arena, and play an active part in its dynamic policy and clinical practice changes.

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## Institutional Review Board Project Action Summary

**Action Date:** March 9, 2016

*Note: Approval expires one year after this date.*

**Type:**  New Full Review  New Expedited Review  Continuation Review  Exempt Review  
 Modification

**Action:**  Approved  Approved Pending Modification  Not Approved

**Project Number:** 2016-03-136

**Researcher(s):** Kornelia A Kopec DNP student SON  
Dr. Michael Terry Fac SON

**Project Title:** Improvement of Staff Safety Utilizing a Staff Safety Attitude Questionnaire

*Note: We send IRB correspondence regarding student research to the faculty advisor, who bears the ultimate responsibility for the conduct of the research. We request that the faculty advisor share this correspondence with the student researcher.*

### Modifications Required or Reasons for Non-Approval

None

The next deadline for submitting project proposals to the Provost's Office for full review is N/A. You may submit a project proposal for expedited review at any time.

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Dr. Thomas R. Herrinton  
Administrator, Institutional Review Board  
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**To:** Institutional Review Board, University of San Diego  
**From:** Loralie Woods, MSN, RN-BC  
**Re:** Use of Clinical Data

KORNELIA KOPEC has our support to begin their scholarly practice project at the Sharp Mesa Vista Hospital as part of his/her coursework for the DNP Program at the University of San Diego. Mrs. Kopec has agreed to cleanse all data of any patient or institutional identifiers, and we understand that she will request to use data from this experience for publications and professional presentations.


If you have any questions, please do not hesitate to contact me at [858-836-8736](tel:858-836-8736) or email at [loralie.woods@sharp.com](mailto:loralie.woods@sharp.com)

Sincerely,

A handwritten signature in cursive script that reads "Loralie Woods".

**Loralie Woods MSN, RN-BC**

Manager of Nursing Education  
Sharp Mesa Vista Hospital



## **Certificate of Completion**

The National Institutes of Health (NIH) Office of Extramural Research certifies that **Kornelia Kopeck** successfully completed the NIH Web-based training course "Protecting Human Research Participants".

Date of completion: 03/07/2016.

Certification Number: 2027145.

November 5, 2015

Dear Kornelia Kopec,

You have our permission to use any of the following Safety Attitudes Questionnaires and the corresponding scoring keys:

- Safety Attitudes Questionnaire – Short Form
- Safety Attitudes Questionnaire – Teamwork and Safety Climate
- Safety Attitudes Questionnaire – Ambulatory Version
- Safety Attitudes Questionnaire – ICU Version
- Safety Attitudes Questionnaire – Labor and Delivery Version
- Safety Attitudes Questionnaire – Operating Room Version
- Safety Attitudes Questionnaire – Pharmacy Version
- Safety Climate Survey

Please note, we do not have editable versions for any of the SAQ surveys but feel free to modify the surveys to meet your research endeavors.

Respectfully,

University of Texas at Houston-Memorial Hermann  
Center for Healthcare Quality and Safety Team





Dear Kornelia Anna Kopec, RN, BSN,

This message serves as confirmation that you have agreed to present the following Presentation at 49th Annual Communicating Nursing Research Conference:

Presentation ID: 10832

Title: Prediction and Prevention of Violent Patient Behavior

Session Day/Time: Saturday, April 9, 2016: 08:00 AM - 12:00 PM

Posters will be on display for an entire morning or an entire afternoon. Presenters are asked to be available for the hour designated in the conference schedule for Poster Viewing.

Thank you.

# Staff's Perception of Safety: Adult Psychiatric Hospital Unit



**Kornelia A Kopec, BSN, RN**  
**Michael Terry, DNP, APRN**  
 Associate Clinical Professor/Psychiatric Mental Health Nurse Practitioner Program

## Background

Throughout history behavioral health professionals have tried to effectively assess, accurately anticipate, successfully prevent and promptly respond to violent behavior. Yet violence prediction and prevention remains a complex phenomenon. (Grisso & Applebaum, 1992). Violence prevention and timely response is of utmost importance to healthcare providers who moreover, are required by law to protect third parties against patient violence, as evidenced by the California Supreme Court decision in *Taravoff vs Regents of the University of California* in 1976. The use of personal portable staff alarms in clinical settings allows for fast onset of response system and therefore increases actual and perceived safety.

## Framework/EBP Model

The Iowa Model was utilized for evaluation of EPB Project implementation

## Evidence-Based Intervention/Benchmark

Literature review supports use of portable personal alarms in high risk clinical settings and studies have shown use of shouting, cell phones and whistles are not an effective means of initiating a crisis response.

The Bureau of Labor Statistics estimates that 500 deaths and 1.7 million nonfatal assaults occur each year due to workplace violence across industries

A comparison of pre- and post-intervention survey data found an improvement in perceived violence climate factors, such as management commitment to violence prevention and employee engagement, but no overall change in assault rates (Lipscomb, 2009). Studies found that employees' perception of management commitment to violence prevention was associated with less workplace violence.

Literature review from disciplines including criminology, occupational and public health, adult education, and mental health and psychology employees' perception of management commitment to violence prevention was associated with less workplace violence.

"There's only one environmental control measure that we found that actually makes a difference in the amount of violence in a department, and that is a panic button or silent alarm." (Brecher, 2011)

According to the ENA research, 82 percent of incidents of physical violence actually happen inside a patient's room, and most exam rooms are not outfitted with emergency alarms or panic buttons. Portable panic buttons that can be physically worn on the nurse may provide additional level of protection.

The workplace violence prevention bill, SB 1299: California Occupational Safety and Health Standards Board must adopt standards requiring hospitals to establish workplace violence prevention plans that protect health care workers and other facility personnel from aggressive and violent behavior.

## Purpose

The aim of this project was to introduce portable personal alarms to clinical nursing staff on an adult psychiatric locked unit. The purpose was to measure staff's perceived safety in relation to alarming others of safety concerns by utilizing the device, in hopes of increasing staff's actual and perceived safety.

## Evidence for Problem

Current practice at the Sharp Mesa Vista Behavioral Health does not utilize personal alarms and relies on use of cell phones, voice, yelling and a silent alarm button located at the nursing station. Staff expressed concerns about limited access of the nursing station alarm button and "possibility of attack in 'out of sight areas' and not being able to be heard when calling for help" "being unable to call/yell for help when attacked/choked"/"walking to/from car when dark outside"

## Project Plan Process

Pre-intervention data collection using Staff Attitude Questionnaire (SAQ)

Distribution of instructions to clinical IE staff on:  
 how to use the alarms  
 how to arm and disarm the alarms  
 where to get the alarms  
 wearing the alarms

Distribution of portable personal alarms to all clinical staff of IE Unit

Post-intervention data collection with additional feedback collection

Data analysis, interpretation and presentation of results

## Cost-Benefit Analysis

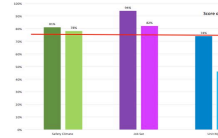
**Pilot project costs**  
 Personal alarms- \$5 per unit/ \$20/Printing of materials and writing utensils provided to staff- 20\$/Other- \$05

**Costs related to sustainability**  
 Replacement of alarms/Staff training- easily rolled into existing CPI training.

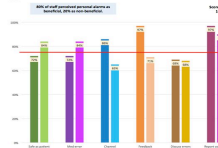
**Savings**  
 Lowered incidences of: staff/patient/visitor injuries, lawsuits, staff retention/recruiting, reputation, patient satisfaction/Student conducted initial survey and pilot project

## Evaluation Results

Impact of Initiating Personal Alarms on Adult Psychiatric Unit Staff Safety Perception Mean Measured by the Staff Attitude Questionnaire



Safety Climate Mean Detail



## Conclusions

Workplace violence, like societal violence, injures communities such as workplaces and takes a demonstrable toll on patients, visitors, and staff. Employers must acknowledge that workplace violence exists and seek system-wide solutions.

Concept of personal alarms found acceptance in majority of clinical staff on the unit/Staff found alternative uses for alarms to increase personal safety

Wearing location of the alarms influenced compliance with project participation

Environmental audit and staff interviews should be taken into consideration by management in implementing safety interventions

Longer pilot project could further validate usefulness of alarms.

Alternative models of alarms should be piloted

## Implications for Clinical Practice

Creating a violence-free workplace is important in many areas. Timely alarm initiation paired with appropriate crisis response and interventions have wide application not only to behavioral health settings, but also in general healthcare arena sites, correctional facilities, and other public and private settings.

Further EBP projects should focus on collection of administrative data sets to include workers compensation claims, patient incidents reports, security response logs, the OSHA 300 logs, and other data sources

Patients, their families, and/or interviews with their representatives may be considered to provide insights on sources of frustration and triggers for violence.

Workplace violence prevention programs can also benefit from carefully constructed staff surveys to assess the level of verbal and physical violence that is not reported through the formal mechanisms (e.g. incident reports).

Focus groups used as tool for assessing the perceptions of direct care staff in terms of the causes of violence, working conditions that may contribute to violence, and the understanding that staff have of safety policies should be considered/inviting direct care staff from all shifts to participate in the walk-around will ensure that staff concerns and perceptions about the environment are included in the report.

**Acknowledgements:** Special thanks to Sharp Mesa Vista Hospital administrative and clinical staff for participation and assistance in project procedures.