

Managing OVA in ED

Development, implementation and evaluation of a process to recognize and reduce aggression and violence in an Australian emergency department

Ainslie Senz MBBS FACEM

Director of Emergency Medicine, Footscray Hospital, Victoria, Australia

Elisa Ilarda BSc MPsych

Project Co-ordinator, Occupational Violence and Aggression Prevention, Safety, Risk and Emergency Management, Western Health, Victoria, Australia

Sharon Klim BN PGDACN (Emerg)

Research Coordinator, Joseph Epstein Centre for Emergency Medicine Research, Western Health, Victoria, Australia

Anne-Maree Kelly MD FACEM

Director, Joseph Epstein Centre for Emergency Medicine Research, Western Health, Victoria, Australia

Word count:

Abstract: 250

Main manuscript: 2184

Figures: 1

Tables: 2

Address for correspondence:

Prof Anne-Maree Kelly

JECMR, Western Health

WHCRE, Sunshine Hospital, Furlong Road, St Albans 3021

Email: Anne-Maree.Kelly@wh.org.au

Author contribution: AS and EI had the concept for the process, all authors designed the implementation and evaluation, analyzed and interpreted data and refined and approval the manuscript.

ABSTRACT

Objective: In 2018, we developed and implemented a novel approach to recognition and response to occupational violence and aggression (OVA). It included routine use of the Brøset Violence Checklist (BVC) for all emergency department (ED) patients integrated with a score-based notification and response framework. This study evaluated the impact of the new process on staff knowledge, perceptions and confidence regarding OVA in ED and the rate of security events related to OVA.

Methods: This study was conducted in a metropolitan hospital ED in Australia. Evaluation was by on-line before and after survey of nursing staff, point prevalence study of risk classification and comparison of OVA-related events involving security in the year before implementation and the year after the program was embedded.

Results: 1% of patients were assessed as high violence risk with a further 4% at moderate risk. The introduction of the BVC increased documentation of violence risk assessment. It also improved staff perception of organisational support and awareness of behaviours associated with risk of violence. There was a statistically significant reduction in unplanned OVA-related security responses (RR 0.75, 95% CI 0.62-0.89). There was also a statistically significant shift to proactive management through early detection and intervention (RR 2.22, 95% CI 1.85-2.66).

Conclusion: A process including routine OVA risk assessment and a notification and response framework reduced unplanned security events due to OVA and increased staff confidence in recognition and management of OVA. This approach may be suitable for use more broadly in ED.

Key words: Occupational violence, risk assessment, behaviours of concern

INTRODUCTION

Managing OVA in ED

Violence is a known and significant problem in healthcare settings. Emergency settings are considered high risk areas with incident rates ranging from 60 to 90%. [1-3] Worksafe Victoria have reported that up to 95% of healthcare workers have experienced verbal or physical assault.[4] A recent systematic review has reported that the pooled incidence of violent patients in emergency departments is 36 for every 10 000 presentations (95% CI 0.0030–0.0043).[5]

The impact from exposure to occupational violence and aggression (OVA) can be significant, with potential emotional, physical, psychological and even financial consequences for the staff, patients and organisation.[6] Moreover, violence directly and indirectly affects the quality of patient care and satisfaction of patient involved, as well as other patients and relatives.[1].

Before our project was commenced, most research into OVA in emergency departments (ED) has focused on management of behavioural crises rather than prevention.[1] Broader violence prevention in healthcare research has found that consumer risk assessment, staff education and aggression management teams reduce OVA.[7] Improving early identification and management of violence risk has the potential to reduce the incidence of crises, reduce the use of restrictive practices, and improve the overall quality of care.[2] It could also improve safety for staff, patients and visitors. Early identification is hampered by the absence of a validated risk assessment and intervention process in ED.

Few studies have evaluated the effectiveness of violence prevention strategies in healthcare environments.[1,8] Research has found clinical prediction tools superior to gestalt for identification of violence risk.[9] The UK National Institute of Clinical Excellence Guidelines recommend the use of actuarial prediction instruments, rather than unstructured clinical judgment alone, to monitor and reduce incidents of violence and aggression and to help develop an early risk management plan.[10] Structured violence risk assessment has predominantly been studied in mental health and forensic settings with tools impractical for

Managing OVA in ED

the ED environment. Of those studied in ED, either effectiveness was not demonstrated [11] or the use of a single, short assessment was considered insufficient.[12]

Several ED-specific risk assessment tools have been reported: STAMP [13], STAMPEDAR [14], and the Violence Assessment Tool (VAT) [15], all of which describe behaviours and factors to alert staff to potential violence. Implementation and validation of these tools have been limited to their initial development. Other commonly used tools, such as the Sedation Assessment Tool [16], are designed to assess adequacy of chemical sedation. This is specifically to assess response to treatment in acute behavioural disturbance, than predict future behavior.

The Brøset Violence Checklist (BVC) [17] is a well-validated (in non-ED settings) six-item instrument that was designed for use in inpatient settings (mainly psychiatric). It uses the presence or absence of three patient characteristics and three patient behaviours to predict the potential for violence within the subsequent 24 hours. A patient scoring 0 is at low risk for violence. A score between 3 and 6 (the maximum) indicates a severe risk of violence, and immediate need for preventive measures or intervention. The BVC has been shown to be more reliable in predicting violence than clinical judgment in inpatient populations.[17-20]. The underlying rationale of this approach is that if the potential risk of violence can be identified, steps to prevent violence and aggression can be instituted to avoid escalation of the risk.[17]

Any clinical utility of an OVA risk score is only as good as response it provokes to prevent OVA. We undertook a project to implement the BVC along with a score-based notification and response process into the clinical environment in ED. This report describes the impact of that new process on staff confidence in identification of 'at risk' patients and initiating a response, staff perceptions of safety in the ED and the rate of security responses to OVA.

METHODS

Managing OVA in ED

Setting: The ED of a metropolitan teaching hospital with an annual census of adult patients of approximately 40,000.

Development of the risk tool and the response process:

Prior to 2018, there was no structured process for OVA risk assessment. The BVC was integrated into the nursing observation chart alongside a management matrix and is locally known as the Behaviours of Concern (BOC) chart (Figure 1). To avoid bias for certain patient cohorts, the BOC chart was commenced on arrival into the treatment area for all patients (including those with dementia, confusion and cognitive impairment) and completed on a regular and ongoing basis at the same time as other vital signs. The study ED uses paper vital sign charts. Vital signs are measured at least hourly in the study ED. Risk is classified as low (score of 0), moderate (1-2) or high (>2). The integrated management matrix outlines suggested multi-disciplinary escalation strategies and interventions, including de-escalation techniques and, if required, pharmacological interventions or physical restraint.

Implementation: The BOC chart was implemented in January 2018 after a program of intensive education for nursing and medical staff, supported by clinical champions.

Evaluation: We used several methods of evaluation:

1. a before-and-after survey of nursing staff focused on knowledge, perceptions, confidence, safety and incidence/ experience of OVA in the ED. Nursing working in ED of Footscray Hospital were approached by email and asked to complete the survey using an anonymous SurveyMonkey®. Two reminder emails will be sent to nursing staff one week, and then two weeks after the initial survey is sent. Survey responses were anonymous. To maximize anonymity given the sensitivity of the survey, matched responses were not collected. Basic demographic data was collected to compare characteristics of the two samples.
2. a before-and-after point prevalence study comparing the proportion of violence risk assessments completed and whether patients rated as low, moderate or high violence risk by nursing staff using gestalt and the BOC chart. De-identified data was collected on random shifts by members of the research team (SK, EI), and away from the patient and their family to protect privacy and confidentiality. No patient was included twice for the same ED

Managing OVA in ED

attendance. Data sources included clinical records and interview with treating nurses. The treating nurse was directly asked if they had undertaken an OVA risk assessment on the patient in question. Irrespective of that answer, they were then asked to rate the patient's OVA risk.

3. a comparison of the rate of security responses to OVA in 2017 (before implementation) and in 2019 (after the process had been embedded). In the study organization, security responses are called 'Code Greys' and classified as planned or emergency (unplanned). A 'Planned Code Grey' is defined as a coordinated clinical and security response to potential OVA with the aim of preventing an incident. In practice, this can involve visible or concealed security presence through to active security engagement, but at no time involves physical contact with the patient. In contrast, an 'Emergency Code Grey' is an emergency response to an OVA incident in progress, and often involves physical restraint. Episodes of mechanical restraint were also collected. Data on these events is routinely entered into an organizational database by security staff attending to OVA incidents into an organization-wide database.

Outcomes of interest: The outcomes of interest were changes in nursing staff knowledge, perceptions and confidence regarding OVA in ED, and the rate of security responses to OVA before and after implementation of the process.

Analysis and sample size: Data were analyzed using comparison of proportions (Chi Square analysis, Fishers Exact Test) using Vassar Stats.[21] Relative risk of emergency and planned code grey responses was calculated using Vassar Stats.[22] Absolute risk reduction was calculated the University of Illinois Chicago calculator.[23] As was an observation study, no sample size calculation was performed. If the rate of emergency code grey responses is considered the primary outcome, post-hoc power calculation shows that a sample of 39,000 in each group has 95% power to detect a change in the rate of emergency code grey episodes from 0.7% to 0.5%.[24]

Ethics approval: This project was approved as a quality improvement project under the National Health and Medical Research Council guidelines by the Western Health Low Risk Ethics Panel (WHLREP QA2017.87).

RESULTS

Nursing Staff Survey

The pre-implementation survey was completed by 76 nurses and the post-implementation surveys by 83 nurses, with no differences in staff demographics between surveys. (Table 1)

In both surveys >70% of staff reported being subjected to verbal or physical aggression/violence in the ED in the previous month. There were statistically significant improvements in confidence in, and performance of, risk screening, as well as perception of organisational support, but no change in confidence to prevent violence or feelings of safety. (Table 1)

Point Prevalence Study

Data on 250 patients was collected in each of the pre-and-post point-prevalence data sets. Documented risk of violence assessment increased from 30% to 82%, ($p < 0.0001$). For the subset of patients with a mental health or drug and alcohol presentations, the proportion with a documented violence risk assessment increased from 54% to 100% (7/13 v 13/13; $p = 0.014$). There was no difference in the distribution of assessed risk (low, moderate, high) between the two time periods ($p = 0.25$), with overall 1% being assessed as high violence risk, 4% as moderate risk and 95% as low risk. (Table 2)

Rate of security responses to OVA

The rate of planned and unplanned (emergency) security responses to OVA is shown in Table 2. In both study years, mental health presentations accounted for just over 6% of ED presentations. The proportion of patients brought to ED under the provisions of the *Mental Health Act 2014* (Vic) increased from 0.9% to 1.2% ($p < 0.001$). We found a clinically and statistically significant reduction in Emergency Code Greys (Relative Risk 0.75, 95% CI 0.62 – 0.89, $p = 0.001$; absolute risk reduction 0.18% (95% CI 0.07-0.29%)). We also found a statistically significant increase in Planned Code Greys (Relative Risk 2.22, 95% CI 1.85-2.66,

$p < 0.001$). We found no reduction in the proportion of patients undergoing mechanical restraint, although numbers are small and this project was not powered for this outcome.

DISCUSSION

Prior to this study, risk assessments for violence in the study ED were performed infrequently and subjectively, and only once the situation had deteriorated, leaving limited opportunity for prevention. International guidelines recommend a structured approach to the assessment of the risk of violence [11] but this approach is uncommon in ED. At the outset of our project, no assessment instrument had been validated in the ED setting.

To our knowledge, this is the first implementation of the BVC into existing ED systems. Although designed for use on inpatient psychiatric wards, it has been extensively validated [17-19], and was chosen based on high face validity and simplicity for the dynamic ED environment. The authors considered that risk of violence was different to assessment of agitation and sedation during a behavioural crisis.

The introduction of the BOC chart made a statistically significant improvement in the documentation of violence risk assessment for all patient groups. The tool also improved staff perception of organizational support, and awareness and knowledge of behaviours associated with risk of violence. The ability of clinical staff to assess risk objectively and respond proactively was associated with statistically significant changes in security responses. The significant reduction in unplanned OVA-related security events affirms the concept that early detection and intervention have the potential to reduce behavioural crises. Although not yet statistically significant, the apparent trend in reduction of mechanical restraint events supports this further. The significant increase in planned OVA interventions further supports a move to early and proactive intervention. Together these are likely to improve safety for staff and patients in the ED, a theory that is supported by the absence of notifiable incidents since implementation.

Managing OVA in ED

We propose these changes are due to a number of factors. The structured assessment removed the element of subjectivity in assessments based on clinical experience, confidence and tolerance. It created a standardized language around communication and escalation. The integration into normal processes enhanced implementation and consistency. The application of the process to all patients removed any bias, and regular and ongoing measurements allowed early detection before crisis point. The link to escalation actions for each risk group empowered bedside nurses to implement strategies to prevent violence. It also promoted a shared understanding between nursing and medical staff about violence risk and proactive interventions. The study supports the view that a well validated violence risk assessment can be adaptable and useful in an ED setting.

Prior to 2018, the BVC had never been studied in an ED setting. Since then, Partridge et al. explored the utility of the BVC when performed at triage by a designated hospital security officer in a metropolitan ED in Queensland, Australia. The results showed that patients who were subsequently violent were 71.4 times more likely to have a high risk BVC score (>2) compared to those who were not. [25] This further supports the utility of the BVC tool.

The application of the tool and the response process to the broad ED population, rather than just those with overt mental health and alcohol drug presentations, might be questioned. We believe this broad application is important. Reasons include that OVA risk is dynamic and process issues like delays and access block can increase OVA risk in the absence of mental health or drug issues. Mental health and drug issues are not always initially obvious. Other groups such as those with dementia, confusion or cognitive impairment can be an OVA risk that may be under-appreciated. Recognition of that risk prompts a multidisciplinary response aimed at staff and patient safety while mitigation strategies are developed. For patients with dementia, confusion or cognitive impairment this might include environmental modification and use of a patient observer.

LIMITATIONS

Our findings have some limitations that should be considered when interpreting the results. This study was not designed to show superiority of the BVC over other tools, nor formally validate the BVC in an ED setting. The survey was voluntary and anonymous, and non-responders may have had different views to those that responded. The point prevalence survey could have been influenced by available case-mix, however we believe that our methodology reduced the chance of bias. Security response data was collected from an administrative database which relies on accurate case classification. The study ED is in a metropolitan teaching hospital without an inpatient psychiatric service and has a relatively low rate of security incidents overall. Other ED may have different thresholds for activating security responses. These factors may limit generalizability of our results. As a before and after study, this study cannot account for other system changes that occurred during its conduct, such as OVA events in the study ED and reports of OVA events in the media. This may have influenced uptake of the chart.

This is one of very few studies to implement a violence risk assessment tool routinely in the ED, and the only known study showing the practical usefulness of the BVC in reducing violence in this setting. In the study ED, violence assessment is now comparable to a vital sign. It is measured on all patients on a routine and ongoing basis, at the same time as other vital signs, is communicated with a standardized language, and has defined escalation triggers with matched interventions. Since implementation, the OVA occupational health and safety risk rating of the study ED has fallen from 'extreme' to 'moderate risk'. This, along with the trends described, has prompted the health service involved to implement the BVC into all inpatient areas, and there is pre-hospital interest in the BVC as an assessment tool. We continue to refine our processes, and encourage other health services to explore the concept of a structured assessment tool to provide a framework for early identification of risk and a move to proactive management and potential risk reduction.

CONCLUSION

A process including routine OVA risk assessment and a notification and response framework reduced unplanned security events due to OVA and increased staff confidence in recognition and proactive management of OVA. This approach may be suitable for use more broadly in ED.

ACKNOWLEDGEMENTS

Acknowledgements are extended to all nursing, medical, and security staff of the Footscray and Sunshine Emergency Departments at Western Health and to the members of the ED OVA working group.

CONFLICTS

Prof AM Kelly is a member of the editorial board of *Emergency Medicine Australasia*.

REFERENCES

1. Lau JB, Magarey J, McCutcheon H. Violence in the emergency department: A literature review. *Aust Emerg Nurs J*.2004; 7:27-37.
2. Cabilan C, Johnston AN. Review article: Identifying occupational violence patient risk factors and risk assessment tools in the emergency department: A scoping review. *Emerg Medi Australas*. 2019;23:730-740.
3. Gacki-Smith J, Altair JM, Boyett L, Homeyer C, Robinson L, MacLean SL. Violence Against Nurses Working in US Emergency Departments. *J Nurs Adm* 2009;39:340-349.

Managing OVA in ED

4. *Worksafe Victoria*. (2011, May). Its Never OK: Violence and aggression in Health care. <https://www.worksafe.vic.gov.au/itsneverok> (Accessed 13 October 2020)
5. Nikathil S, Olausson A, Gocentas R, Symons E, Mitra B. Workplace violence in the emergency department: A systematic review and meta analysis. *Emerg Med Australas* 2017; 29, 265–275
6. Ferns T. Violence in the accident and emergency department. *Accid Emerg Nurs*. 2005;13:180-185.
7. Morphet J, Griffiths D, Beattie J, Velasquez Reyes D, Innes K. Prevention and management of occupational violence and aggression in healthcare: A scoping review, *Collegian* 2018; 25:621-632.
- 7.
8. Taylor J, Rew L. A systematic review of the literature: workplace violence in the emergency department. *J Clin Nurs*. 2010;20:1072-1085.
9. Ogloff JR, Daffern M. The dynamic appraisal of situational aggression: an instrument to assess risk for imminent aggression in psychiatric inpatients. *Behav Sci Law*. 2006;24:799-813.
10. National Institute for Clinical Excellence. Violence and aggression: short-term management in mental health, health and community settings. 2015. www.nice.org.uk. (Accessed 25 September 2018).
11. Daniel C. An evaluation of violence risk screening at triage in one Australian emergency department (Dissertation). Melbourne: The University of Melbourne, 2015.
12. Kling, R., Corbiere, M., Milord, R. et al. Use of a violence risk assessment tool in an acute care hospital. *AAOHN Journal*. 2006;54:481-887.
13. Luck, L., Jackson, D., Usher, K. STAMP: components of observable behaviour that indicate potential for patient violence in emergency departments. *J Clin Nurs*. 2007;59:11-19.

Managing OVA in ED

14. Chapman, R., Perry, L., Styles, I., & Combs, S. Predicting patient aggression against nurses in all hospital areas. *Br J Nurs*. 2009;18: 476-483.
15. Wilkes, L., Mohan, S., & Jackson, D. Development of a violence tool in the emergency hospital setting. *Nurse Researcher*. 2010;17:70-82.
16. Calver L, Stokes B, Isbister G. Sedation assessment tool to score acute behavioral disturbance in the emergency department. *Emerg Med Australas* 2011; 23:732-740.
17. Almvik R, Woods P. Predicting inpatient violence using the Brøset Violence Checklist (BVC). *Inter J Psych Nurs Res*.1999;4:498–505.
18. Björkdahl A, Olsson D, Palmstierna T. Nurses' short term prediction of violence in acute psychiatric intensive care. *Acta Psych Scand*. 2005;113:224–229.
19. Almvik R, Woods, Rasmussen K. The Brøset Violence Checklist: sensitivity, specificity, and interrater reliability. *J Interpersonal Violence* 2000;15:1284–1296.
20. Alderhalden C, Neeham I, Dassen T, et al. Predicting inpatient violence using an extended version of the Brøset Violence Checklist. *BMC Psychiatry*. 2004;6:17.
21. Vassar College. <http://vassarstats.net/tab2x2.html>; Accessed 13 October 2020
22. Vassar College. <http://www.vassarstats.net/vsclin.html>. 13 October 2020
23. University of British Columbia. Inference for Proportions: Comparing Two Independent Samples. <https://www.stat.ubc.ca/~rollin/stats/ssize/b2.html> (Accessed 13 October 2020)
24. Risk reduction calculator. < <http://araw.mede.uic.edu/cgi-bin/nntcalc.pl>> (Accessed 14 October 2020)
25. Partridge B, Affleck J. Predicting aggressive patient behaviour in a hospital emergency department: An empirical study of security officers using the Brøset Violence Checklist. *Australasian Emergency Care*. 2018;21:31-35.

Figure 1: Behaviours of Concern assessment table.

Managing OVA in ED

| BEHAVIOURS OF CONCERN OBSERVATIONS (On arrival, half-hourly until MO, then hourly as for other observations) | | | | | | | | | | | | | |
|--|--|--|--|--|--|--|--|--|--|--|--|--|-------|
| Score of 0 or 1 for behaviour | | | | | | | | | | | | | TIME: |
| CONFUSED Obviously confused or disorientated | | | | | | | | | | | | | |
| IRRITABLE Easily annoyed or angered, intolerant | | | | | | | | | | | | | |
| BOISTEROUS Overtly noisy, shouts, slams doors | | | | | | | | | | | | | |
| PHYSICAL THREATS Threatening or intimidating stance or gestures | | | | | | | | | | | | | |
| VERBAL THREATS Threatening or intimidating language | | | | | | | | | | | | | |
| ATTACKING OBJECTS Kicking, hitting, throwing, damaging objects | | | | | | | | | | | | | |
| TOTAL SCORE (Maximum of 6) | | | | | | | | | | | | | |

| MANAGEMENT MATRIX | SCORE = 0 | SCORE = 1-2 | SCORE >2 |
|---------------------|---|--|--|
| | | Risk of Violence: SMALL ●No required interventions | Risk of Violence: MODERATE ●Consider preventative measures |
| GENERAL | ●Continue regular observations ●Search EDIS (and Bossnet) for alerts for behaviours of concern | ●Ensure personal safety ●Call for help if required ●Consider more appropriate location and additional staff - security/special ●Consider Code Grey if appropriate | As for moderate PLUS ●CALL CODE GREY ●Notify admitting team of clinical risk ●Document incident including triggers and management |
| NURSING | ●Notify NIC if previous alerts for behaviours of concern ●NIC: Notify security | ●Notify NIC & ED Medical Officer ●Request PRN medications to be charted by ED Medical Officer if not already ●Offer oral medications | ●Attempt verbal deescalation if safe ●Offer oral medications if appropriate |
| MEDICAL (ED) | ●Consider charting PRN medications for patients at risk of BOC: previous alerts, pre-hospital BOC | ●Chart PRN medications for all patients displaying BOC ●Assist nursing with preventing escalation | ●Attempt verbal deescalation if safe ●Offer oral medications if appropriate ●Consider IV/IM sedation if unsuccessful ●Follow Rapid Sedation Guideline |
| SECURITY | ●Be aware of all patients with alerts for behaviours of concern | ●Increase presence ●Liaise with bedside nurse regularly | ●Attend Code Grey & provide assistance as required ●Provide mechanical restraints as requested ●Document incident |

Table 1. Staff survey results

| Question | Pre-survey | Post survey | p value |
|---|---|---|---------|
| | N, % | N, % | |
| Age group | | | |
| 20-30 | 31, 41% | 36, 52% | 0.46 |
| 31-40 | 22, 29% | 16, 23% | |
| 41-50 | 14, 18% | 15, 21% | |
| >50 | 9, 11% | 3, 4% | |
| Female gender | 63, 83% | 57, 81% | 1 |
| Years of nursing experience | | | |
| <5 | 18, 24% | 27, 39% | 0.29 |
| 5-10 | 27, 35% | 20, 28% | |
| >10 | 31, 41% | 23, 33% | |
| Response rate* | 76/110 (69%) | 70/110 (64%) | |
| | Percent reporting agree or strongly agree | Percent reporting agree or strongly agree | |
| I screen for violence risk in my patients | 66/74 (89%) | 69/70 (99%) | 0.03 |
| I am confident in my ability to assess risk of violence in patients | 62/76 (82%) | 64/70 (91%) | 0.04 |
| I feel supported by my organization in managing violence in the ED | 37/76 (48%) | 44/70 (63%) | 0.04 |

* Nursing staff total compliment is approx. 110 but there may be minor fluctuation due to annual leave, etc.

Table 2. Point prevalence survey data

| | Pre-implementation survey | Post -implementation survey | p value |
|---|----------------------------------|------------------------------------|----------------|
| Age (Median, IQR, range) | 68, 47-81, 19-97 | 56, 39-74, 18-95 | |
| Male gender (N, %) | 140, 56% | 140, 56% | 1 |
| Classification based on initial assessment (N, %) | | | |
| Mental health | 6, 2.4% | 10, 4% | 0.16 |
| Alcohol or drugs | 7, 2.8% | 3, 1.2% | |
| Other | 237, 94.8% | 237, 94.8% | |
| Known recent head injury (incl. fall with head strike) (N, %) | 10, 4% | 14, 5.6% | 0.53 |
| Known dementia/cognitive impairment/ confusion (N, %) | 11, 4.4% | 11, 4.4% | 1 |
| Assessment of OVA risk performed (N, %) | 74, 29.6% | 206, 82.4% | <0.001 |
| OVA risk assessment (N, %) | | | |
| Low | 233, 93,2% | 241, 96.4% | 0.25 |
| Moderate | 13, 5.2% | 7, 2.8% | |
| High | 4, 1.6% | 2,.8% | |

Table 3. Security Responses to OVA

| | 2017 | 2019 | p value |
|---|-------------|-------------|----------------|
| Total attendances | 39718 | 43226 | |
| Mental health presentations (N, %)* | 2589 (6.5%) | 2715 (6.3%) | 0.17 |
| Police Mental Health Act presentations (N, %)*# | 341 (0.9%) | 519 (1.2%) | <0.001 |
| Emergency Code Greys (N, %)* | 289 (0.73%) | 237 (0.55%) | 0.001 |
| Planned Code Greys (N, %)* | 163 (0.41%) | 394 (0.91%) | <0.001 |
| Mechanical Restraint use (N, %)* | 75 (0.19%) | 61 (0.01%) | 0.11 |

*percentage of total presentations

Some overlap with mental health presentations