SAFEWARDS in Acute Care

Evaluation of the adaptation and impact of SAFEWARDS in Acute Care Wards

Final Report | December 2022

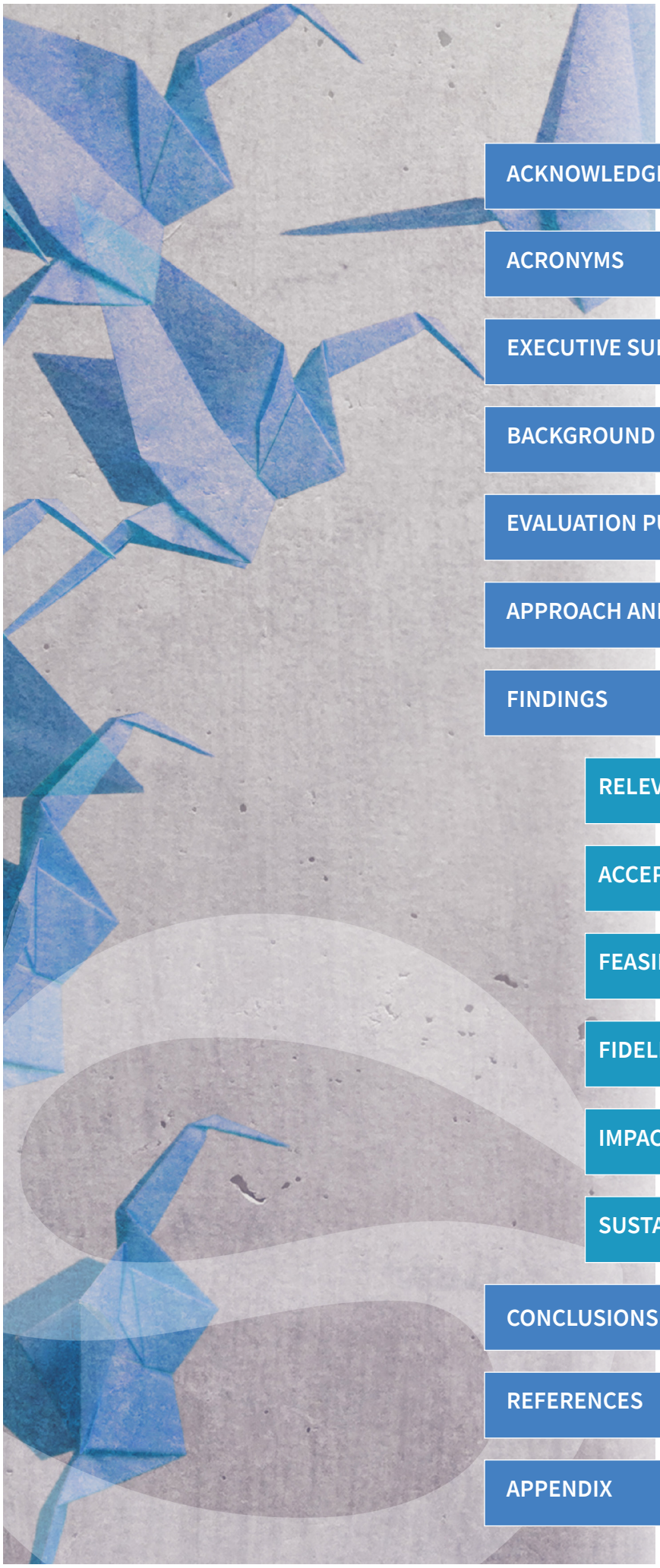
Dr Celene Yap, Dr Cathy Daniel, Prof Marie Gerdtz
University of Melbourne | Department of Nursing
Funded by the Safer Care Victoria and the Victorian Managed Insurance Authority

ISBN: 978 0 7340 5703 7

THE UNIVERSITY OF MELBOURNE

CONTACT

For all enquiries regarding this report please contact Chief Investigator, Professor Marie Gerdtz, Department of Nursing, The University of Melbourne at: gerdtzmf@unimelb.edu.au



ACKNOWLEDGEMENTS

This evaluation was supported by funding from the Safer Care Victoria and the Victorian Managed Insurance Authority.

The Statistical Consulting Centre (SCC) at The University of Melbourne were engaged to undertake analysis of the impact of the Safewards interventions on conflict events and coercive interventions over time. We gratefully acknowledge the work of Associate Professor Graham Hepworth and Dr Christian Davey from the SCC for their analysis of these outcomes.

Finally, the evaluation team gratefully acknowledge the outstanding support and invaluable contribution of the Safewards project coordinators at the study sites Elisa Ilarda, Lisa Spong, Jessica Stergiou, and Yolanda Kosach along with the staff working at the implementation sites for their time and commitment to this project.

ACRONYMS

Term	Definition
ANUM	Assistant Nurse Unit Manager
CCU	Cardiac Care Unit
COVID	Coronavirus Disease
ED	Emergency Department
EMR	Electronic Medical Record
NUM	Nurse Unit Manager
OECD-DAC	Organisation for Economic Co-operation and Development's Development Assistance Committee
SAQ	Safety Attitudes Questionnaire

EXECUTIVE SUMMARY

BACKGROUND

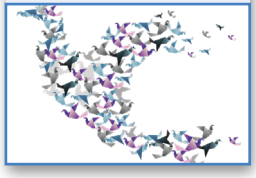
Safewards is a model of practice improvement that has previously been trialled to promote a therapeutic response to **minimise conflict events in mental health in-patient wards and emergency departments**. This project (Safewards Acute Care) piloted the innovative strategies to implement Safewards interventions in four acute care wards within two metropolitan health services in Victoria, Australia.

Due to workforce shortages and increased staff pressure caused by Omicron outbreak during project implementation phase, four instead of ten Safewards interventions were selected to be trialled in this pilot project. These four interventions (Know Each Other, Neat, Smart and Tidy, Calming Methods, and Meaningful Messages) were considered most relevant to both patients and staff, and highly favourable based on the feedback received from staff focus group.

The evaluation was conducted to examine how four Safewards interventions including the design and implementation strategies were relevant, acceptable, feasible, impactful, and sustainable in acute care wards. Both quantitative and qualitative data were collected using mixed-method approach.

Know Each Other

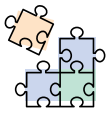
Neat, Smart & Tidy



Calming Methods

Meaningful Messages

KEY FINDINGS



Relevance and Acceptability

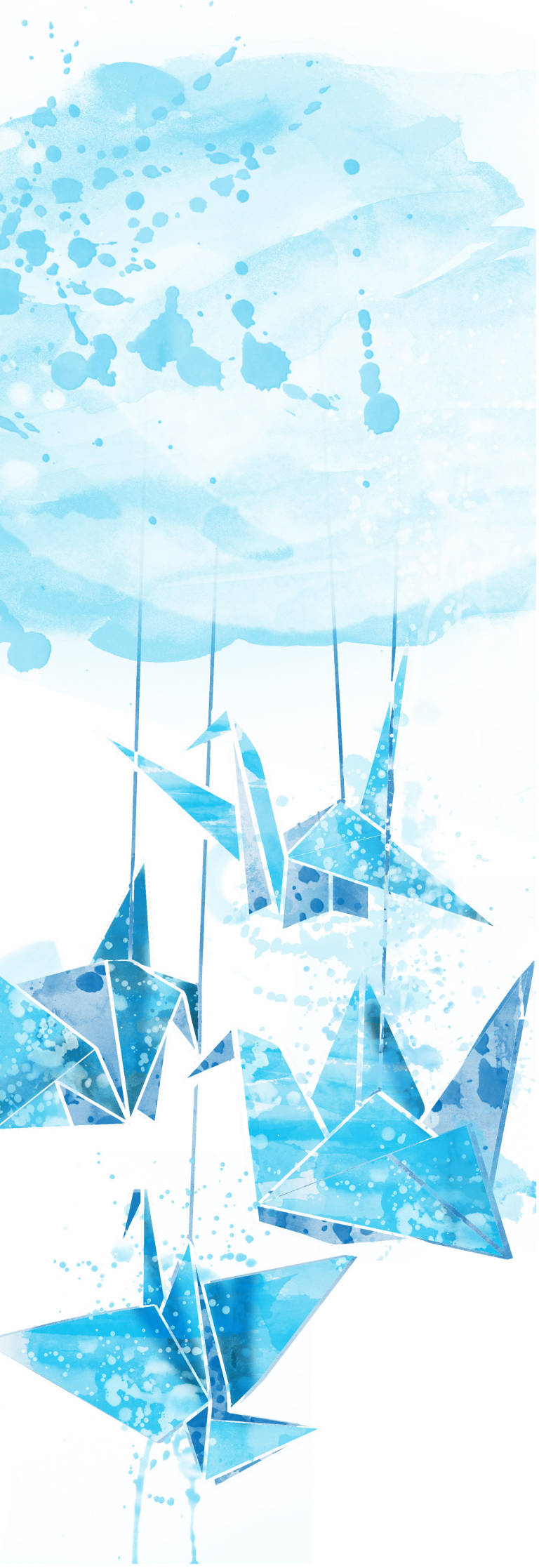
- The four Safewards interventions were clearly **relevant for patients and staff**, targeting identified gaps in managing conflicts in the acute care wards.
- COVID-19 related adaptations in the project were also relevant to the **rapidly shifting context** in the hospitals.
- The Safewards model and the four Safewards interventions were highly acceptable because they were **aligned with the delivery of compassionate nursing care**, which in turns align with the goals of the health services to provide high quality of care and to create a safe working environment for healthcare workers.

Fidelity and Feasibility

- Despite many challenges associated with project planning, and implementation within the context of COVID-19, this pilot project achieved **high fidelity**. All pre-defined key indicators of implementation (refer Table 6) for the four Safewards interventions were achieved in three out of four of the participating wards.
- Online training modules were effective in reaching highly motivated staff, **but face-to-face in-service education** were highly preferable by majority of the staff.
- The pilot project's success was driven in part by the team's flexibility in allowing the ward staff to **adapt the interventions to meet the needs of the ward**, strong collaboration and communication within the leadership team at the ward.
- Key challenges during the implementation included the **impacts of COVID-19** on staff attitudes on making changes and time pressure in meeting the needs of increased bed demands, the reduced opportunity to have sufficient trainings for the Safewards model, and the increased complexity in meeting infection control.

Impact

- While there was some resistance among staff at the beginning of the project, the intended **short-term outcomes were achieved** during the evaluation period. Focus group participants were aware of the four Safewards interventions and reported **high motivation to apply these Safewards interventions** in their clinical practice after first week of implementation.
- The targeted **medium-term outcomes** for this pilot project included **(1) rate of conflict and containment reduced; (2) positive experience reported by patients and carers; and (3) ward safety climate improved.** In this evaluation, qualitative evidence indicated that all three medium-term outcomes were achieved. However, due to low official incident report rates for aggression and the use of restrictive interventions in the participating wards during the 12-month evaluation period, there was insufficient evidence of a significant difference in the number of aggression and assault incidents, security response and specialling requests between Safewards participating wards and control ward at both sites before and after implementing the Safewards interventions. Hence, more data are required in future evaluations to determine the true effect of these interventions on the rates of conflict and containment.
- During patient interviews, participants reported increased interaction with staff and other patients in the ward, which had **positive impacts on their experience of care**.
- Importantly, there were numerous qualitative reports from focus group participants at different participating wards regarding a **reduction in aggression incidents** due to the implementation of the Safewards interventions, and an increased sense of job satisfaction among nursing staff.
- We found **no unintended and negative consequences** after all four Safewards interventions were implemented in the participating wards.



Sustainability

- There is clear evidence of increased acceptability, **commitment to integrate the Safewards interventions** into their clinical practice, and ownership of the project at each participating ward.
- Crucially, there is a strong **commitment of the ward leadership team** to sustain the Safewards interventions implementation and education in the ward beyond this pilot project.

CONCLUSION

During the 12-month evaluation period, four Safewards interventions were successfully implemented in three out of four participating wards despite unpredictability, staff shortages, and staff burnout during the COVID-19 pandemic. Overall, both ward leadership team and frontliners agreed that the Safewards Model and the adapted interventions were highly relevant and acceptable in the acute care wards.

Despite the initial resistance, both short-term outcomes were achieved, i.e., staff were motivated to apply the Safewards interventions and to learn more about it. As for the medium-term outcomes, while there was insufficient quantitative evidence to indicate that these four interventions could reduce the rate of conflict and containment, qualitative evidence gathered from the focus groups showed that Safewards interventions were considered beneficial to improve patient quality of care and staff wellbeing, specifically the ‘Calming Methods’ and ‘Neat, smart and tidy’ interventions.

During patient interviews, participants expressed positive attitudes about the Safewards interventions and highlighted some of the positive experience they had with the interventions, despite not knowing the intervention is part of the Safewards pilot project. While this pilot project only trialled four out of ten suggested Safewards interventions, there is a strong commitment of the ward leadership team to sustain implementation of the four Safewards interventions; and to implement the remaining six Safewards interventions beyond the pilot project.

FUTURE RECOMMENDATIONS

- Additional conflict and containment incident data using customised research data collections tools would have been ideal to strengthen the findings of future studies.
- When time commitment and resources are limited, interventions that are highly relevant and acceptable to staff (e.g., calming methods) should be prioritised to sustain staff engagement and to motivate staff to learn more about the Safewards Model and other interventions.
- Interventions could be further refined by improving accessibility for patients with limited mobility, with disability, hearing and/or vision impaired.
- A hybrid learning model utilising both online modules, informal small group mentoring, and in-person in-service training sessions will be more effective to reach majority of the target audiences.
- In-person refresher course during in-service for Safewards model will reinforce staff understandings of the concept and theory behind the model, which will strengthen and sustain staff engagement.
- An integrate education system to 1) continuously remind staff about the interventions, and 2) educate new or short-term staff about the Safewards interventions, is crucial to sustain the implementation.
- A multidisciplinary team involvement will allow the intervention to be integrated as part of the ward culture and promote sustainability.
- By incorporating Safewards interventions as part of the routine documentation in the Electronic Medical Record (EMR), staff can share information regarding useful tips to de-escalate patients e.g., which calming method tool works particularly well to calm the patient down.
- Current implementation is highly nursing staff driven, a mechanism to promote involvement among patients or carers in the interventions e.g., encourage patients or carers to complete the Know Each Other profile themselves, will greatly enhance the effectiveness and sustainability of the implementation.
- A repeated evaluation in 12 month-time would be able to provide useful information on medium- and long-term impacts as well as sustainability.

BACKGROUND

PROJECT OVERVIEW: SAFEWARDS ACUTE CARE

In the last decade, there has been a significant increase in research and development of interventions to prevent and minimise workplace aggression in the healthcare setting. Most of the interventions generally have a specific target, for example, education and training, organisational interventions, or workplace design[1]. In contrast, Safewards model is a set of holistic prevention and intervention strategies (35Thttps://www2.health.vic.gov.au/safewards35T), developed to promote a therapeutic response to minimise conflict and containment, thereby optimising the safety of both staff and patients[2, 3]. Promising findings indicating a positive impact of the Safewards model on conflict and containment in acute mental health inpatient units have been reported in United Kingdom[4], Australia[5], Denmark[6], and Germany[7].

In 2019, the Safewards ED pilot project was proposed to support staff to develop the skills to reduce triggers that result in conflicts and containment. The adaptation of Safewards interventions is not limited to patients who require mental health assessment and care, but also to improve the overall experiences of care in the emergency department (ED) for all patients, regardless of clinical presentations and diagnosis. In the Safewards ED pilot, positive outcomes observed including reduction rate of 29% in code grey events, improved communication skills and collaboration between staff and patients, and significantly fewer medications were administered to manage aggressive behaviour [8].

Whilst there are positive outcomes reported in the mental health and the ED settings, the applicability and acceptability of this model in acute care is yet to be determined. Hence, this evaluation aims to determine the implementability and impact of Safewards interventions in four acute care wards in Victoria, Australia. The outcomes of the evaluation of this pilot project will provide key stakeholders with the critical information needed to understand the impact of the interventions on the ward safety climate and patient experience of care; and valuable insights into the challenges and facilitators of implementing the Safewards model in acute care wards.

There is no previous study reporting the use of Safewards interventions in acute care wards. An advisory group including the Safewards educators, evaluation team, project coordinators, and nurse unit managers (NUMS) was established to decide on the Safewards interventions to be implemented. Ten modified Safewards interventions **(Table 1)** were recommended to be adapted to the acute care wards. However, due to Omicron outbreak during the implementation phase, only four Safewards interventions (Know Each Other, Neat, Smart and Tidy, Calming Methods, and Meaningful Messages) were piloted during the evaluation period (please refer to Feasibility section for further information).

Table 1. Description of Recommended Safewards Interventions for the Acute Care Wards

Intervention	Description
Know Each Other	**Patients and staff share some personal interests and ideas with each other, displayed in unit common areas.**
Neat, Smart and Tidy	**Part of the way the staff convey a message about how efficient and effective they are via the cleanliness and tidiness of the ward/unit. This initiative aims to make the ward more properly reflect the efficiency of the team that works there.**
Calming methods	**Staff support patients to draw on their strengths and use/learn coping skills before the use of PRN medication or containment.**
Meaningful messages	**On the day of their discharge (or in the days leading up to discharge), each patient is asked to write a card for display on a discharge message board on the ward. The card should say what they liked about the ward, the staff and what occurred on the ward during their stay. It should also include their most positive and helpful piece of advice for new patients. The card should be placed on the discharge message noticeboard. New patients can be shown these messages for reassurance and to increase feelings of hope.**
Clear Mutual Expectations	Patients and staff work together to create mutually agreed aspirations that apply to both groups equally.
Positive Words	Staff say something positive in handover about each patient. Staff use psychological explanations to describe challenging actions.
Reassurance	Staff touch base with every patient after every conflict on the unit and debrief as required. Reduces the effects of distress arising from other conflict.
Bad News Mitigation	Staff understand, proactively plan for, and mitigate the effects of bad news received by patients.
Respectful Communications	Staff take great care with their tone and use of collaborative language. Staff reduce the limits faced by patients, create flexible options, and use respect if limit setting is unavoidable.
Talk through	De-escalation process focuses on clarifying issues and finding solutions together. Staff maintain self-control, respect & empathy.

Implementation sites

This pilot project was conducted at **two metropolitan public health services** at Victoria from **September 2021 to November 2022**. At the commencement of the project, the model of care had been mapped based on consultations with the ward NUMs.

Each site has **two participating wards in two different hospitals, and one control ward** (no intervention implemented in the control ward). The participating health services received funding to develop and implement this pilot project as part of the quality improvement initiatives. Each site appointed two project coordinators to oversee the project implementation. Nursing staff were assigned to lead the project implementation at each participating ward.

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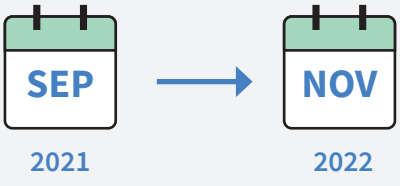


Where

SITE 1

Ward A

Ward A is a 28-bed mixed medical and surgical ward with capacity for cardiac monitoring. The unit provides care for a diverse range of patients with general medical, surgical, and gynaecological conditions. Patients with heart failure, syncope and eating disorders are also located on this ward. There is a total of 70 staff on the ward making up the nursing, medical, support services and clerical teams.

Ward B

Ward B is a 30-bed secured geriatric evaluation and management unit which admits patients with challenging behaviours related to dementia, delirium, acquired brain injury, hepatic encephalopathy, and disability. These patients are admitted for rehabilitation and often required to stay for an extended period of time. Patients ranging in age from 39-100 years old. There are 4 doctors, 9 allied health, 4 diversional therapists, a music therapist, a ward clerk and 3 patient services assistants. There are approximately 30 nursing staff rostered across the week.

Control Ward

The control ward is a 28-bed ward paired with oncology and haematology units. The unit has the multidisciplinary team of medical, nursing, allied health, and support staff to provides care in all aspects of geriatric medicine (for population over 65 years old), including but not limited to delirium, dementia, and changed behaviours secondary to dementia. There are approximately 50 nursing staff with varying specialty knowledge and interest.

SITE 2

Ward C

The subacute aged care ward operates 36- beds for patients requiring acute aged care. This unit admits patients with challenging behaviours related to dementia or delirium, elderly patients who have had a fall, fractures that not requiring operative intervention, functional decline, or difficulty in managing in current living arrangements. The unit operates an inter-professional practice model in partnership with geriatric medicine, nursing, allied health, ancillary services, and the volunteer team, caring for elderly patients with multi-morbidity frailty and/ or disability that benefit from a multi-disciplinary team approach to their care.

Ward D

Ward D is a 20 -bed cardiac care unit comprising of six acute beds and 14 telemetry beds. The unit provides care for patients with acute coronary syndromes, heart failure, valve disease, arrhythmias, and for those patients having undergone cardiac procedures such as angiogram/angioplasty and pacemaker insertion. There are approximately 60 nursing staff rostered to provide patient care in this ward as well as a large medical and multidisciplinary team.

Control Ward

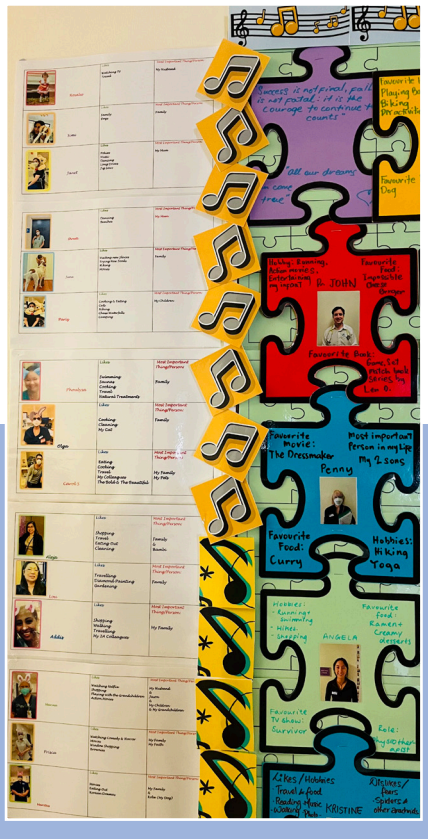
The control ward is a 32-bed unit for patients requiring care for acutely ill oncology, haematology, gastroenterology, nephrology, and endocrinology patients with complex medical conditions.

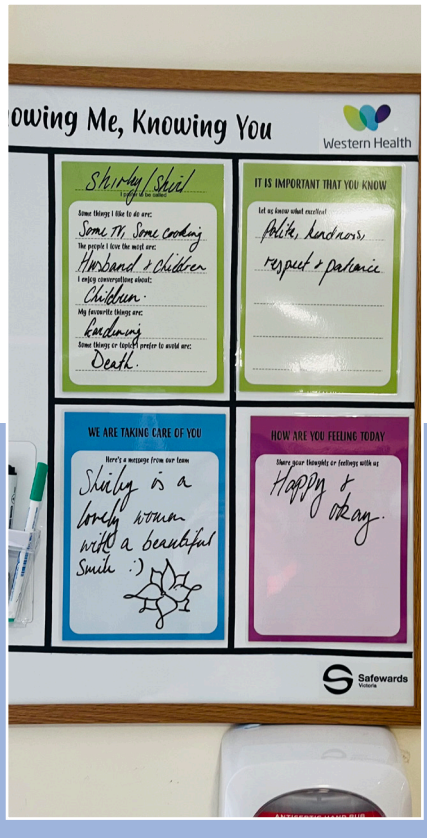
EVALUATION PURPOSE AND OBJECTIVES

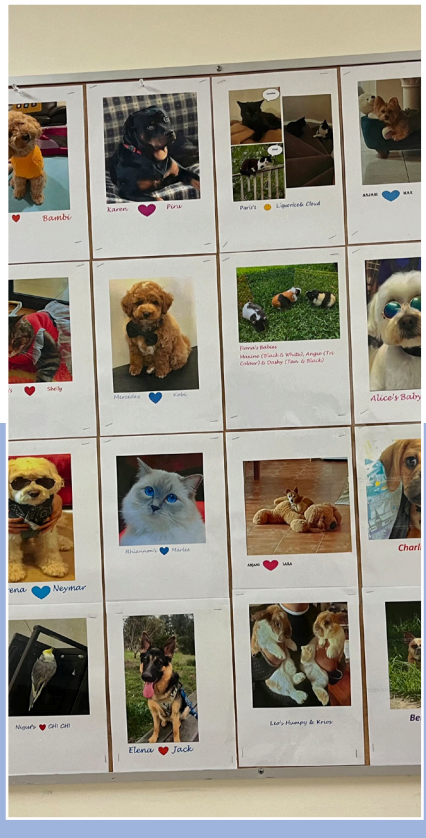
HYPOTHESIS AND AIMS

It is feasible to adapt the Safewards interventions to the general acute care setting and these interventions will reduce the rate of conflict and containment, improve quality and safety of patient care, and improve staff wellbeing and ward culture.
The aims of this evaluation were to

1. assess the acceptability, feasibility and describe the uptake of the Safewards interventions in the participating acute care wards.
2. evaluate the benefits of Safewards interventions in supporting the safety of staff and patients by reducing the rate of conflict (i.e., aggression and physical assaults incidents) and containment (i.e., security response request, one-to-one specialling request).
3. evaluate the impact of Safewards interventions on ward safety climate.
4. establish the impact of Safewards interventions on experience of care from patients' perspective.







APPROACH AND METHODOLOGY

IMPLEMENTATION PROCESS

The initial implementation plan had to be modified due to the challenges to implement a large project during the Omicron outbreak in March 2022. Workforce shortages because of staff in isolation, and increased staff pressure to cope with a vast number of COVID-19 patients requiring hospitalisation had significantly reduced staff capacity to implement new interventions. The project team recognised a drastic drop in staff engagement due to tremendous staffing pressure faced by participating wards. Four interventions (Figure 1) were prioritised to optimise staff engagement. These interventions were considered most relevant to both patients and staff, and highly favourable based on the feedback received from staff focus group conducted in December 2021 (please refer Section: Initial Implementation Experience and Feedbacks).

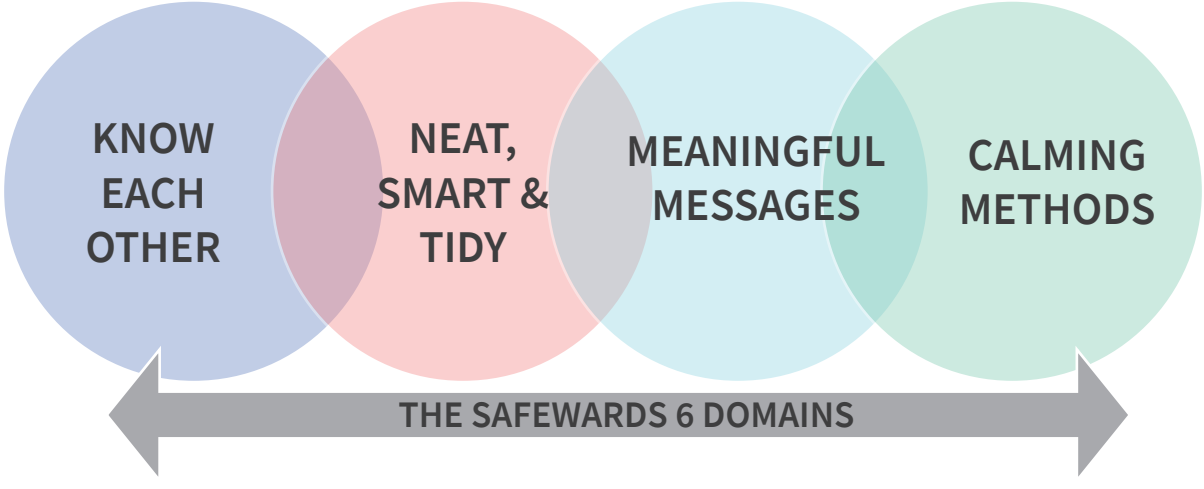


Figure 1. Safewards Interventions

In order to restimulate the implementation motivation among nursing staff at participating wards, the project team adopted the Agile Project Management[14] approach. This approach focuses on breaking down the large project into more manageable tasks and completing them in short iterations. The implementation of the four chosen interventions occurred in a staggered fashion between March 2022 and October 2022, with some unexpected delays in between the implementation of the interventions.

Using this approach, each intervention was implemented in a block of four weeks and evaluated at week five. At week 1, project coordinators and the appointed champions at each ward planned the rollout of the intervention. At week 2, the NUM and champions launched the intervention in few patient beds and identified challenges through gathering feedbacks from patients and staff for that specific intervention. When the intervention was refined and well-accepted by more staff, champions would provide education on the theory behind the intervention to maximise staff engagement. The project coordinators and champions might further modify the intervention based on the feedback from the evaluation team (evaluation findings were shared during regular team meetings, and interim reports). These steps were repeated for each intervention.

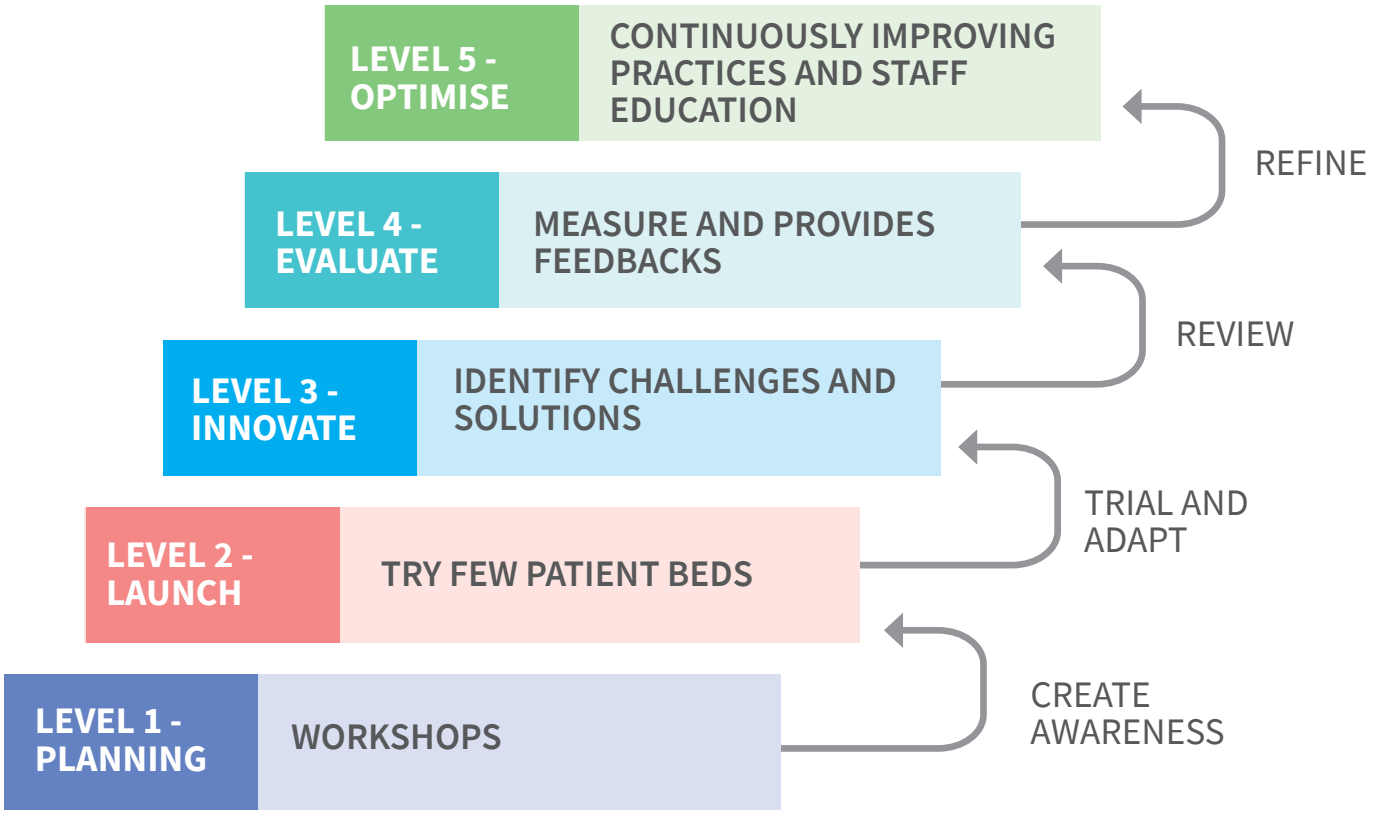


Figure 2. Implementation and Evaluation Stages

EVALUATION APPROACH

The evaluation was independent and was conducted by a team of researchers at the University of Melbourne. The evaluation criteria were developed based on the framework of implementability[9] and OECD-DAC Evaluation criteria[10] and modified according to the needs of stakeholders and the context of the project.

Criterion	Definition	Evaluation question
Relevance	The extent to which the intervention objectives and design respond to the institution needs, policies, and priorities, and continue to do so if circumstances change.	• Does the intervention respond to the identified needs of the participating wards? • Was the intervention appropriately adapted to the local context and target population?
Acceptability	The extent to which people delivering or receiving the intervention consider it to be appropriate.	• Was the intervention acceptable to the clinical staff? • Was the intervention approach appropriate to the participating wards especially during the COVID-19 pandemic?
Feasibility	The extent to which the intervention can be implemented with ease.	• What was the implementation process? • What were the barriers and facilitators to the implementation?
Fidelity	The extent to which the intervention can be delivered as intended.	• What types of training and learning materials had been provided to the staff? • To what extent had the key indicators of implementation been achieved?
Impact	The extent to which the intervention has generated or is expected to generate significant positive or negative, intended, or unintended, higher-level effects.	• Did the interventions contribute to the intended outcomes in the short, medium, and long term? (Refer to the Program Logic at Appendix 2)
Sustainability	The extent to which the net benefits of the intervention continue or are likely to continue.	• To what extent are benefits of the intervention are likely to continue?

METHODOLOGY

Mixed methods were used in the data collection, which included:

Quantitative Data

- Number of aggression incidents
- Number of security responses
- Safety climate surveys[11]

Qualitative Data

- Patient interviews
- Staff focus group discussions
- Field visits and observations

Figure 3. Data Collection Methods

DATA COLLECTION

Quantitative data was provided by project coordinators at the participating sites. Numbers of aggression and assault incidents captured in the Victorian Health Incident Management System (VHIMS) and security responses captured in hospital security database were compared for 6 months before (from September 2021 to March 2022) and after (from April to October 2022) implementation. Based on the hospital policy, aggression incident is defined as any incident where staff feel threatened, distressed, upset by a consumer's verbally or physically threatening behaviour. This includes verbal threats, racial abuse, intimidating behaviour, sexually inappropriate comments, and behaviour. Please note that swearing, and threats to make a complaint do not always constitute aggressive behaviour. Assault refers to any incident where there is unwanted contact made with any part of a staff member's body. Unlike the definition under common law, assault for the purposes of the policy, does not require the person to have deliberate intent, or capacity. Examples of assault can include hitting, spitting (where contact is made), kicking, slapping, biting, hair pulling etc.

A survey about staff perceptions and experiences of patient safety in their ward was used to evaluate the impact of Safewards model on safety climate of the ward. The University of Texas Safety Attitudes Questionnaire (SAQ) survey tool[11], modified for the Victorian environment[12], was used as the data collection instrument for this part of evaluation. The survey comprised a 42-item set of rating questions, supplemented with one open text question, and a set of demographic questions (Appendix 2).

Qualitative data was collected through patient interviews (n=10; age range: 25-77 years old; 4 males, 6 females) and eight focus group discussions with staff (n=52) at the participating wards. This data was supplemented with the collection of site visits and photographic evidence. Three field visits were conducted at Site 1 and two field visits were conducted at site 2 between April 2022 and October 2022.

ETHICAL CONSIDERATIONS

Ethical approval for this evaluation was obtained from the Melbourne Health Human Research Ethics Committee (HREC/73326/MH-2021) and from the University of Melbourne. All interviews, focus group discussions and other discussions were conducted in accordance with best ethical practice in research, particularly with respect to ensuring participants' safety, anonymity, the protection of data, and risk mitigation. The evaluation also followed COVID-19 safety protocols to protect the safety of hospital staff, the evaluation team, and participants.

LIMITATIONS

Four interventions instead of ten interventions were implemented due to ward staffing crisis and increased staff burnout during the COVID-19 pandemic and Omicrons outbreak. Hence, this evaluation only able to measure the impact of four Safewards interventions.

While we had planned to explore the perspectives of carers regarding the Safewards interventions, the evaluation team realised that it may not be feasible to recruit enough sample of carers due to visitor restrictions in place at the hospitals during the evaluation period. Hence, only patient interviews were conducted.

Factors such as unplanned delays in implementation, staggered implementation of the interventions, and short duration of this pilot project had limited the capability of this evaluation to determine the medium and long-term outcomes of the Safewards Model and interventions in acute care wards. Furthermore, existing official incident report rates appeared to be less sensitive to the effects of the Safewards interventions because staff differ in the thresholds at which official incident reports are made. In addition, incidents of conflict and containment that are sufficiently severe to be officially reported are relatively rare in acute care wards. Hence, the true quantitative impact of the four Safewards interventions on the rates of conflict and containment in the acute care wards is yet to be determined in future evaluations using different outcome measures or customised research data collection tools and over a longer period of time.

FINDINGS

RELEVANCE

CONFLICT AND CONTAINMENT IN ACUTE CARE WARDS

Acute care wards have patients with specific physical health care needs, with few presenting with either single or dual diagnosis regarding mental health or substance use issues. Whilst delirium might be a common trigger for conflicts and containment for wards that care for elderly patients with dementia, communication conflict is common cause of verbal and physical aggression incidents in these participating wards.

> *"… a lot of my OVA incidences were in relation to communication and patients not aware that they couldn't leave the ward because they were monitored. Or that the doctors and the nurses weren't updating them on their plans. So, it did cause aggression, it did cause verbal threats - so I think that was one of our main challenges in CCU…So it's those types of conversations rather than any you know constant mental health issues or drug issues."*

> *"…Medical or treating team that are updating family, 50% of the cause [of a conflict], because they work limited hours, 8 to 5, and families decide to ask questions when they're gone…"*

DE-ESCALATION WITH DISTRACTION

Despite the challenges of caring confused and delirious patients, staff reported the use of restrictive measures such as sedative medication and mechanical restraint are the very last resort. De-escalation with distraction is the most commonly used approached in their ward settings.

> *"As much as possible we don't,we don't usually like to use mechanical restraints, and we try our best not to use medical, like medication restraints either, chemical…"*

> *"…de-escalating with distraction, so would you like a drink, you've got to go to the toilet, calling family, familiar voice to them because sometimes family can't, as family can't visit…"*

CONFLICT AND CONTAINMENT DURING THE COVID-19 PANDEMIC

Increased Communication Conflicts

When the new visitor restrictions are in place, staff expressed there was a rise in communication conflicts between the healthcare staff and family members when their expectations were not able to be met. Increased demand for hospital beds during the pandemic also reduce staff capacity and capability to establish a good therapeutic relationship with patients.

> *"we do get conflict actually because we're so busy I guess the doctors can't reach every, and update every single family, so families do get quite frustrated about not getting that constant update, and not being able to reach us, because sometimes we might not have a ward clerk, or we can't sit by the phone and answer everyone's questions or get back to them, so yeah that's the type of conflict that's arising lately that I've noticed…"*

> *"…conflict of the hygiene, because of COVID we cannot shower patients in the shower anymore because we haven't got the vent… and you get a lot of patients who go I haven't had a shower in 2 weeks and their families are like why you don't shower them, and well it's repeating yourself, we can't because unless she can shower by herself, and I can check in on her… And then you feel bad, and you feel guilty…"*

The COVID-19 restrictions had reduced the tools that can be used to distract a patient when they are unsettled.

> *"I had a patient that was quite delirious dementia, and they were just so unsettled, and I'm like I gave them a bunch of towels to fold and that kept them occupied, even though it was driving me absolutely mental, I was like have some towels while I go on my break, and I'm like watch the patient…that's a real problem because you can't even give somebody a magazine, which would totally keep them occupied for half an hour, but we don't have, there's nothing that we can have because of COVID, so can't give somebody a newspaper…"*

ADAPTATION OF THE SAFEWARDS INTERVENTIONS

Staff at all participating wards were encouraged to be creative in adapting the Safewards interventions. At site 1, the staff found similarities between the Know Each Other intervention and the Sunflower tool13 that designed to improve care of confused hospitalised older persons. By using the existing tool in the ward, the implementation team were able to implement the Know Each Other intervention with less resistance from staff.

In ward C, the staff had adapted the lyrics from ABBA "Knowing Me, Knowing You" song and used it as a theme song for the Know Each Other intervention. The adapted lyrics create resonance among the nursing staff and was well-received. Furthermore, the implementation team at Site 2 had engaged Dr Juan Sanin, the design researcher in the School of Design, RMIT University, to co-design the resources that can be used in the Safewards interventions.

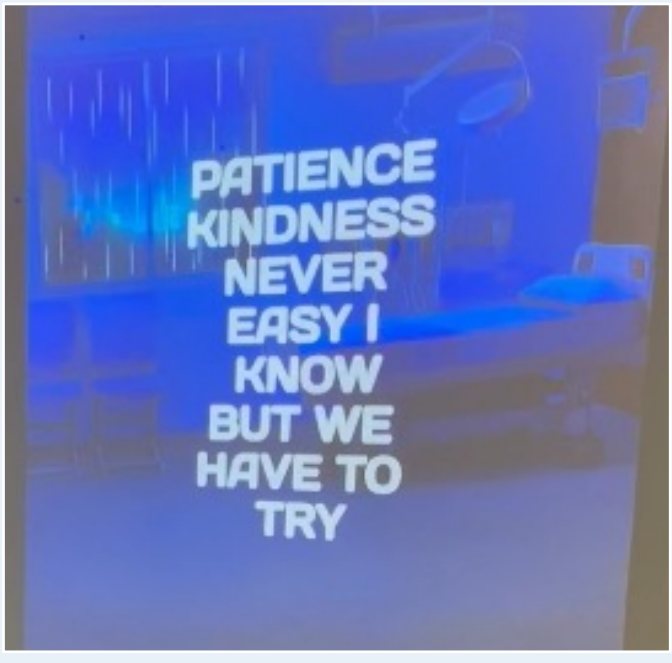


Figure 4. Adapted Lyrics - Knowing you, knowing me (ABBA).

"…the reason I think we were so successful in getting so many people to come onboard is we made it fun, we made it about fun and participation, and you know fun things like videos… as I said we introduced the things that we knew would be challenging to get people to come onboard, we introduced those - once people were invested, so we made it fun and I think that was the biggest thing…"

SUMMARY

The Safewards model and recommended interventions are considered highly relevant to the acute care wards. Whilst patient populations can be different, each ward faces a set of unique behavioural issues that could negatively affect ward atmosphere, patients and staff wellbeing and quality of patient care. Different conflicts arose during the COVID-19 pandemic when new set of rules and restrictions imposed in the ward. However, staff unanimously agreed that de-escalation should always be attempted before the decision to use security officers or sedative medications is made. Hence, the concept of preventing and using the least restrictive interventions outlined in the Safewards model is aligned with the nursing practice in the wards. Nevertheless, staff expressed a sense of powerless and frustration due to the time pressure at work, increased work demands, new COVID-19 restrictions and limited resources available to manage conflicts. During the focus group discussions, staff argued that the Safewards model, and the recommended interventions are a good initiative to prevent conflicts and to empower staff to manage conflicts more effectively. Furthermore, staff found that the Safewards interventions are highly adaptable. They were able to use their creativities and patients' feedbacks to adapt the Safewards interventions to maximise the relevance of these interventions in their own ward settings.

ACCEPTABILITY

OVERALL IMPRESSION OF THE SAFEWARDS MODEL AND INTERVENTIONS

Overall staff reported that the Safewards model has some similarities with other existing program, and they acknowledged this project has allowed them to reinforce certain good clinical practice and provided them structure to formalise the good practice.

> *"I think it provides a bit of structure, like a lot of the time people knows what to do but it is hard to keep things in a way we need, I think it provides more structure and like things to focus on and learn what thing for this zone is and keep it there, make that more of a habit…I think yeah it gives a bit more structure to just generally be nice and respect each other, formalised that bit…"*

For acute care wards with large number of patients with cognitive impairment such as patients with delirium, dementia or Alzheimer's disease, Safewards model has been considered highly applicable.

> *"…we have behavioural issues, delirium patients... When I heard the Safewards, this is interesting... That will benefit us, that will benefit the patients, benefit the staff so maybe we need to learn how we can prevent aggression, or you know complaints and plus being a NUM there are also conflicts between staff and staff, what am I gonna do, what are we gonna do, how can we avoid or prevent conflict between staff to staff and you know the conversation and a positive voice. I've learnt a lot of things from the Safewards…"*

INITIAL IMPLEMENTATION EXPERIENCE AND FEEDBACK

This project was conducted during the COVID-19 pandemic and multiple disruptions had caused a significant delay in implementation. Ward A was the first ward that adopted the interventions. The staff received training for seven interventions (between September and December 2021) and the ward had a trial in implementing four interventions before the Omicron outbreak in March 2022.

After initial training and a trial run of four interventions in ward A, two online focus groups guided with semi-structured interview protocol were conducted in December 2021 via Microsoft Team with nurses at Site 1 (n=11). The focus groups lasted about 30-40 minutes each. All sessions were audio-recorded and professionally transcribed. Table 3 summarises the implementation experience for each of the interventions. This experience was used to guide the selection of four Safewards interventions to be piloted at both sites when the project team decided that it was impractical to implement all ten interventions within the project period during the Omicron outbreak in March 2022.

Table 3. Implementation Experience in Ward A

Intervention	Description
Favourable	
Positive words	Staff reported this intervention has helped in bringing back the positivity, especially when caring patients with cognitive impairment. *"I think probably positive words is a really good, working with cognitive impaired patients a lot of the time it can be easy to focus on the negatives and I think that initiative is a good way to bring that back around into positive things"*
Know each other	This intervention has been helpful in breaking down the barrier between staff and patients; and building a positive therapeutic relationship. *"..know each other stuff is something I get passion about the sense about breaking down the barrier, we're all people, we all have lives…face behind the mask at the moment as well, and then often common themes I noticed especially in this I guess area, everyone's, most people love animals, the banter around football teams, a lot of you know anything that's not work related, so outside of these walls like we are individuals and I know there has been patients reading them, so definitely people have commented on me that they thought I was a nice person until they knew I was a Collingwood supporter. So, but you know just things like that, and then you can have those casual conversations and start up and I guess build relationships…"*
Meaningful messages	One of the wards provided a leaf shaped note for patients to write down a note for other patients. The written notes will then be displayed on the ward. Both patients and staff have expressed a positive response toward this intervention. *"I have a few patients that like to read them. When we do the walk around the ward they like to rest on that bench, and they like to read them…"*
Neat, smart, and tidy	This is one of the interventions that were favourably discussed by staff in both focus groups. It has been considered an intervention that is relatively simple to implement yet has a good and immediate effect on the ward. *"…when I first started decluttering so that if you have a code you've not got all the shit everywhere…."* *"We've done three different zones and we've colour coded the obs machine and rails… so that resources are available for each zone…I think that's makes a lot of sense and probably decreases a lot of conflict."*

Intervention	Description
Challenging	
Delivering bad news	Due to visitor restrictions are in place, the approach recommended in this intervention has been considered unrealistic and not applicable to the current ward setting. *"Some of it is a little bit irrelevant… finding a quiet space to, where you won't be disturbed to kind of break the news to them, and you think that's not set in our reality, we don't have any quiet spaces…"*
Mutual expectations	Staff expressed this intervention has limited applicability in current situation where there are a lot of changes and uncertainties. *"Our environment's changing every shift…Like today our ratio has changed, how'd the patient get to know that… we don't even know that and then suddenly we've got to work together with the patients, really challenging…"*
Calming methods	Staff believed this is a useful intervention however there has been a challenge to implement due to COVID-19 restrictions. Staff expressed the need to have items that can be used to offer distractions to patients. A calming box with items that can be offered to patients are believed to be useful to reduce the stress of the staff when caring for patients that have high demand for constant attention. *"…that's a real problem because you can't even give somebody a magazine, which would totally keep them occupied for half an hour, but we don't have, there's nothing that we can have because of Covid, so can't give somebody a newspaper or puzzles…"*

SUMMARY

This evaluation found that during the initial implementation, five out of seven of the piloted Safewards interventions were highly acceptable to the nursing staff at site 1. Whilst the "Calming Methods" intervention was challenging to implement due to COVID-19 restrictions, it was considered one of the most needed and useful interventions. In contrast, "Delivering Bad News" and "Mutual Expectations" were considered less relevant to the acute care wards and staff were less likely to adopt these interventions.

FEASIBILITY

BARRIERS AND FACILITATORS

Based on the feedback from the implementation champions and nurse unit managers, the main barriers, and facilitators to implement the Safewards interventions are described in Table 4 and Table 5, respectively.

Table 4. Implementation barriers and example quotes from the staff focus group.

Barriers	Example Quotes
COVID-19 fatigue and time pressure	COVID-19 fatigue *"…first step of creating a sense of urgency to get your people on board to know that something needs to change, I found that hard because we have done that for two years during Covid. And people are just fatigued to all change… we ask people to work beyond their scope and we ask people to go above and beyond and work harder with less resources…"* Additional workload and time pressure *"…think most people see it as just an extra thing, it's going to be something extra we're going to have to do. Projects always have an extra workload, so staff see why do I want to participate? What extra does that mean for me? Why do I have to do this, I'm already busy, I'm already tired. I've already got lots of junior staff and I've got only one RN on today. So it's staff, it's staff not wanting in the beginning that's what we found…."*
Limited opportunity to receive sufficient training	Limited buy-in from staff due to lack of understandings of the model *"…one of them actually said to me …I want to do it but what have I missed out on, I need to know why and so it's just, yeah it's just like I said I think crit care nurses want to know why, I want to know the background to the things and want to do best outcomes, but they need that education behind them…"*

Barriers	Example Quotes
Infection control	Restricted choices *"…infection control – everything needs to be single use so with all our calming methods it has to be signed off by infection control, so things that we wanted we couldn't necessarily get so our diffusers – we wanted certain weighted animals, but they wouldn't pass infection control because they really had to be single use or be able to be wiped down. So that would be a challenge definitely."*
Lack of protected time to prepare and design the implementation	Additional burden to staff *"…we came up with so many ideas, so like, and it took us a long time to actually decide on one, and actually implement it…. some of us came on our days off to implement this, and you know it's like, it's nice, but you don't really want to come to work on your day off…"*

Table 5. Implementation facilitators and example quotes from the staff focus group

Facilitators	Example Quotes
Being adaptable and flexible	Autonomy to customise the interventions *"Our NUM she just gave us the ward you can do whatever you feel like is good for the Safewards … nearly every one of these initiatives has come from staff here… you know we've had the courage and the thing to want to do that, and people are proud about it… I think that support matters and our NUM has given us a license to do that... So I think that people feel like they can have ideas and those ideas will be respected and supported…"* Co-design with the staff *"It also depends on how you're going to introduce it or treat your staff. Because what I do here is I don't tell them what to do. You tell me what you want to do and then we'll do it together…"*

Facilitators	Example Quotes
Meeting the needs of staff and patients	Beneficial to both patient and staff *"…people don't become nurses to click on the EMR, like people became nurses because they wanted to help people at some stage when they wanted to do nursing. And I think just the time pressures in the workforce and the demand on the health system has taken that away…I do believe it's [the Safewards intervention] beneficial for both patient and nurse…"*
Strong collaboration and communication within the team	Persistent leaders *"I encourage them …just think about this, you know we have to try first because you cannot tell now because we haven't tried anything so you better feel it first, do it and then that's when we can tell. For example, if it's not working then at least we tried but if it's gonna work that's 100% okay let's do it, let's continue doing it. But I was very, very positive…That's what I always say we always tried…"* Previous experience of participating in quality improvement projects *"I'm proud to have this team because even previous years my team are always competitive. You know even when I was an A-NUM then my previous NUM we have been competitive, maybe because we've been through a lot of changes, so we get used to it… We never said no because we had a lot of projects in the past and we always say yes… I know a lot of my staff are very good in projects and we all have our own expertise…"*

SUMMARY

This Safewards pilot project was delivered entirely within the challenging context of the COVID-19 pandemic. The Omicron outbreak during the project period presented significant challenges for the implementation of any new interventions. Some of the core challenges included staff fatigue in adopting new changes along with the need to follow new safety protocols, restrictions on gatherings also hampered face-to-face education of the Safewards model and the interventions. Staff also shared that the adjustments required by COVID-19 safety protocols meant that they needed to go through more hurdles in implementation. For example, all the items used for the calming methods intervention must pass the infection control requirements. However, the ability of the project team and the champions to adeptly customise and refine the interventions and implemented them within the context of this pandemic was identified in this evaluation as one of the key drivers of the implementation success. In addition, the engagement of staff at various experience levels by champions was an important factor enabling the inclusion of all staff in the implementation process. This represents a major achievement of the team. This pilot project showed that it is highly feasible to implement four of the Safewards interventions in acute care wards even in the midst of the most challenging time during the pandemic.

FIDELITY

TRAINING

Training Exposure

Prior to the commencement of the implementation, the project team organised three sessions of train-the-trainer Safewards virtual workshop to introduce the model and the interventions to the NUMs, and ANUMs from both the participating wards at both site 1 and site 2.

Site 1

The COVID-19-related rules for number of people can gather with in a room meant that it was a challenge to conduct face-to-face training sessions. Hence, the education team and the project coordinators at site 1 developed Safewards online training modules (Figure 3) to promote higher training coverage among staff in the participating wards. Despite the availability of high-quality online training modules, staff expressed limited motivation to complete the online module due to competing interests, staff fatigue and workload increased during the COVID-19 pandemic.

> *"…with all the COVID things, what was meant to happen a lot of it hasn't happened, or a lot of the training hasn't occurred, so. Like we've got the board up there, but if people haven't read it, because sometimes you know you don't have time, you're on your tea break, you don't want to be spending your break time reading all the information on the board… also pretty much it was just like an email was sent out, it was on the attachments, which again you're busy, we've been flat out for the last year, so we don't always have time to be doing the training…."*

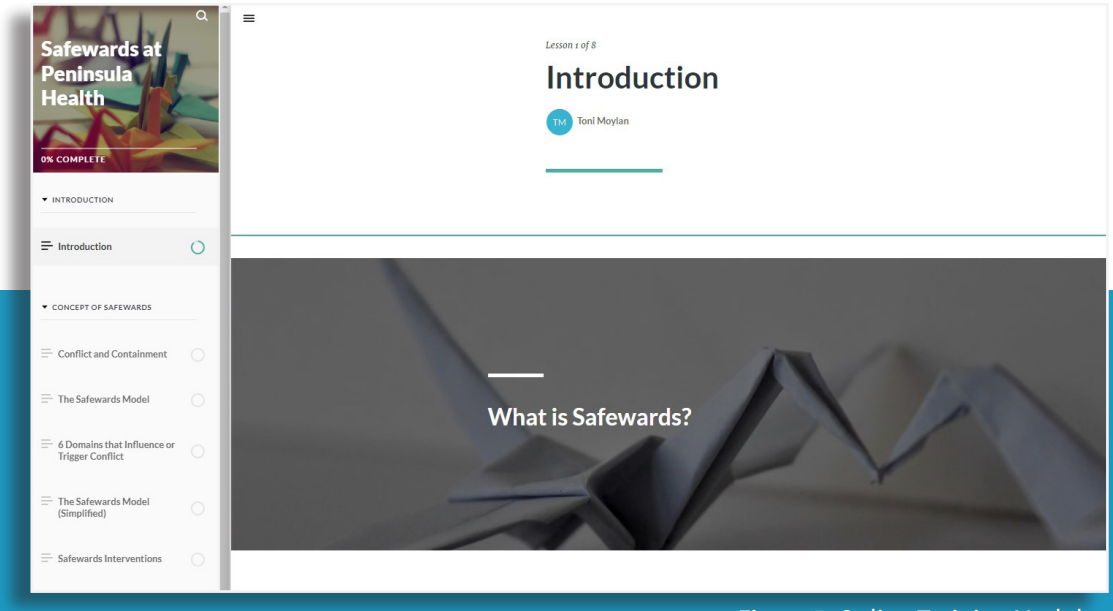


Figure 5. Online Training Modules

After the COVID-19-related rules for number of people can gather with in a room had lifted in April 2022, champions had conducted multiple in-service, face-to-face education sessions to promote further uptake of the implementation. During the focus group, frontline nursing staff agreed that in-service, face-to-face education sessions or dedicated allocated time slots to allow staff to complete the online module together are more effective to encourage buy-in from less motivated staff.

> *"…having like the little sessions is probably a good way, because then like it's right in front of you, you sort of have to participate. Whereas if it's just sent out in an email, there's no way you can make sure people are looking. But I guess the problem is we're all on different days, so you'd have to do it several days… if staff are left to their own devices, majority won't do it.*

Site 2

The project coordinator (non-clinical staff) was not able to access the ward to provide in-service education sessions when state-wide COVID-19-related visitor restrictions were in place between August 2021 and March 2022. The NUM and ANUMS at the participating wards were responsible for the staff training through various informal approaches.

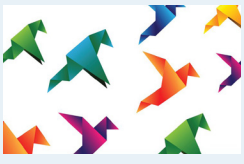
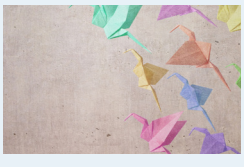
> *"…When we introduced to the staff it's not a formal meeting it's like a very casual one that we started talking about it. Sometimes during lunch time that's when I sit with them and then I started talking about Safewards or the interventions and they don't know it's already education…"*

After the COVID-19 restrictions for visitors lifted in April 2022, the project coordinator was able to conduct multiple in-service face-to-face education sessions to strengthen the understanding of the model and the interventions.

IMPLEMENTATION FIDELITY

The implementation fidelity was measured using a fidelity checklist and supported with the evidence of implementation (Table 6). The list of key indicators was developed in consultation with the advisory group.

Table 6. Key Indicators of Implementation

Intervention	Key Indicators of Implementation
Know Each Other 	• Champions have been appointed • Evidence of an established system (e.g., poster) to display information about staff and patients • Evidence of an opportunity to share options and examples for what can be shared has been provided to all
Neat, Smart and Tidy 	• Champions have been appointed • Evidence of an established system to keep the ward neat, smart and tidy • Evidence of an established working party
Meaningful messages 	• Champions have been appointed • Evidence of an established system (e.g., display board) to display messages • Evidence of an established working party (e.g., staff have been provided an opportunity to input ideas to creatively display messages)
Calming methods 	• Champions have been appointed • A calming box with sensory items is available • Evidence of an established infection control process for the calming box

During the last field visits (between 12 October 2022 and 7th November 2022), four interventions were implemented successfully at three out of four participating wards. The implementation fidelity was 3/3 for four interventions at Ward A, C and D as all the key indicators had been fulfilled. At the time of last field visit in October 2022, Ward B has successfully implemented "Know Each Other" and "Calming Methods". Despite "Meaningful Messages" and "Neat, Smart, and Tidy" have not been implemented at the time of the fidelity visit, the champions had established plans for implementation and staff education.

Champions

At the initial phase of implementation, each intervention had at least one designated champion to drive the implementation at both sites. As the project progressed, a pool of champions had been working together to support each other and contributed to the implementation of all interventions. At the later stage of the project, other staff gained interest and volunteered to contribute to the implementation despite not being appointed as a champion.

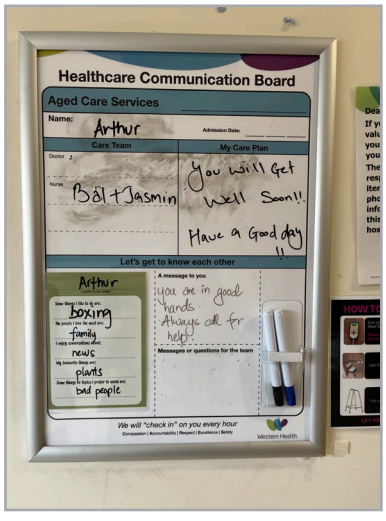
> *"…I think that everybody should just be a champion. It doesn't really have to be, you know what I mean realistically I think that it should be everybody's responsibility you know. I think it's just enabled for us you know but realistically all of us should be champions which I think we are…aren't we?"*

Ward B faced significant challenges in engaging nursing staff due to high turnover rate of staff during the pandemic. While nursing staff were assigned to lead the implementation at all piloted wards, a team of diversional therapists was able to relate their patient care responsibilities with the Safewards interventions and recognise the values of the Safewards interventions in caring for patients with multiple chronic and complex medical conditions including cognitive impairment or dementia. They volunteered to take over the responsibility from the nursing staff to lead the implementation of the Safewards interventions at ward B after the implementation progress had been stagnant from April to September 2022.

PHOTOGRAPHIC EVIDENCE OF IMPLEMENTATION

Know Each Other

Site 1

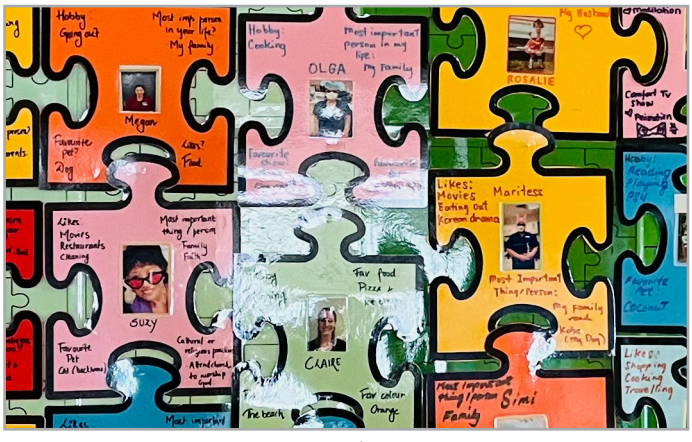


Site 2

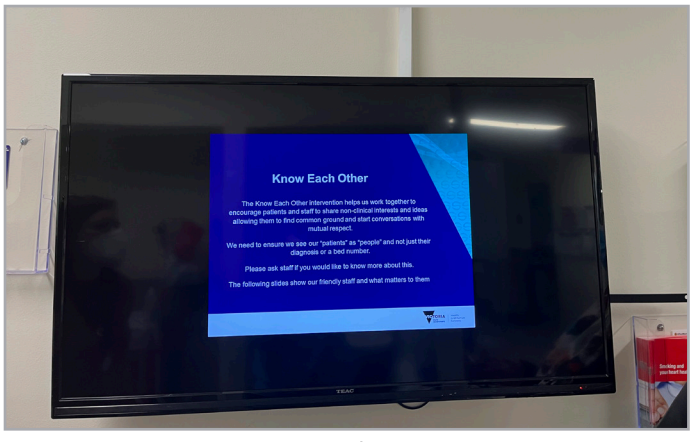
Figure 6. Patient Profile Board

Ward A

Ward B



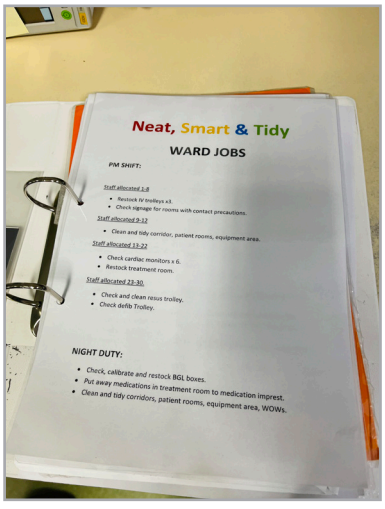
Ward C



Ward D

Figure 7. Staff Profile Board

Neat, Smart and Tidy



Ward A

Ward C

Figure 8. Neat, Smart and Tidy

Calming methods
Site 1

Figure 9. Calming Methods Corner at Ward A

Calming methods
Site 1

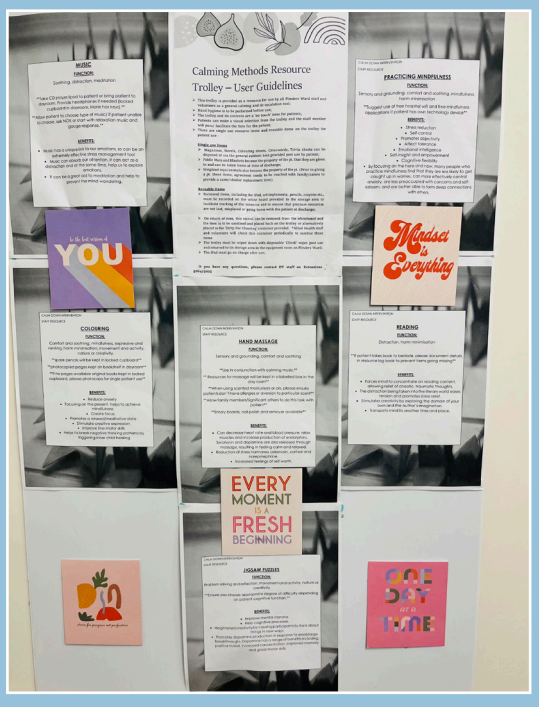


Figure 10. Calming Trolleys at Ward B

Calming methods
Site 2

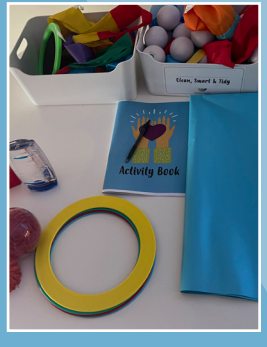
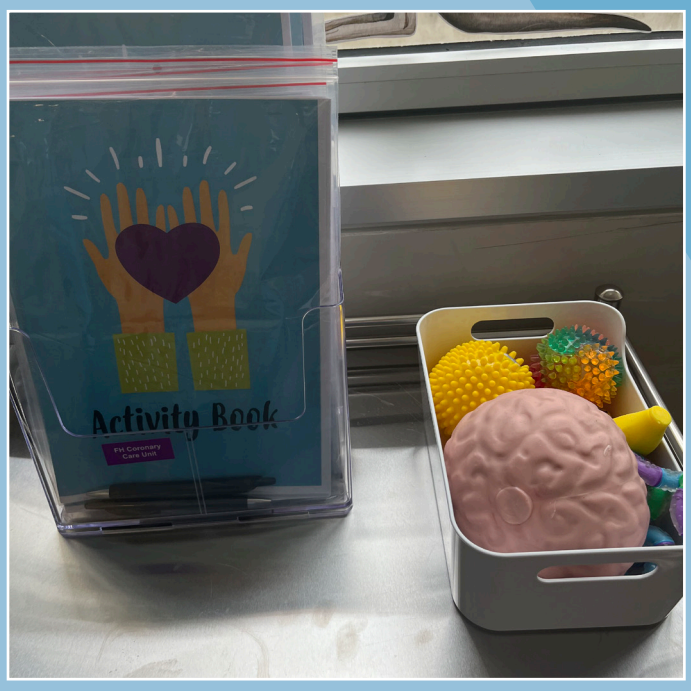


Figure 11. Calming Space and Calming Items at Ward C

Calming Space

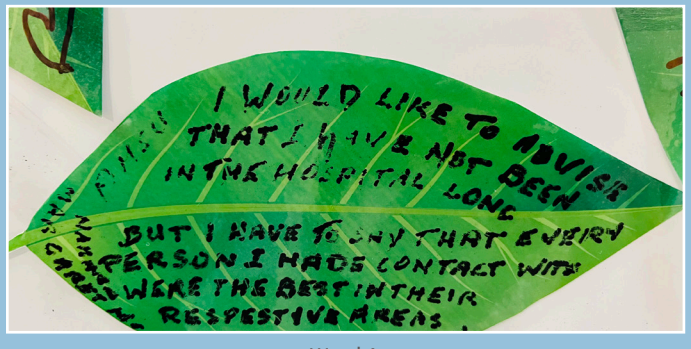


Activity Packs and Sensory Items

Figure 12. Calming Space and Calming Items at Ward D

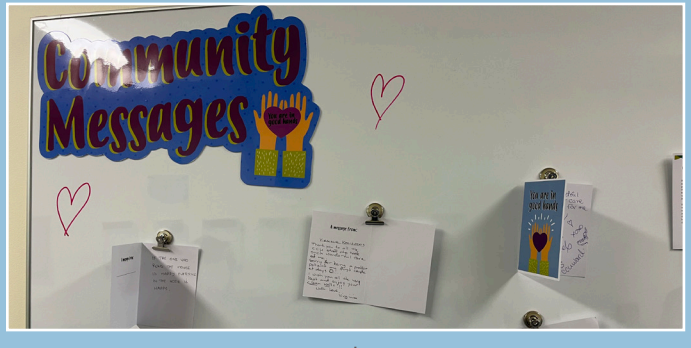
Meaningful Messages

Ward A



Ward A

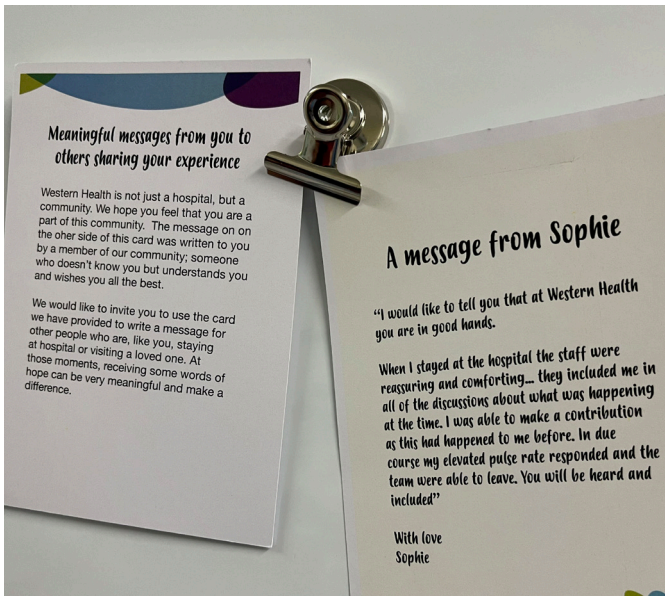
Ward C



Ward D

Figure 13. Meaningful Messages Boards

Meaningful Message Cards



Example of Patient Message

Figure 14. Meaningful Messages Cards at Site 2

SUMMARY

"Know Each Other" and "Calming Methods" are the two interventions that successfully implemented in all four wards and are highly favourable among staff. Whilst the implementation of Safewards interventions had primarily led by nursing staff in this pilot project, the evaluation found that other clinical staff like diversional therapist and medical staff could play an important role in leading and collaborating with the nursing staff to implement the Safewards interventions.

IMPACT

SHORT TERM OUTCOMES

Motivation to Learn and Implement

In this evaluation, we found the following intended short-term outcomes have been achieved in three out of four participating wards:

- Staff motivated to apply the intervention in their clinical practice after first week of implementation.
- Awareness of the Safewards model and motivation to learn more about the other interventions were created during the project period.

While there were concerns of insufficient face to face trainings at the initial stage of implementation, staff were motivated to learn more about the Safewards model and other interventions once they witnessed the effectiveness of the interventions in resolving conflicts. During the focus groups, staff were able to highlight the benefits of each intervention that have been implemented and to provide an account of at least one positive experience with the Safewards interventions. The key benefits for each intervention are described in Figure 15 and further illustrated in five case stories.

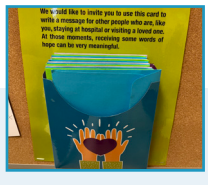
KNOW EACH OTHER	NEAT, SMART & TIDY	MEANINGFUL MESSAGES	CALMING METHODS
			
• De-escalation tool • Icebreaker • Boredom buster • Improve staff relationships	• Change the ward atmosphere • Improve wellbeing	• Appreciation • Acknowledgement • Allow staff to reflect on patient needs	• Empowerment • De-escalation tool • Improved patient care

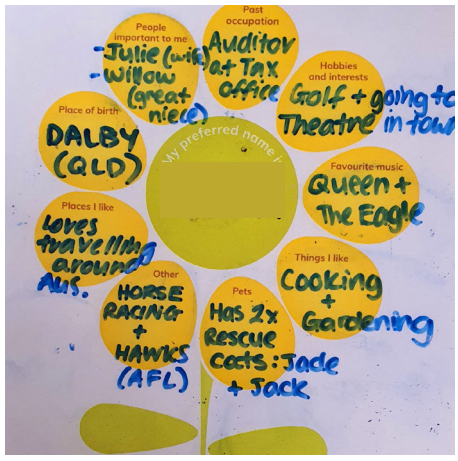
Figure 15. Staff Perceived Benefits

KNOW EACH OTHER - IMPROVED INTERACTION BETWEEN STAFF AND PATIENTS

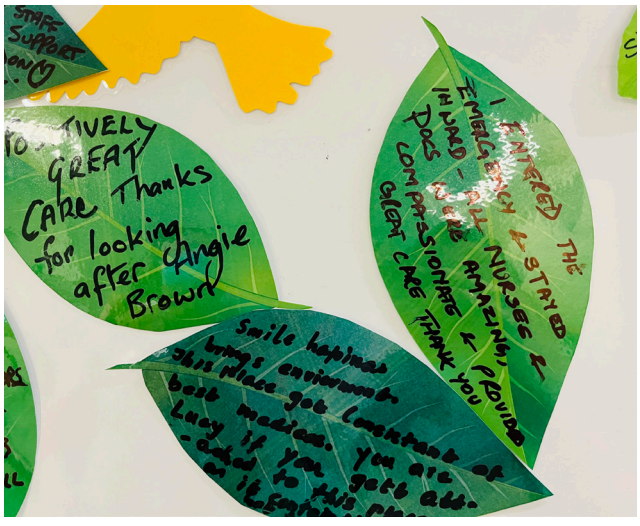
"You know one of the main things for me like we've got lots of stories about patients that were agitated and we take them to the [calming space] area, whether it's an iPad or the music or whatever it is but one of the most touching things for me is the fact that a patient wrote on one of our messages that she goes ***"I actually know my nurse's name and she knows who I am"****, so when I went in there like you know, normally they go my nurse my nurse and you'll sit there and go like I keep harping on – a lot of our patients have got short term memory issues as well and this patient said to me… my nurse's name is Sonna, you know, Sonna and before that because the board wasn't updated the day before and she's going my nurse, you know my nurse and she became frustrated and agitated just because she couldn't remember the name. And the fact that we wrote it up there and then she goes oh it's – and I go is it up and she goes Sonna, Sonna is my nurse you know and it stopped her agitation because she wasn't agitated because she was agitated at Sonna,* ***she was agitated because she didn't know the nurse's name, so just that interaction and because you're filling that out, for me it's the fact that interaction with the patients****"*

KNOW EACH OTHER - A GOOD ANGLE TO DE-ESCALATE

"I do recall a few times where I've looked at the board and thought right well this is a good angle, this is where I need to get information… remember using one for again a confused patient who was aggressive, we almost had to shackle him, and I looked at the board and saw that he liked opera – so I grabbed my phone out and started playing some opera for him and he just like relaxed…"



MEANINGFUL MESSAGES - STEP INTO PATIENTS' SHOES



"…I think it's also good like for future patients, like if someone, like we were talking one of the patients the other day and she was saying oh, I'd say is there anything you'd like to put on the board for future patients, and she goes "oh yeah like you know they can just ask the nurses to do things" and then we all have never taken[that] into consideration. You know something that they feel for others, and we don't even think of that before…"

NEAT, SMART AND TIDY - IF IT'S CLEAN, EVERYTHING IS CALM

"…the clean neat smart tidy thing is definitely something that I would always continue to do… I guess like working, because as nurses we're so like independent, and we have our own way of working as well, I just feel like personally there needs to be order, then you will feel like things are flowing throughout the shift, or properly…. If it's clean everything is calm…"

CALMING METHODS - BENEFITS FOR BOTH STAFF AND PATIENTS

"The [calming] space that we [have] for the patients, not just for the patient but staff as well, If you walk in that room there's like projector and then we've got iPads and we've got things to play with puzzles and everything. Every time I go in that room with any patient, it just changes their mood like that. Just this morning we had one of our patients who was crying nonstop, he was crying nonstop and once I took him to that room, he was settled for an hour just watching projection and enjoying and just relaxed. So, when you see like that you can actually tell that ok the Safewards model and say for the interventions they're actually working …"

CALMING METHODS - IMPROVE PATIENT-PATIENT INTERACTION

"…we had a couple of really confused patients for a long time, so we were using puzzles, there's been lots of colouring, there has been note writing or letter writing between patients as well… We had a lady, I actually thought she was cognitively intact, but it turned out she wasn't – so she would look out for all the other patients in the room, and all the other patients were confused… So, we'd tell her to write a letter to this lady that's opposite her and it would tell her about her dog and where she used to like to ride her little scooter and then she'd get one back sometimes it would have like a flower on it…"

MEDIUM TERM OUTCOMES

The targeted medium-term outcomes for this pilot project included (1) rate of conflict and containment reduced; (2) positive experience reported by patients; and (3) ward safety climate improved. In this evaluation, qualitative evidence indicated that all three medium-term outcomes were achieved. However, more quantitative data collected over a longer period are required to quantify the true effects of the Safewards interventions in reducing rates of conflict and containment, as well as ward safety climate.

Rate of Conflict (Aggression and physical assaults incidents)
All aggression and assault incidents captured in the Victorian Health Incident Management System (VHIMS) between September 2021 and October 2022 were included in the analysis. Data from both sites were combined and compared for 6 months before (from September 2021 to March 2022) and after (from April to October 2022) implementation. Negative binomial models have been fitted in both cases to determine the difference between control and participating wards before and after implementation.

a. Number of aggressions
There were 37 and 49 aggression incidents pre and post implementation at the participating wards, respectively. In control wards, only 8 and 11 aggression incidents were reported during the pre and post implementation period, respectively. The analyses show that there was insufficient evidence of a difference in the number of aggression incidents between the Safewards participating wards and the control ward at both sites before and after implementing the Safewards interventions (p value = 0.88). The mean numbers increasing from pre to post in a similar ratio in both control and participating wards [control ward 1.39 (95% CI 0.52-3.71); participating wards 1.28 (0.76-2.13)].

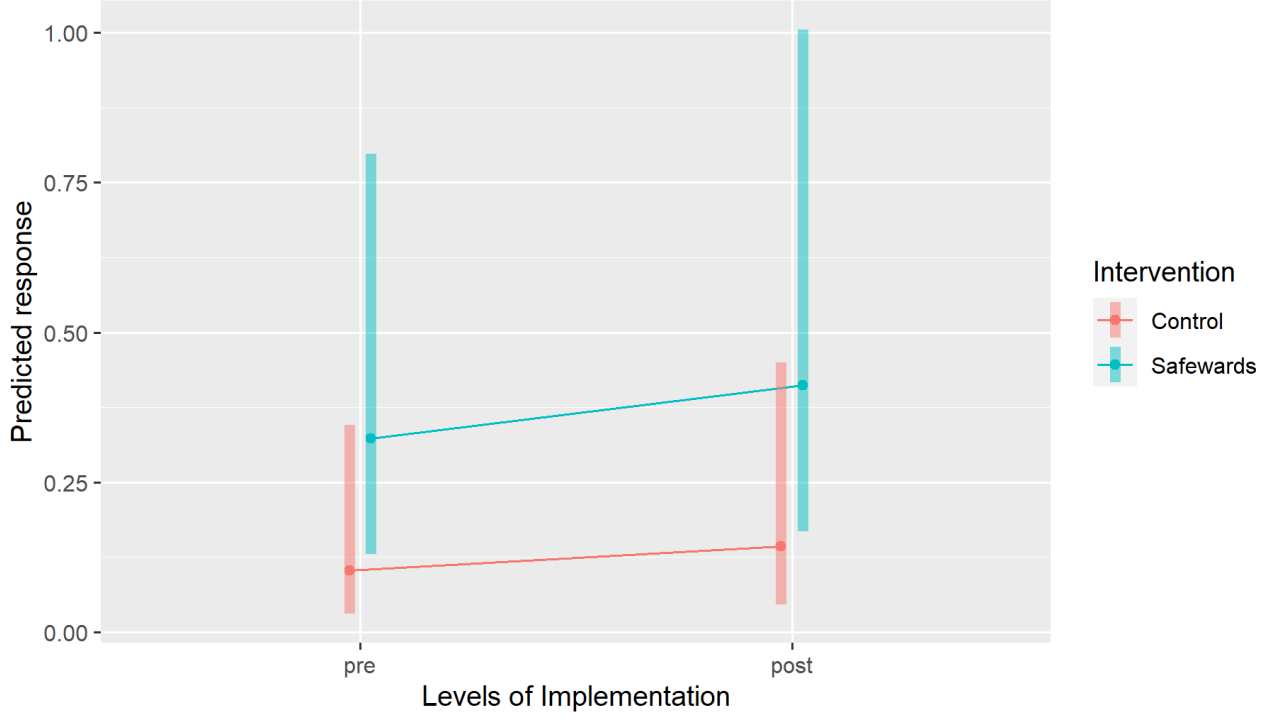


Figure 16.Number of aggression incidents before and after Safewards implementation at participating and control wards, with 95% CI around the means included

b. Number of physical assaults

During the evaluation period, there were 30 and 42 physical assault incidents pre and post implementation at the participating wards, respectively. In the control ward, 9 and 12 physical assaults were reported pre and post implementation, respectively. The general linear mixed model showed that there was insufficient evidence of a difference in the number of assault incidents between the Safewards participating wards and the control ward at both sites before and after implementing the Safewards interventions (p value = 0.89). The mean numbers increasing in a similar ratio from pre to post [control ward 1.35 (95% CI 0.53-3.45); participating wards 1.46 (0.83-2.54)] in both control and participating wards.

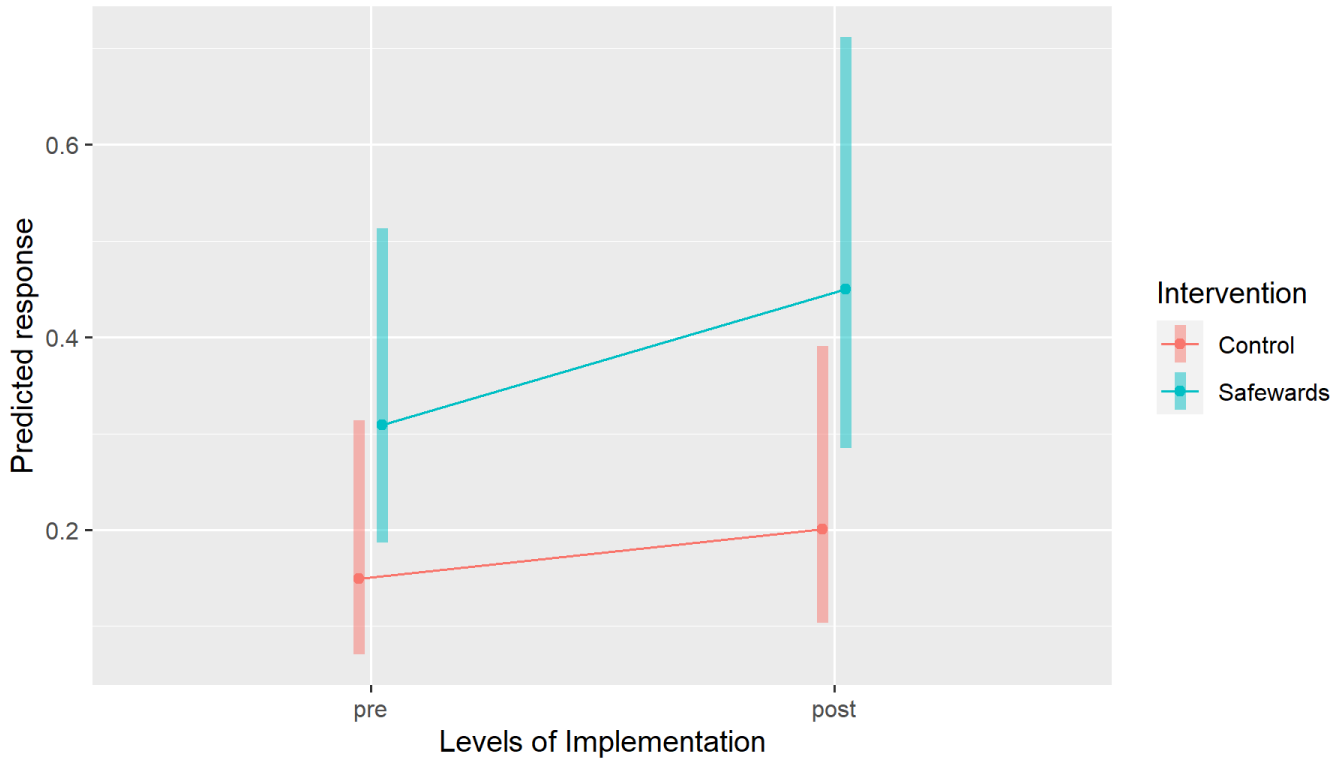


Figure 17.Number of assault incidents before and after Safewards implementation at participating and control wards, with 95% CI around the means included

Rate of Containment

a. Rate of security response request

All code grey and planned code grey security responses captured in the security database between September 2021 and October 2022 were included in the analysis. Data from both sites were aggregated and compared for 6 months before (from September 2021 to March 2022) and after (from April to October 2022) implementation. From September 2021 to March 2022, the number of code grey security responses at the participating wards and control wards were 159 and 86, respectively. As for the planned code grey response, the number of responses at the participating wards and control wards were 213 and 53, respectively. After implementation of the first Safewards intervention, from April to October 2022, the number of code grey security responses at the participating wards and control wards were 218 and 105, respectively. As for the planned code grey response, the number of responses at the participating wards and control wards were 148 and 59, respectively.

A mixed effects generalised linear model has been fitted to determine the difference in the mean number of security response requests before and after the implementation. There was insufficient evidence of a difference in the number of security response request between the Safewards participating wards and the control ward at both sites before and after implementing the Safewards interventions (p value = 0.13).

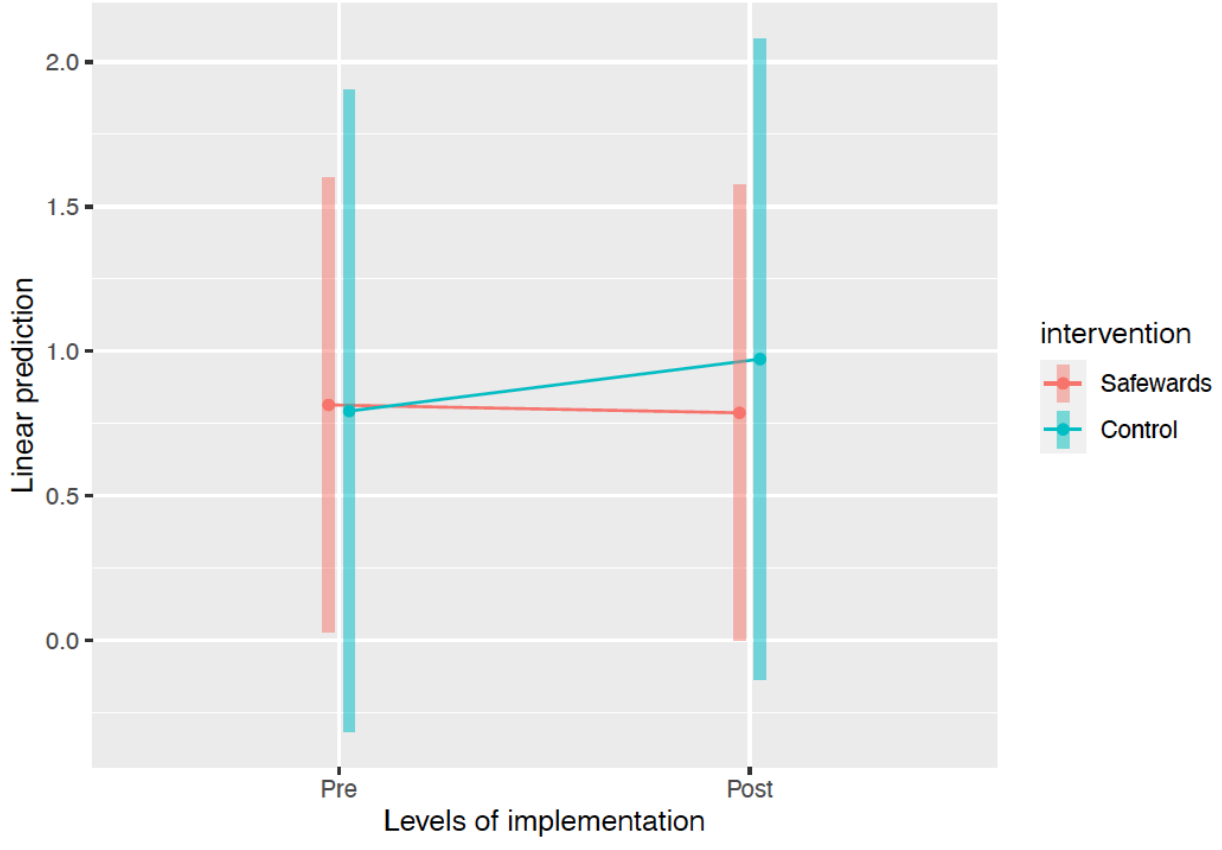


Figure 18.Number of security response requests before and after Safewards implementation at participating and control wards, with 95% CI around the means included

b. Rate of one-to-one specialling request

One-to- one specialling requires a registered nurse or health care support worker to provide one to one continuous observation care to an individual patient who may be suffering from cognitive impairment, exhibit challenging behaviour, or may be at risk of falls or causing harm to themselves or others. From September 2021 to March 2022, the number of one -to-one specialling requests at the participating wards and control wards in Site 1 were 473 and 541, respectively. After implementation of the first Safewards intervention, from April to October 2022, the number of one -to-one specialling requests at the participating wards and control wards were 724 and 588, respectively.

The linear mixed model showed that there was insufficient evidence of a difference in the number of one-to-one specialling request between the Safewards participating wards and the control ward at Site 1 after implementing the Safewards interventions (p value = 0.45).

No similar data was provided by Site 2 for analysis.

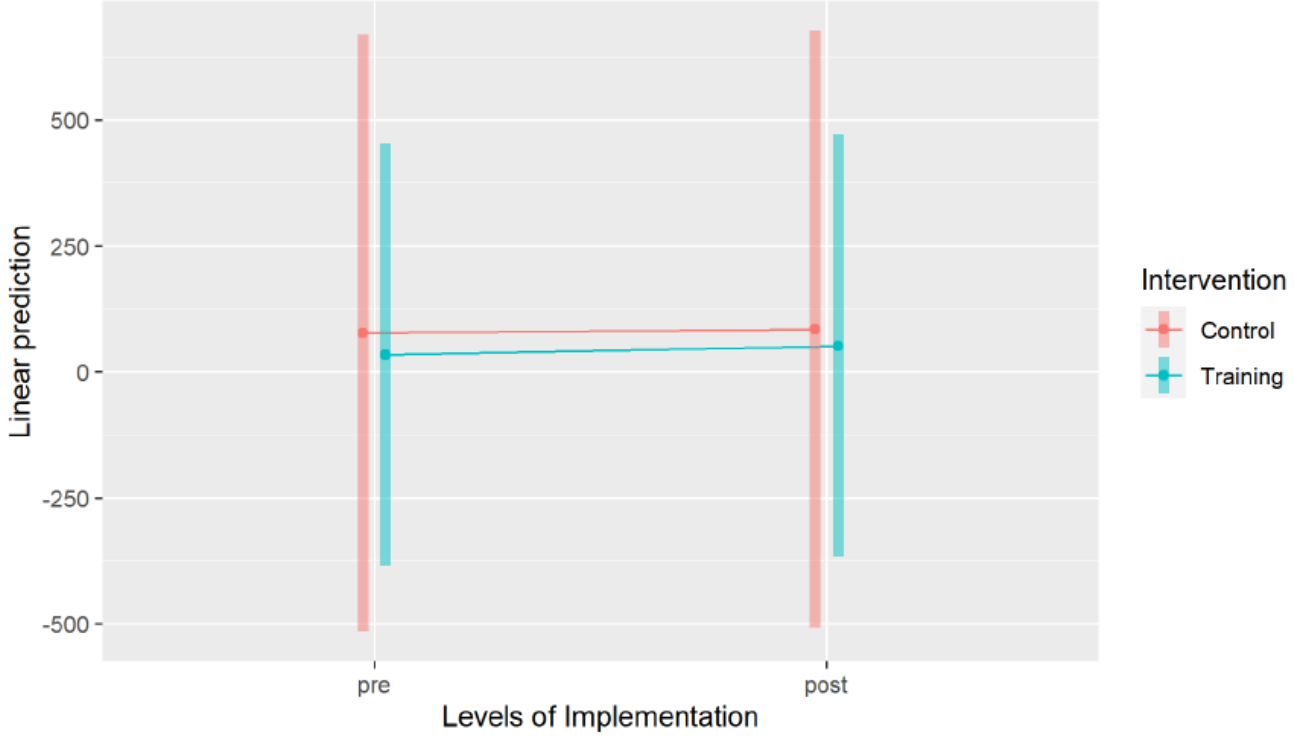


Figure 19. Number of specialling request before and after Safewards implementation at participating and control wards, with confidence intervals arounds the means included

PATIENT EXPERIENCE

Overall, patients spoke highly of the Safewards interventions. For many patients, being away from the familiar environment and facing many unknowns about their medical conditions can be frightening. During the patient interviews, patients spoke clearly about the positive experiences they had with the new initiatives, specifically the Know Each Other and Calming Methods interventions. The key themes identified included (1) improved patient-staff relationship by reducing power differential between staff and patients, (2) improved patient-patient interaction and led to positive ward atmosphere, (3) provided positive distraction.

KNOW EACH OTHER - IT HELPS TO REDUCE POWER DIFFERENTIAL BETWEEN STAFF AND PATIENTS

"I love it when the staff do that, put up their profiles and just their interests and their little things. And I like the fact that you know that they're happy to do that too, especially you know it just starts up, not really deep personal questions, but just the daily general questions, and yeah just you know it gives you more comfort and the stay more enjoyable I guess if you build that set of good repertoires with the nurses and all that sort of stuff. You become yeah a bit at ease more."

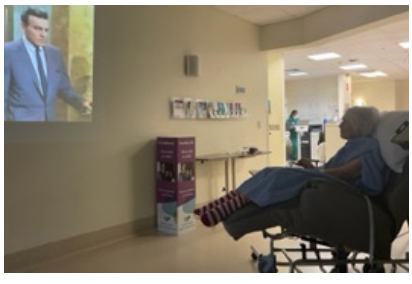
KNOW EACH OTHER - IT IMPROVES WARD ATMOSPHERE

"…you find out about the other patients…. So, it works well that way too, if they're friendly and they're up for a conversation you know, yeah, it works well that way. I've had so many good conversations with a lot of my roommates just by little things like that…. We're spending 24 hours a day with each other you know, yeah, I found it's very good that way too, it's not just between the staff and you, but it also helps with the ward atmosphere. You know the 3 patients I had at one stage, it was like we weren't even in hospital, it's like we were having a slumber party every night, it was just, it was like I knew them forever you know…"

"When I moved into this ward, I'm introduced straight away to people that are there and that never happened to me before I came to hospital you know… now I've come in here only over the last day or so and I've got to know Tony, Sophia over there, Chris wonderful and they've welcomed me, and we've had great discussions. Now at home compared with living in my street where I live, we had a number of, in the early years it was the same. We knew these people, you knew everybody…but when I left the other day in the ambulance there wasn't one soul other than my own family that would know that I was going to hospital. The modern people don't want to know, they mostly don't want to know us… So, I'm using that to reinforce what I'm saying about these guys I've met only overnight. How are you, Tony's over there, I woke up this morning how are you Graham did you have a good night. No-one ever said that you know and that really gets people like me who is having trouble you know coming to terms with how my life has changed dramatically within 18 months…"

CALMING METHODS - POSITIVE DISTRACTION

The calming space, activity booklets, sensory items and entertainment provided through electronic devices such as tablets created positive distraction to patients. The calming methods intervention did more than temporarily divert attention, it gave patients a comforting sense of familiarity, provided patients relief during anxious waiting time, and fostered a calming environment so patients could feel more at ease while family members were not around to support them in the ward.

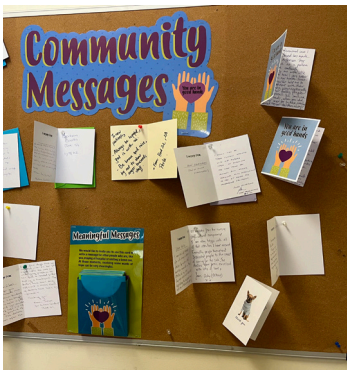


"That space is good, that's good for enhancing the intelligence of the patients… because they are looking at something different… it's like your mind is flying away. The movie that I asked them to put in is connected to me when I was younger … you forget about this current situation that you're in and you don't think anything about yourself you know…it made me feel happier…"

"I'm over 80 and I'm a bit old fashioned…I'm computer illiterate so it's no good asking me anything to do with computers… but these crosswords, I like them best, I could live on these…. Prior to getting this one today I've only had crosswords in some of them, used magazines that are around. Half the puzzles are done and half aren't but I got by. But this is good I've already done about four and these are my favourites… The last couple of weeks while I've been here I've been struggling to get through the books that are supplied because half the puzzles are done but these are brand new, this is a good initiative. Whoever is behind it I'm all in favour… it breaks up the time and it gives me, who has been in hospital a lot, a chance to let my brain have a bit of work. It's good, it's good…"

However, patients with limited mobility, had very limited exposure and experience of any of the Safewards interventions that already implemented in the wards. Their exposure to the Safewards interventions was depending on staff availability and initiatives.

CALMING METHODS - LIMITED ACCESSIBILITY WITHOUT THE HELP OF THE STAFF



"See if I was mobile and was able to walk around yes but I'm confined to my chair and bed, this is my house or room now. I have been past it when they've been taking me in my bed to get ultrasounds and all that and I take notice as we go along and yeah I thought gee that's a good idea, I could see the little cards on the board… good communication… if I was a communicator, and by that I mean, if I was able to get out to the noticeboard on my own, I can get out if I want to I've only got to ask the nurse and they'll wheel me out, but If I was given a card I would praise up the hospital and staff the way they conduct themselves and the way they look after me… staff and hospital (together) they've done wonders, I've loved it. You could say that…"

WARD SAFETY CLIMATE

Safety Climate Survey

A survey about staff perceptions and experiences of patient safety in their ward was used to evaluate the impact of Safewards model on safety climate of the ward. The University of Texas Safety Attitudes Questionnaire (SAQ) survey tool11, modified for the Victorian environment12, was used as the data collection instrument for this part of evaluation. The survey comprised a 42-item set of rating questions, supplemented with one open text question, and a set of demographic questions (Appendix 2). Sexton et al11 defined six factor-analytically derived attitudinal domains, containing items from the SAQ. The survey measures the following six patient safety domains:

- Teamwork Climate: Perceived quality of collaboration between personnel.
- Safety Climate: Perceptions of a strong and proactive organisational commitment to safety.
- Stress Recognition: Acknowledgement of how performance is influenced by stressors.
- Job Satisfaction: Positivity about the work experience.
- Perceptions of Management: Approval of managerial action.
- Work Conditions: Perceived quality of the work environment and logistical support.

Participating staff

All staff rostered to the participating wards during the evaluation period were encouraged to complete the survey online. Recruitment was conducted through emails or in-person information session. Surveys were distributed between 1 March 2022 and 1 April 2022 (pre-implementation); 17 October 2022 and 7 December 2022 (post-implementation).

We received a total of 68 (Site 1, n=28; Site 2, n=40) completed surveys before the implementation and 42 (Site 1, n=25; site 2, n=17) completed surveys after the implementation. The final sample sizes and response rate were as follow:

Table 7. Safety Climate Survey Response Rate

Participating site	Estimated staff	Responses received (pre-implementation)	Responses received (post-implementation)	Response rate (pre-implementation)	Response rate (post-implementation)
Site 1	120	28	25	23%	21%
Site 2	120	40	17	33%	14%

Despite our best effort, the response rate in the Safety Climate survey is relatively low. Staff shortages during the Omicrons outbreak, high staff turnover rate during the evaluation phase, and staff fatigue of changes and documentation had all contributed to the very low recruitment rate before and after implementation. Whilst we tried to recruit the same individuals for the pre and post implementation survey, the high staff turnover rate had limited our ability to determine the difference between the paired values. Since staff participation was totally voluntary, findings from these surveys might subject to self-selection bias.

KEY FINDINGS

A domain score is calculated by taking the average result for all comprising items for each respondent. The high domain score indicated good performance as it represented high agreement to the items within the domain. The mean domain scores pre and post implementation were compared using Student's t test. While there is no sufficient evidence to show that there is a significant difference in the overall domain ratings before and after implementing the Safewards interventions, all the domain scores have increased after the implementation of the Safewards interventions. Notably, safety climate domain has the highest increment before and after the implementation. While focus group participants expressed improved ward culture post implementation of the piloted Safewards interventions, it is uncertain whether the four Safewards interventions played the major role in improving the overall ward safety climate in the participating wards.

Table 8. Overall domain score before and after implementation of Safewards interventions

Domain	Mean domain score (pre-implementation)	Mean domain score	P value
(post-implementation)	P value	3.94	0.87
Stress recognition	3.89	3.96	0.68
Teamwork climate	3.82	3.88	0.61
Safety climate	3.79	3.91	0.33
Working condition	3.71	3.77	0.68
Perceptions of management	3.54	3.58	0.79

For each individual item score, there was insufficient evidence to show that there is a significant difference in the item score before and after the implementation of the Safewards interventions. The only item score that has significantly increased after the implementation of the Safewards interventions is the item in the teamwork domain: "I have the support I need from other personnel to care for patients" which aligned with the findings from the focus group where staff felt that they felt being supported to care for patients with behavioural issues through the implementation of the Safewards interventions.

> *"…we work more as a team now…if you see a colleague who is you know struggling with a delirious [patient], we'll always mention maybe you should try this or try and give him this [item from Calming Methods], or do that…"*

SUMMARY

In this evaluation, we found all short-term outcomes were archived in three out of four participating wards. Based on qualitative data from the focus group discussions, the four piloted Safewards interventions are effective in resolving conflicts and preventing aggression in the acute care wards.; and improve ward safety climate. However, this evaluation does not have sufficient statistical power to determine the true effects of the Safewards interventions on the conflict and containment rates. This limitation could be due to low official incident report rates for aggression and the use of restrictive interventions i.e., mechanical restraint and security responses at the participating wards during the project period. As mentioned in previous section, staff reported the use of restrictive measures such as sedative medication and mechanical restraint are the very last resort. De-escalation with distraction is the most commonly used approached in the acute care ward settings. Patients shared similar views and had expressed gratitude with the new initiatives. The interventions had provided some sense of comfort and had improved their experience in the wards.

It is important to note that this is a pilot project looked at what worked in terms of the Safewards model to build the associated evidence base rather than establishing long term impacts. Moreover, extensive quantitative evidence of medium and long-term impacts is not expected in less than 6 months after full project implementation (i.e., when all four interventions were implemented).

While there was some resistance among staff at the beginning of the project, we found no unintended and negative consequences after all four Safewards interventions were implemented successfully in the participating wards. On the other hand, the evaluation found substantial qualitative impacts, including positive impact on the wellbeing of staff and patients.

SUSTAINABILITY

INCREASED COMMITMENT AND OWNERSHIP

Despite the scope and limitations to sustainability, this evaluation found emerging evidence of sustainability (i.e., the benefits of the interventions are highly likely to continue beyond the pilot project). There is clear evidence of increased acceptability, commitment to integrate the Safewards interventions into their clinical practice, and ownership of the project at each participating ward."

> *"I think at the start people thought it was extra work…but when you get down to the nitty gritty, it's stuff we were already doing… And it's lovely to have that focus on wellbeing and the mental health too, as well as your space… I think it's normalised now"*

Crucially, there is a strong commitment of the ward leadership team to sustain the Safewards interventions implementation and education in the ward. For example, Ward A has incorporated the "Neat, Smart and Tidy" intervention into their daily handover process, staff would be assigned a role to ensure the cleanliness and tidiness of the allocated beds during the afternoon shift.

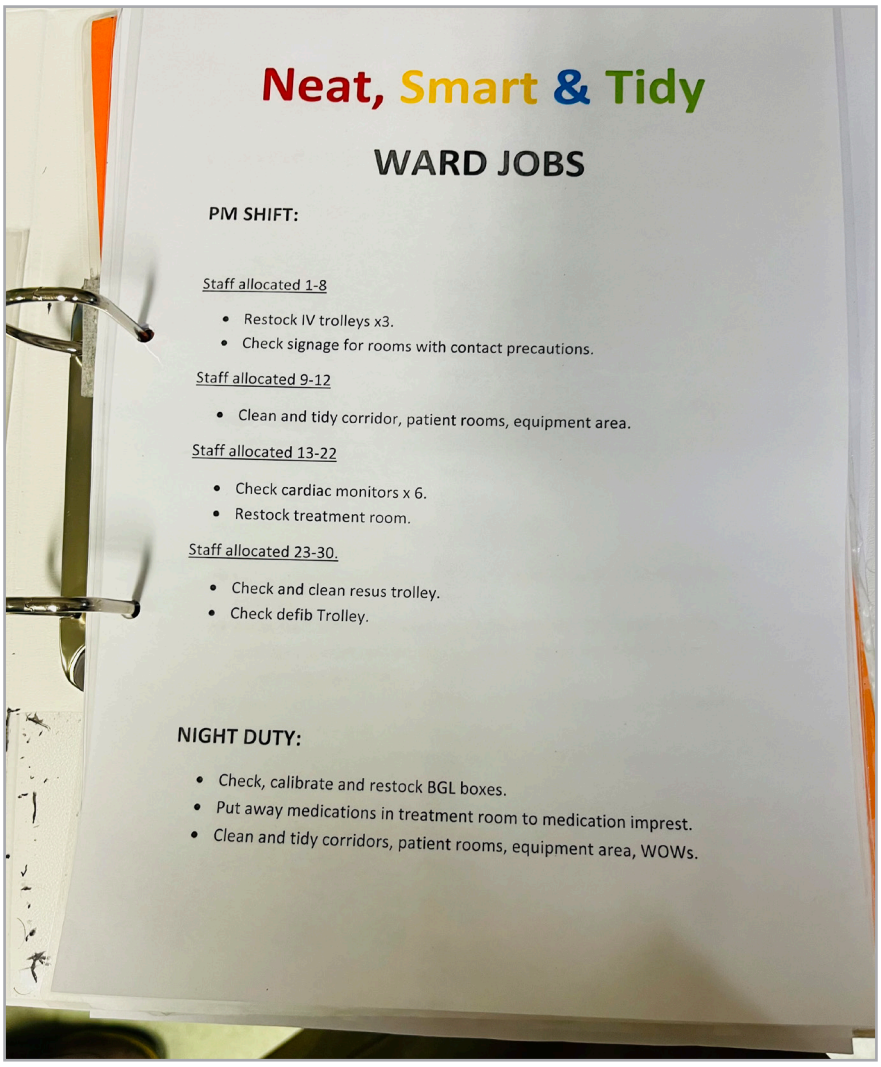
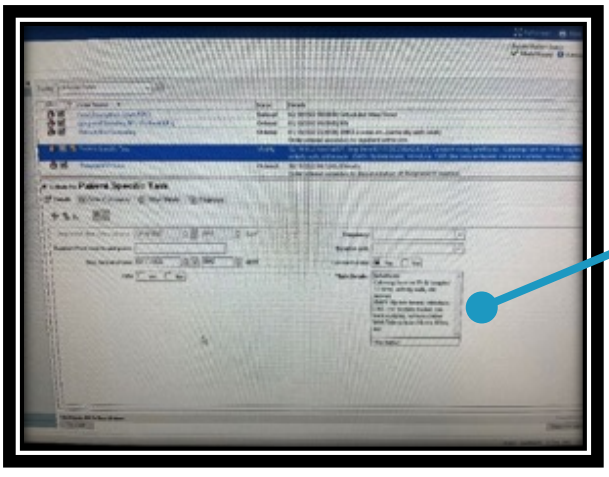


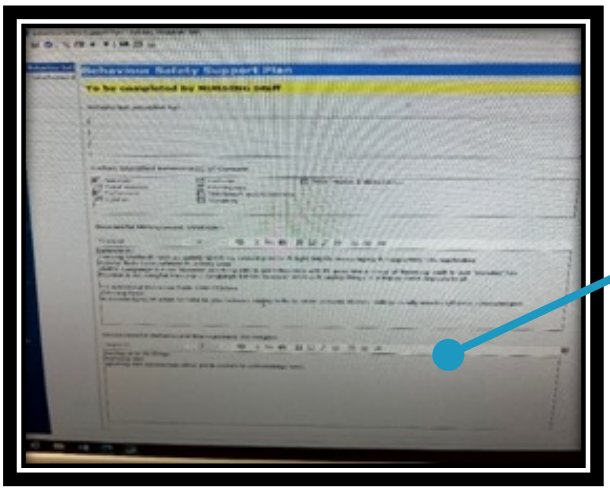
Figure 20. Example of Neat, Smart and Tidy Intervention

Ward C has introduced a new nursing practice to encourage staff to include documentation of the Safewards interventions in the electronic medical record (EMR). Every new nursing staff will be mentored by a senior staff member and this new practice to document the Safewards interventions in the EMR has been included in the new staff orientation training package.



Safewards:
Calming (Calming method): Turn on TV & 'soapies'
1:1 time, activity walk, old movies
KMKY (Knowing Me Knowing You): Update board, introduce
CNY (Clean, Neat and Tidy): Use bedside basket, ties back curtains, remove clutter
MM (Meaningful Messages): Take to board & encourage filling out

Figure 21. Patient Specific Task



Safewards:
Calming methods such as quietly speaking, reducing noise & light (night), encouraging & supporting safe way finding
Activity: Balls from Safewards activity area
KMKY: Language barrier however speaking with & spending time with patient gives him a sense of 'knowing' staff & staff 'knowing him
Positive& meaningful messages: Language barrier however smiling & saying things in a happy voice appeal to patient

Figure 22. Behaviour Safety Support Plan

POTENTIAL THREATS TO SUSTAINABILITY

1. Interventions with less noticeable impact on patient care might be forgotten
Despite high implementation fidelity, some staff voiced their concerns regarding the sustainability of the "Meaningful Messages" intervention because they doubted the benefits of this intervention for their patient populations.

> *"Meaningful messages, I feel like it's just a nice thing, I guess for the patient who's writing it down, it's making them feel like oh yeah I actually believe this and this is how highly I think of them. But like for everyone else that don't read it or don't know, they're like I haven't had that experience. So it's a bit different…"*

> *"I see value in three of them, I don't see value in the meaningful messages one, just because it doesn't do much for our [patient]cohort."*

2. Lack of awareness among the non-full-time staff
Whilst full time nursing staff were aware of the Safewards interventions, other part-time or casual staff might not have the opportunity to attend the education session or be informed about the Safewards Acute Care project. It has been a concern that the lack of awareness among the casual staff will reduce the implementation effectiveness.

> *"…some people don't really even know that they're there, especially we have a lot of early career nurses, and a lot of agency, bank, pool staff who've never seen it before, or they think it's part of a program, so like the delirium people like, even when – we had a patient go to a different ward, and we sent an iPad with him, and when we called to ask for it back the other day, because he went to another ward, they said oh we gave that to the delirium consultant, because isn't it theirs. Like they had no idea. And we were like oh no that's actually from our ward. So, I think just a little bit more awareness about it. And people will probably use it more if they know about it."*

3. Lack of awareness among patients
During the patient interviews, the evaluation team found that almost all patients had not been aware that Safewards interventions were implemented in the wards. While this is just a lack of 'brand' recognition of Safewards, it could affect to what extent a patient or carer can initiate or involve in the implementation of the Safewards interventions. One of the NUM also acknowledged the lack of awareness among patients and identified that as one of the issues that needed to be addressed.

> *"I think the patients would be appreciative of the interventions if they were aware of what we were doing as well.* ***So, at the moment it's very reliant on their nurse, does that nurse have buy-in to this project and does this nurse want to show them the interventions and to talk to them about it.*** *Or do they have or is one of the leads looking after them and able to do that you know just second nature. That's what we want all staff to be able to do is just, to work it into their everyday conversations with patients."*

SUMMARY

Overall, there are strong examples of commitment from the ward leadership team to continue the Safewards interventions beyond the pilot project. As mentioned in the Feasibility section, persistent leaders are the main drivers for the success of the implementation. Similarly, their commitments to providing a structured plan to educate new staff and incorporating the interventions into clinical practice have provided solid evidence of sustainability. In addition, by increasing awareness among non-full-time staff, patients and carers will potentially improve sustainability of the Safewards interventions that already implemented.

CONCLUSIONS

SUMMARY

Four Safewards interventions were successfully implemented in three out of four participating wards despite the unpredictability, staff shortages, and staff burnout during the COVID-19 pandemic. Majority of the focus group participants agreed that the Safewards Model and the adapted interventions were highly relevant and acceptable in the acute care wards. Subsequently, the barriers of implementation were able to be overcome by allowing staff to have more time to understand the purpose of each intervention and to experience the positive impact of the interventions.

Both patients and staff expressed positive attitudes about the Safewards interventions. The Safewards interventions were considered beneficial to improve patient quality of care and staff wellbeing, specifically the 'Calming Methods' intervention. Despite insufficient sample size in determining the effect of the Safewards interventions on ward safety climate, staff participated in the focus group discussions and interviews unanimously agreed that the Safewards interventions had positive effect on their working environment and felt more supported at work, which led to improve in staff wellbeing. The implementation of these interventions also allowed nursing staff to realign their focus to the delivery of compassionate care in their daily works. The Safewards interventions have empowered staff by providing more resources to prevent and de-escalate conflicts. Furthermore, participants also shared their success stories in preventing conflicts and aggression by using the Safewards interventions. The benefit of reducing conflicts in the ward has been considered the main driving force to sustain the implementation of the Safewards interventions.

Once implemented successfully, the interventions are incorporated into the routine practice and staff had expressed positive attitudes about the sustainability of these interventions. The interventions are highly sustainable because all interventions have been designed according to local contexts. There is solid evidence of strong commitment of the ward leadership team to sustain the Safewards interventions implementation and education in the ward.

LESSONS LEARNED

- A designated project coordinator for the Safewards pilot project is the key to a successful implementation.
- Champions are critical to the success of early adoption.
- Having a group of champions had allowed these champions to support each other, reduced implementation fatigue, and provided a structured opportunity of training for new staff.
- By introducing the project at the commencement phase to all clinical staff would promote collaboration among multidisciplinary staff.
- Incidents of conflict and containment (e.g., code grey) that are sufficiently severe to be officially reported are relatively rare in acute care wards. Hence, a longer time period (e.g., 12 months before and 12 months after implementation) is required to draw a conclusion on the impact of the Safewards interventions on the conflict and containment.
- Mechanical restraint is hardly applied for patients in acute care wards; hence, it is not a sensitive outcome measure for this evaluation.
- Implementing each intervention in a small scale, e.g., few patient beds at a time, had allowed the team to refine the intervention to suit the needs of both staff and patients and also more cost-efficient than rolling out the intervention to all beds simultaneously.
- Collection of staff and patient feedbacks at the early phase of the implementation had provided powerful account of Safewards interventions in practice. Staff agreed that patient feedbacks and positive responses towards the interventions had increased staff engagement.
- Patients with limited mobility had minimal experience of the Safewards interventions and highly dependent on staff availability and initiative to benefit from the Safewards interventions.
- Online learning modules are useful to allow self-pace learning. However, online learning was only effective in reaching highly motivated staff, face-to-face in-service education were highly preferable by majority of the staff.

RECOMMENDATIONS

- Existing official incident report rates are less sensitive to the effects of the Safewards interventions because staff differ in the thresholds at which official incident reports are made; therefore, customised research data collections tools would have been ideal to strengthen the findings of future studies.
- When time commitment and resources are limited, interventions that are highly relevant and acceptable to staff (e.g., calming methods) should be prioritised to sustain staff engagement and motivate staff to learn more about the Safewards Model and other interventions.
- Interventions could be further refined by improving accessibility for patients with limited mobility or with disability.
- A hybrid learning model utilising both online modules, informal small group mentoring, and in-person in-service training sessions will be more effective to reach majority of the target audiences.
- In-person refresher course for Safewards model will reinforce staff understandings of the concept and theory behind the model, which will strengthen and sustain staff engagement.
- An integrate education system to 1) continuously remind staff about the interventions, and 2) educate new or short-term staff about the Safewards interventions, is crucial to sustain the implementation.
- A multidisciplinary team involvement will allow the intervention to be integrated as part of the ward culture and promote sustainability.
- By incorporating Safewards interventions as part of the routine documentation in the EMR, staff can share information regarding useful tips to de-escalate patients e.g., which calming method tool works particularly well to calm the patient down.
- Current implementation is highly nursing staff driven, a mechanism to promote involvement among patients or carers in the interventions e.g., encourage patients or carers to complete the Know Each Other profile themselves, will greatly enhance the effectiveness and sustainability of the implementation.
- A repeated evaluation in 12 month-time will be able to provide useful information on medium- and long-term impacts as well as sustainability.

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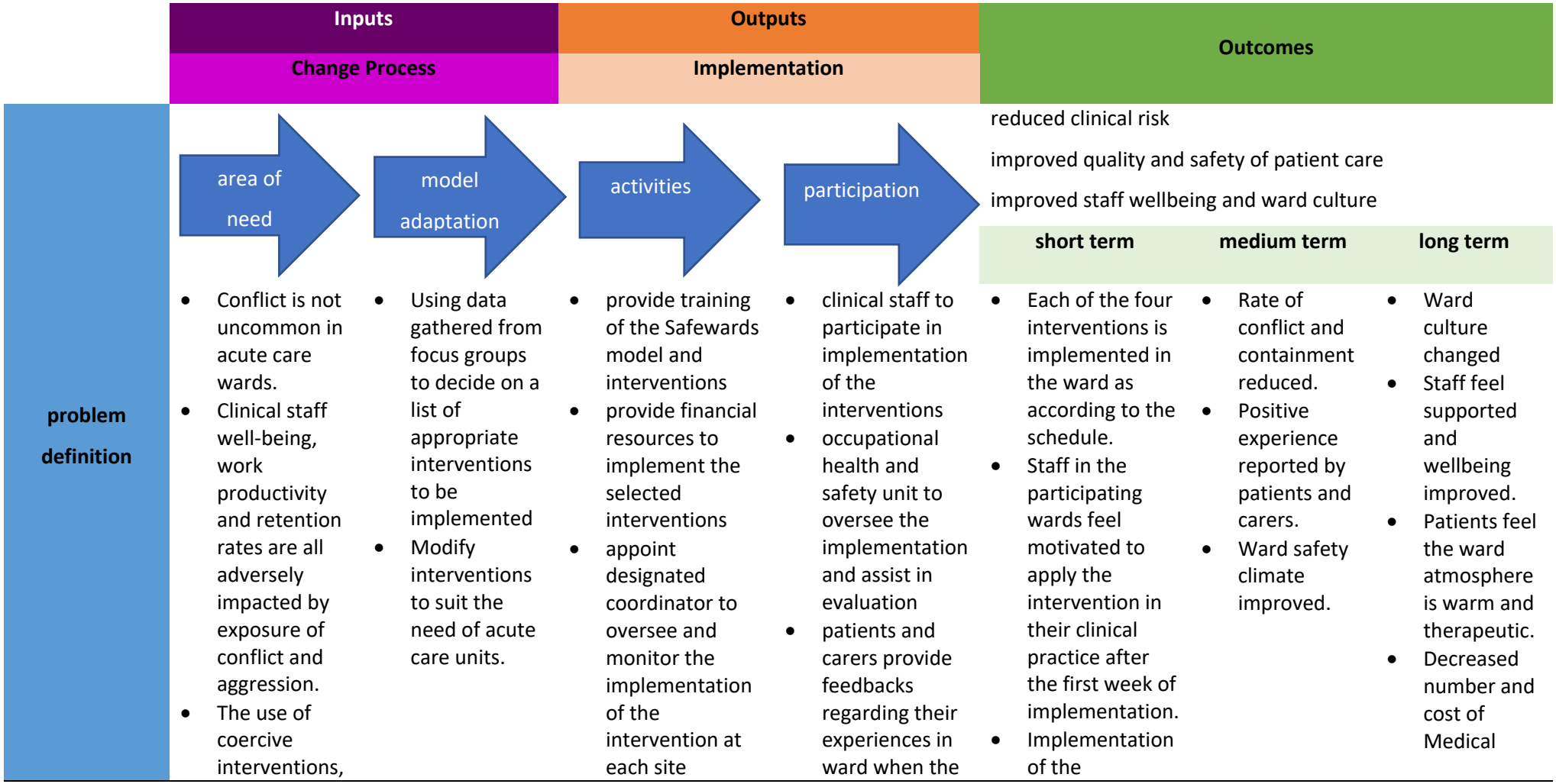
Appendix 1

Program Logic



	including the activation of clinical and security responses to contain behaviour (a 'code grey event)', are associated with negative emotional responses and physical injury to both staff and patients.		interventions are implemented	intervention created awareness of the Safewards model and motivation to learn more about it.	Indemnity claims.

Appendix 2

Safety Climate Survey

A Staff Survey for Measuring Patient Safety

This survey asks about your perceptions and experiences of patient safety in your health service. There are no right or wrong answers; it is your opinion that counts. The survey is anonymous. All responses will be treated confidentially, and no individual will be identified.

This survey is designed to be completed by selected staff members who work in, or for, this health service. This includes medical and nursing staff, other health professionals, management, administration, support staff, technical staff, and any other staff who support patient care. All views and opinions regarding patient safety are important, even if you are not involved in direct patient care.

Some definitions:

- **Patient**: client, resident or consumer in the health system;
- **Safety**: condition of being safe, free from danger, risk or injury;
- **Error**: any mistake in the delivery of care by any staff member regardless of the outcome.

Please respond to each statement by placing a cross **(not a tick)** in the appropriate box.

Think about the health service area or unit you work in most when rating your level of agreement with the following statements. **Place a cross in the appropriate box.**	Strongly Disagree 1	Disagree 2	Neither Agree Nor Disagree 3	Agree 4	Strongly Agree 5	Not Applicable 6
1. I would feel safe being treated here as a patient.	☐	☐	☐	☐	☐	☐
2. I like my job.	☐	☐	☐	☐	☐	☐
3. Errors are handled appropriately in my work area.	☐	☐	☐	☐	☐	☐
4. This health service does a good job of training new personnel.	☐	☐	☐	☐	☐	☐
5. All the necessary information for important decisions is routinely available to me.	☐	☐	☐	☐	☐	☐
6. Working in this health service is like being part of a large family.	☐	☐	☐	☐	☐	☐
7. Nurse input is well received in my work area.	☐	☐	☐	☐	☐	☐
8. Health service management supports my daily efforts.	☐	☐	☐	☐	☐	☐
9. I receive appropriate feedback about my performance.	☐	☐	☐	☐	☐	☐
10. In my work area, it is difficult to discuss errors.	☐	☐	☐	☐	☐	☐
11. Clinical handover is common in my work area.	☐	☐	☐	☐	☐	☐
12. This health service is a good place to work.	☐	☐	☐	☐	☐	☐
13. The levels of staffing in my work area are sufficient to handle the number of patients.	☐	☐	☐	☐	☐	☐

14. Decision making in my work area frequently utilises input from relevant personnel.	☐	☐	☐	☐	☐	☐
15. I am encouraged by my colleagues to report any patient safety concerns I may have.	☐	☐	☐	☐	☐	☐

Think about the health service area or unit you work in most when rating your level of agreement with the following statements. **Place a cross in the appropriate box.**	Strongly Disagree 1	Disagree 2	Neither Agree Nor Disagree 3	Agree 4	Strongly Agree 5	Not Applicable 6
16. The culture in my work area makes it easy to learn from the errors of others.	☐	☐	☐	☐	☐	☐
17. This health service deals constructively with problem staff/personnel.	☐	☐	☐	☐	☐	☐
18. In my work area, it is difficult to speak up if I perceive a problem with patient care.	☐	☐	☐	☐	☐	☐
19. When my workload becomes excessive, my performance is impaired.	☐	☐	☐	☐	☐	☐
20. I am provided with adequate, timely information about events in the health service that might affect my work.	☐	☐	☐	☐	☐	☐
21. I know the proper channels to direct questions regarding patient safety.	☐	☐	☐	☐	☐	☐
22. I am proud to work at this health service.	☐	☐	☐	☐	☐	☐
23. Disagreements in my work area are resolved appropriately (i.e. not who is right, but what is best for the patient).	☐	☐	☐	☐	☐	☐
24. I am less effective at work when fatigued.	☐	☐	☐	☐	☐	☐
25. I am more likely to make errors in hostile or tense situations.	☐	☐	☐	☐	☐	☐
26. I have the support I need from other personnel to care for patients.	☐	☐	☐	☐	☐	☐
27. It is easy for personnel in my work area to ask questions when there is something that they do not understand.	☐	☐	☐	☐	☐	☐
28. The doctors and nurses in this health service work together as a well-coordinated team.	☐	☐	☐	☐	☐	☐
29. I am frequently unable to express disagreement with doctors.	☐	☐	☐	☐	☐	☐
30. Morale in my work area is high.	☐	☐	☐	☐	☐	☐
31. Trainees in my discipline are adequately supervised.	☐	☐	☐	☐	☐	☐
32. I know the first and last names of all the personnel I worked with during my last shift.	☐	☐	☐	☐	☐	☐
33. Fatigue impairs my performance during emergency situations.	☐	☐	☐	☐	☐	☐
34. Important issues are well communicated at shift changes/handovers.	☐	☐	☐	☐	☐	☐
35. Personnel frequently disregard rules or policies (e.g. treatment protocols/clinical pathways, sterile field, etc.) that are established for my work area.	☐	☐	☐	☐	☐	☐
36. My suggestions about safety would be acted upon if I expressed them to management.	☐	☐	☐	☐	☐	☐
37. This health service is doing more for patient safety now, than it did one year ago.	☐	☐	☐	☐	☐	☐
38. I am satisfied with the quality of collaboration that I experience with nurses in my work area.	☐	☐	☐	☐	☐	☐
39. Briefing other personnel before the start of a shift or before a procedure is an important part of patient safety.	☐	☐	☐	☐	☐	☐
40. Leadership is driving us to be a safety-centered organisation.	☐	☐	☐	☐	☐	☐

41. Executive management does not knowingly compromise the safety of patients.	☐	☐	☐	☐	☐	☐
42. Line managers in my work area do not knowingly compromise the safety of patients.	☐	☐	☐	☐	☐	☐
43. What are three (3) ways in which your health service can improve patient safety? 1. 2. 3.						

Appendix 3

Safety Climate Survey Findings

Mean Ratings by Domain

All items in the questionnaire are grouped according to the domain to which they contribute. Specific thresholds are used to interpret the findings. If an item score is 4.0 or over, it is considered high agreement with the item. If an item score is below 2.0, it is considered low agreement with the item.

Table 1. Job satisfaction

Item	Implementation status	Number of responses	Mean	P value
I like my job.	Pre	67	4.12	0.91
	Post	40	4.10	
I am proud to work at this health service.	Pre	68	3.93	0.79
	Post	42	3.98	
This health service is a good place to work.	Pre	66	4.05	0.61
	Post	42	3.95	
Working in this health service is like being part of a large family.	Pre	68	3.85	0.76
	Post	42	3.79	
Morale in my work area is high.	Pre	68	3.54	0.33
	Post	41	3.76	

Table 2. Perceptions of management

Item	Implementation status	Number of responses	Mean	P value
Executive management does not knowingly compromise the safety of patients.	Pre	65	3.28	0.91
	Post	40	3.30	
I am provided with adequate, timely information about events in the health service that might affect my work.	Pre	66	3.58	0.46
	Post	41	3.71	
Health service management supports my daily efforts.	Pre	67	3.63	0.49
	Post	42	3.76	

Table 3. Safety climate

Item	Implementation status	Number of responses	Mean	P value
I know the proper channels to direct questions regarding patient safety.	Pre	68	3.96	0.5
	Post	42	4.07	

I am encouraged by my colleagues to report any patient safety concerns I may have.	Pre	68	4.18	0.89
	Post	41	4.20	
Errors are handled appropriately in my work area.	Pre	67	4.19	0.62
	Post	41	4.27	
Line managers in my work area do not knowingly compromise the safety of patients.	Pre	67	3.63	0.36
	Post	42	3.45	
I would feel safe being treated here as a patient	Pre	65	3.88	0.41
	Post	38	4.05	
Personnel frequently disregard rules or policies (e.g. treatment protocols/clinical pathways, sterile field, etc.) that are established for my work area. *	Pre	67	3.54	0.28
	Post	42	3.76	
The culture in my work area makes it easy to learn from the errors of others.	Pre	68	3.79	0.71
	Post	42	3.86	
I receive appropriate feedback about my performance.	Pre	66	3.88	0.98
	Post	40	3.88	
Leadership is driving us to be a safety-centered organisation.	Pre	67	3.78	0.15
	Post	41	4.05	
This health service is doing more for patient safety now, than it did one year ago.	Pre	58	3.48	0.47
	Post	33	3.64	
My suggestions about safety would be acted upon if I expressed them to management.	Pre	66	3.61	0.29
	Post	42	3.81	
In my work area, it is difficult to discuss errors. *	Pre	67	3.55	0.25
	Post	41	3.32	
The levels of staffing in my work area are sufficient to handle the number of patients.	Pre	66	1.16	0.43
	Post	41	1.18	

* This item was negatively worded in the survey, and results have been reverse-scored such that a low number indicates reduced patient safety.

Table 4. Stress recognition

Item	Implementation status	Number of responses	Mean	P value
I am less effective at work when fatigued.	Pre	68	3.96	0.37
	Post	42	4.14	
	Pre	67	3.84	0.48

When my workload becomes excessive, my performance is impaired.	Post	41	3.98	
I am more likely to make errors in hostile or tense situations.	Pre Post	66 41	3.82 3.85	0.87
Fatigue impairs my performance during emergency situations.	Pre Post	64 41	3.72 3.73	0.95

Table 5. Teamwork climate

Item	Implementation status	Number of responses	Mean	P value
Briefing other personnel before the start of a shift or before a procedure is an important part of patient safety.	Pre Post	65 40	4.31 4.33	0.89
It is easy for personnel in my work area to ask questions when there is something that they do not understand.	Pre Post	68 41	4.07 4.05	0.86
Clinical handover is common in my work area.	Pre Post	66 40	4.48 4.35	0.30
I am satisfied with the quality of collaboration that I experience with nurses in my work area.	Pre Post	68 40	3.74 3.88	0.40
I have the support I need from other personnel to care for patients.	**Pre** **Post**	**66** **41**	**3.68** **4.02**	**0.04**
Nurse input is well received in my work area.	Pre Post	66 42	3.94 3.98	0.84
Decision making in my work area frequently utilises input from relevant personnel.	Pre Post	68 41	3.87 3.80	0.72
I know the first and last names of all the personnel I worked with during my last shift.	Pre Post	68 41	3.06 2.95	0.63
Important issues are well communicated at shift changes/handovers.	Pre Post	68 41	3.87 3.90	0.85
The doctors and nurses in this health service work together as a well-coordinated team.	Pre Post	66 42	4.00 4.12	0.40
Disagreements in my work area are resolved appropriately (i.e. not who is	Pre Post	67 42	3.84 3.86	0.89

right, but what is best for the patient).				
In my work area, it is difficult to speak up if I perceive a problem with patient care.*	Pre Post	68 41	3.41 3.68	0.14
I am frequently unable to express disagreement with doctors.*	Pre Post	68 42	3.29 3.29	0.97

* This item was negatively worded in the survey, and results have been reverse-scored such that a low number indicates reduced patient safety.

Table 6. Working conditions

Item	Implementation status	Number of responses	Mean	P value
Trainees in my discipline are adequately supervised.	Pre Post	65 38	3.68 3.79	0.59
All the necessary information for important decisions is routinely available to me.	Pre Post	67 42	3.90 3.79	0.53
This health service does a good job of training new personnel.	Pre Post	67 41	3.61 3.71	0.64
This health service deals constructively with problem staff/personnel.	Pre Post	68 42	3.49 3.48	0.96