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Evidence Check

Management of highly acute mental illness and acute severe behavioural disturbance

An Evidence Check rapid review brokered by the Sax Institute for NSW Ministry of Health—October 2020.

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This report was prepared by: Justine Fletcher, Sanne Oostermeijer, Bridget Hamilton, Lisa Brophy, Catherine Minshall, Carol Harvey, Christine Migliorini, Nina Whittles, Megan Jacques, Eimear Muir-Cochrane, Tessa-May Zirnsak, Emma Morrisroe

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Models of care and practice for the inpatient management of highly acute mental illness and acute severe behavioural disturbance

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This report was prepared by Justine Fletcher, Sanne Oostermeijer, Bridget Hamilton, Lisa Brophy, Catherine Minshall, Carol Harvey, Christine Migliorini, Nina Whittles, Megan Jacques, Eimear Muir-Cochrane Tessa-May Zirnsak, Emma Morrisroe

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Executive summary

Background

Mental Health Intensive Care Units (MHICU) are designed to treat and care for patients with clinical complexity, high acuity and acute severe behavioural disturbance (ASBD). Here ASBD refers to behaviour that places the patient or others at imminent risk of injury or death; it includes extreme distress, aggression and serious self-harm in the context of mental illness.

There has been a great deal of research to define and understand serious behaviours of concern in mental health inpatient units, and how and why they emerge, because of the significant impact they can have on the individual, other inpatients, staff and the ward environment. It is evident that causes for ASBD are multifaceted, including a complex interaction between the legal/policy context, ward environment, interactions between staff and patients, and symptoms of psychiatric illness. This complexity is captured in the Safewards model.

Given the complexity underpinning ASBD, the models of care and interventions to support people who experience high acuity and ASBD are also complex and varied. This Evidence Check rapid review aims to assess peer-reviewed literature in relation to models of care and treatment strategies for the management of high acuity and ASBD, which will inform options for the refinement of the MHICU model.

This Evidence Check addresses the following questions:

Question 1: What hospital-based models of care or practices have been shown to be most effective in reducing high acuity and acute severe behavioural disturbance in mental health inpatients?

Question 2: What have been the barriers and enablers to implementing effective models of care to reduce high acuity and behavioural disturbance in mental health inpatients?

Summary of methods

The review team searched both the peer-reviewed and grey literature for relevant literature published between January 2010 and August 2020. One hundred papers met the criteria for inclusion in the Evidence Check; given the rapid review methodology we reduced our time span to include only papers from 2015–2020. We also conducted a hand search to identify other relevant papers, giving us a total of 58 papers for review.

We conducted a desktop search for relevant grey literature, finding four documents: two submissions to the Royal Commission into Victoria's Mental Health System (from Eastern Health and the Office of the Public Advocate) one literature review from the Melbourne Social Equity Institute and one review by the NSW Nurses and Midwives Association.

Key findings

Question 1: What hospital-based models of care or practices have been shown to be most effective in reducing high acuity and acute severe behavioural disturbance in mental health inpatients?

To assess the evidence quality of these papers we used the Hierarchy of Evidence for Promising Research Practices, developed by the Canadian Homelessness Research Network and designed specifically to consider models of care and interventions in complex settings where it is challenging to undertake RCT-level research. Given the number of papers, we rated the quality of related groups of papers where this was appropriate.

Two sets of evidence related to models of care received a rating of best practice, **Safewards** (12 papers) and **Improving the therapeutic milieu of the wards** (five papers). The Safewards papers reported the use of the highest quality research methodology including a cluster RCT and a range of pre–post designs. Safewards is a model and 10 interventions designed to influence conflict and containment on acute inpatient wards; it is highly applicable to the NSW context. The focus of some of the evidence for improving the therapeutic milieu of wards involved complex series of interventions designed to reduce seclusion and restraint, often by reducing triggers of aggression in the environment.

The **Six Core Strategies© and ReSTRAIN YOURSELF** papers were rated together as promising/best practice (four papers). These papers describe a set of strategies designed to influence the organisation, ward routines and individual staff, involving consumers throughout. Each of the strategies is supported by research evidence, of variable quality and quantity. For example, sensory modulation has a reasonable evidence base and literature outlining key objectives. A key benefit of these two models of care is their alignment with contemporary thinking and policy based on recovery-oriented trauma-informed care and the key role consumers play in the development of services.

There were five papers reporting small-scale studies of **sensory modulation** and this set of evidence received a rating of promising practice. Reducing aggression, assault and subsequent use of restrictive practices can be achieved by altering the ambient sensory environment, especially by reducing noise and light and introducing music and other gentle stimulus.

The themes of **trauma-focused interventions** and **cognitive behavioural interventions** (three papers) were rated as promising/emerging practice. The three studies were variable in content and setting, with single reports of interventions including: training in brief solution-focused therapy to support staff implementing trauma-informed care; eye movement desensitisation and reprocessing; and cognitive behavioural suicide prevention therapy. The latter two studies are novel in their application in a mental health inpatient setting.

Nine themes were rated as emerging practice. The papers in this group varied more substantially in research rigour and demonstrated effectiveness, including the sets of evidence for **PRN and adjuvant medication, and de-escalation**. In contrast, other papers reported novel interventions such as equine therapy, reformed practices of therapeutic engagement in constant special observation and the association of 'no smoking' policies with aggression in an inpatient setting. The team approaches, the Co-Operative Inquiry model and the Inpatient Service Support Team (ISST) model are emerging practices. **Post event debriefing** is recognised as emerging practice itself, as well as being central to **Six Core Strategies©**. Improvements in current practices suggest enhancements of therapeutic interactions when maintaining **close observations** for safety reasons as an emerging practice. Several structured approaches centre on risk and risk assessment, including the Dynamic Appraisal of Situational Aggression and an adaption of harm minimisation, which are considered emerging practices.

Good **design principles** are recommended to produce appealing physical environments that are welcoming, liveable and not crowded, and include private spaces and gardens, with ample opportunity for choice of indoor and outdoor recreation. There should be accessible sensory rooms and private and safe bedrooms. Wherever possible there should be open access to the ward rather than locked doors. Tied specifically to the reduction of ASBD, aspects of good design are considered emerging practices.

Question 2: What have been the barriers and enablers to implementing effective models of care to reduce high acuity and behavioural disturbance in mental health inpatients?

The papers reviewed generally did not outline clearly the implementation barriers and enablers, although key themes were highlighted in the discussion, relating to the importance of enabling training, ensuring buy-in from stakeholders at all levels of the organisation, and assessment of progress via fidelity checks, for example. Common themes that reflect barriers to implementation are lack of management support and lack of engagement from front-line staff.

Gaps in the evidence

It is important to acknowledge that there are many challenges to conducting high quality and credible research in this area of mental health practice. Consequently, we identified a number of gaps in the evidence; for example, gaps in co-production, peer support, needs of diverse populations, and research into the implementation of recovery-oriented practice and trauma-informed care. Further, practices that may support prevention of behavioural disturbance such as therapeutic relationships, ward design and environment, appropriate team configuration and meaningful activity are not well articulated or understood.

Conclusion

In this Evidence Check we aimed to review literature that helps to address acute severe behavioural disturbance in patients admitted to Mental Health Intensive Care Units. We have reviewed papers

covering a wide range of themes, from best practice models of care such as Safewards and Six Core Strategies© to emerging practices that show promise such as the reflection on the therapeutic relationship during constant special observation. Despite the clearly established need for inpatient mental health settings to be more recovery-focused and person-centred, there was a lack of research into key practices which are commonplace, such as de-escalation and the use of PRN medication, thus reflecting the challenges of conducting rigorous research in such settings. Therapeutic engagement, meaningful activities and safe and welcoming spaces were features that cut across numerous papers identified in this Evidence Check. Key factors in implementing practice change are leadership and a system-wide commitment, and appropriate training of adequate numbers of staff. This Evidence Check has highlighted that reducing coercive practice and supporting patients through behavioural challenges requires multilevel complex practice change interventions.

Background

Mental Health Intensive Care Units (MHICU) are part of the acute inpatient mental health landscape in NSW. According to NSW Ministry of Health guidelines, specific criteria for referral to a MHICU include clinical complexity, high acuity, and acute severe behavioural disturbance (ASBD).[1] Here ASBD refers to behaviour that places the patient or others at imminent risk of injury or death; it includes extreme distress, aggression and serious self-harm in the context of mental illness. MHICUs are designed to provide high-intensity multidisciplinary assessment and treatment of these patients.

There has been a great deal of research to define and understand serious behaviours of concern in mental health inpatient units, and how and why they emerge, due to the significant impact they can have on the individual and on other inpatients, staff and the ward environment.[2, 3] Concerning behaviours include physical aggression towards other patients and staff, self-harm and suicidality, and absconding. Commonly, patient factors such as increased agitation, disinhibition and disorganisation have been identified as precursors to more serious incidents and these have been the primary focus of research.[3] Increasingly, research indicates a more complex interplay exists between the legal/policy context, ward environment, interactions between staff and patients, and symptoms of psychiatric illness.[2, 4] One conceptualisation of this complexity is the Safewards model, which attempts to explain conflict and containment on inpatient wards.[4] The Safewards model proposes six originating domains for conflict, based on understandings developed through a series of literature reviews and empirical research. The domains are: the patient community; patient characteristics; regulatory framework; the staff team; the physical environment; and outside the ward.

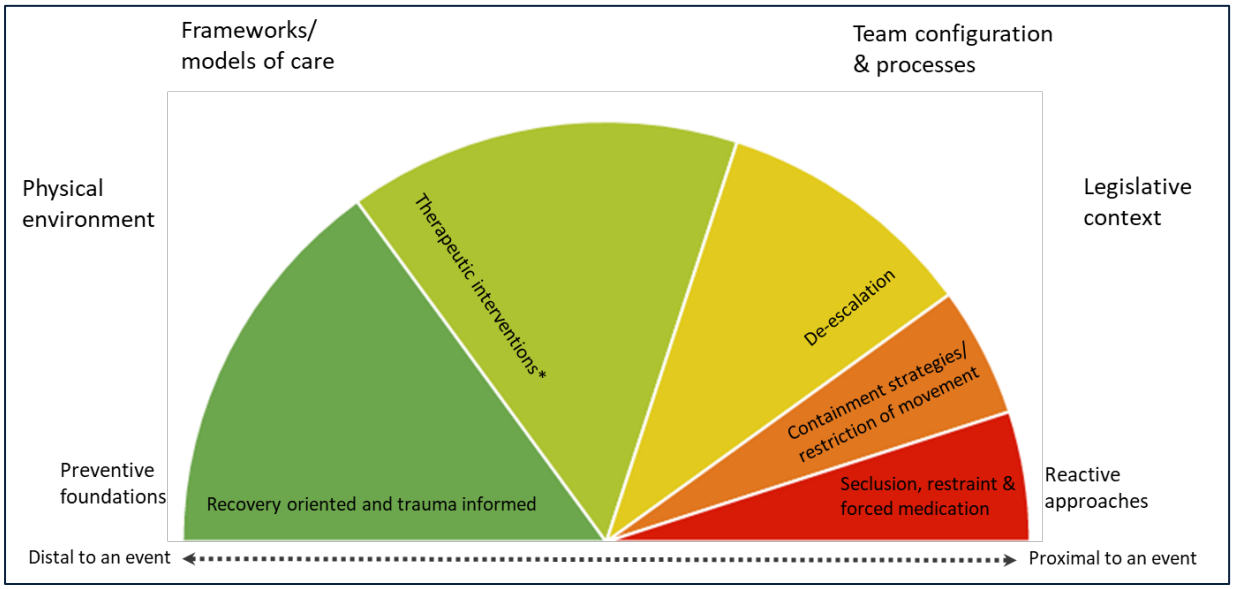
Understanding the potential mix of factors that precipitate ASBD is crucial to devising the most appropriate interventions to manage these occurrences. Restrictive interventions such as seclusion and restraint have been employed in an effort to maintain safety for people within inpatient units. The shift in recent years nationally and internationally towards least restrictive and recovery-oriented practices has meant there is now a significant drive to reduce the use of seclusion and restraint[5, 6] and to understand and intervene in challenging incidents before they escalate.[4] Seclusion and restraint is increasingly considered to be inconsistent with commitments to recovery-oriented and trauma-informed practice and the United Nations Convention on the Rights of Persons with Disability.[7] From the perspectives of patients and other stakeholders it is increasingly seen to be the result of poor practice, lack of leadership and poor design. It is important to consider what can be done ‘upstream’ that is consistent with these contemporary expectations, in order to both prevent concerning behaviours and appropriately support those who are experiencing ASBD.

The language of this Evidence Check will refer to consumers as ‘patients’ to reflect the NSW policy and because the review is referring to people who are admitted inpatients in the context of MHICU. It is important to note here that the perspective of this literature is largely clinical and does not represent co-designed or coproduced research, or foreground patient-centred understandings of the challenges of being admitted to an inpatient unit. Previous research has highlighted that patients experience inpatient units as lacking therapeutic engagement[8, 9], fairness and respect for patients[10] and as feeling custodial.[11] Further, patients report feeling bored[9] and unsafe.[8]

Consumer commentary: Literature addressing ASBD is most often anchored in the clinical epistemology and should be interpreted from the strengths and limitations of this perspective. For example, clinical language is often based on taxonomies (e.g. diagnostic manuals), which seek to classify and order human behaviour. These taxonomies are increasingly contested by consumers who find this approach too reductive and dehumanising. Although the clinical perspective has dominated this discourse, it is imperative that the consumer perspective is better included in future works in order to better understand this issue.

This Evidence Check is being undertaken at the request of the NSW Ministry of Health. The purpose is to assess peer-reviewed literature in relation to models of care and treatment strategies for the management of high acuity and ASBD, which will inform options for the refinement of the MHICU model.

The following provides a visual description of the organising principles used in this Evidence Check to both collect and assess the relevant evidence.



Methods

Peer-reviewed literature

We searched academic databases including Medline, Embase, Cinahl, PsycInfo and Cochrane in August 2020. Initial search terms were developed from the Evidence Check brief and the research team's lived experience and clinical and academic expertise. We used four concepts to focus the search strategy: 1. Mental illness; 2. Acute severe behavioural disturbance; 3. Mental health inpatient services; and 4. Models of care or interventions. We limited searches to literature published from January 2010 to August 2020 in English. Appendix 1 provides details of the search terms and limiters.

We screened the search results for duplication, after which one reviewer conducted an initial title screen. Two reviewers undertook a more thorough title screen before the papers were uploaded into Covidence for abstract screening. To ensure rigour, two reviewers independently agreed on the suitability of each abstract; disagreements were resolved via a third reviewer. Full-text screen was undertaken individually by two reviewers (each paper was reviewed by one reviewer), who consulted each other or a third reviewer if they were unclear about inclusion. A PRISMA flow chart outlining the flow of papers through the screening process is presented in Appendix 2.

We included English-language research papers related to adults with mental illness and acute severe behavioural disturbance. We excluded papers based on type, for example editorials or opinion pieces, and papers with no outcomes presented. We also excluded papers focusing on children and those relating to populations without a primary mental health focus.

Evidence grading

Given the complexity of the topic at hand and the challenges of undertaking randomised controlled trials (RCT) in complex mental health settings, the papers that met our Evidence Check criteria used a broad array of methods, from RCTs to case studies and descriptive analysis of single-ward data. Therefore, the most appropriate way of considering the evidence quality of these papers was to use the Hierarchy of Evidence for Promising Research Practices, developed by the Canadian Homelessness Research Network.[12] This hierarchy considers three concepts important to mental health service delivery: *"what works, why it works and for whom it works"* (p.4).[12] Below is Table 1, which outlines what may considered best, promising or emerging practice with examples of the research methodologies that support each rating. This table is adapted from work undertaken for the Sax Institute by Kakuma and colleagues, who considered this hierarchy as meaningful and appropriate when evaluating evidence of models of care for people with severe and enduring mental illness.[13]

Table 1—Practice rating explanations[12]

Practice rating	Description	Methodologies
Best practice	"A best practice is an intervention, method or technique that has consistently been proven effective through the most rigorous scientific research (especially conducted by independent researchers) and which has been replicated across several cases or examples" (p.7).	• Systematic reviews, meta-analyses • RCTs and quasi-experimental studies
Promising practice	"An intervention is considered to be a promising practice when there is sufficient evidence to claim that the practice is proven effective, however, there may not be enough 'generalisable' evidence to label them best practices. As the name suggests, these practices do hold promise. Promising practices need effective communication; that is to say, others working in the field need to know that a particular strategy that demonstrates positive results exists. As a promising practice is adopted and adapted for use in other settings, a body of evidence begins to build" (p.7).	• Realist reviews • Case studies with evidence of effectiveness, e.g. external evaluation with scientific rigour • Case studies with encouraging results, e.g. internal or external evaluations that lack scientific rigour
Emerging practice	"Emerging practices are interventions that are new, innovative and which hold promise based on some level of evidence of effectiveness or change that is not research-based and/or sufficient to be deemed a promising or best practice. Emerging practices highlight the need for more rigorous research and would be of particular interest to program evaluators and researchers" (p.7).	• Program descriptions or reports with limited data or evidence • Opinions, ideas, policies, editorials

Source: Canadian Homelessness Research Network[12]

Included studies

One hundred papers met the criteria for inclusion in the Evidence Check. Because of the rapid nature of the review, however, we decided to reduce the time frame of papers reviewed to between 2015 and 2020; this was agreed in consultation with the Sax institute and NSW Ministry of Health and resulted in 58 papers being included in the Evidence Check. The models of care and interventions found in our review of the literature were highly variable in scope, topic coverage and methodology, resulting in ratings of best practice, promising practice and emerging practice. Table 2, below, highlights the themes of papers and the related quality rating.

Table 2—Review topics and associated practice ratings

Model of care / intervention	Practice rating
Safewards	Best practice
Six Core Strategies© / ReSTRAIN YOURSELF	Promising / best practice
Improving the therapeutic qualities of the ward milieu	Best practice
Team approaches	Emerging practice
Sensory rooms / sensory modulation	Promising practice
Risk assessment and management	Emerging practice
De-escalation	Emerging practice
Trauma-focused interventions	Promising / emerging practice
Post-incident debriefing	Emerging practice
Cognitive behavioural intervention	Promising / emerging practice
Mindfulness based therapy	Emerging practice
Reflections on improvements to current practices; e.g. one-to-one observation, no smoking policy, sleep monitoring	Emerging practice
PRN and other adjuvant medications	Emerging practice
Novel interventions (animal-assisted therapy and music group)	Emerging practice
Design and environment, (open door policy)	Emerging practice

Grey literature

We conducted a desktop search for relevant grey literature using google.com and including results from the first 10 pages. We used the basic search terms of our academic literature search, including mental health facility OR mental health inpatient AND acute severe behavioural disturbance AND models of care OR intervention AND outcomes OR evaluation. The results were restricted to English, PDF files and publication dates between January 2010 and August 2020.

The grey literature documents were screened and assessed for inclusion by two team members (NW and MJ) and a third team member (SO) made the final decision. The inclusion criteria were updated in line with the academic literature search, including documents from January 2015 to August 2020. In total, we included four documents: two submissions to the Royal Commission into Victoria's Mental Health System (from Eastern Health and the Office of the Public Advocate)[14, 15], one literature review from the Melbourne Social Equity Institute[16] and one review by the NSW Nurses and Midwives Association.[17]

Findings

This section includes presentation of the Evidence Check findings according to three broad themes: models of care; team approaches; and focused interventions. Within each section as appropriate, the related strength of evidence is stated and the implementation barriers and enablers are presented. These findings answer the two research questions. A table of articles with abstracts and a second table with details about each paper is provided in Appendix 3.

Question 1: What hospital-based models of care or practices have been shown to be most effective in reducing high acuity and acute severe behavioural disturbance in mental health inpatients?

Question 2: What have been the barriers and enablers to implementing effective models of care to reduce high acuity and behavioural disturbance in mental health inpatients?

Models of care

Models of care in health settings including mental health care commonly include a theoretical foundation and an associated system of practices. For the purpose of this Evidence Check, a model of care is defined as a system of practices that correspond to an overarching theoretical frame relevant to ASBD *and* which are explicitly adopted in an acute inpatient mental health care setting, involving the whole healthcare team. We locate in other findings sections some interventions that are also multifaceted but either do not engage the whole team or are not supported by a theory directly relevant to ASBD.

The two prominent models of care for which we identified multiple studies are Safewards, originating in the UK, and the Six Core Strategies©, originating in the US and recently adapted as REsTRAIN YOURSELF in the UK. A further cluster of literature considered in this section relates to exploring and intervening broadly in the ward milieu to reduce ASBD.

Safewards

There are 12 papers related to the implementation of Safewards.[18-29] The theoretical groundwork of the Safewards model is complex and explains the incidence of 'conflict' and 'containment' according to six 'originating domains': staff team, physical environment, outside hospital, patient community, patient characteristics, and regulatory framework. Figure 1 indicates that each of these originating domains can lead to 'flashpoints', social or psychological situations that signal and precede imminent conflict. Flashpoints may lead to conflict and then containment, bidirectional arrows indicate that containment may lead to further conflict. Around flashpoints are 'patient modifiers', meaning that the responses of patients towards one and other can influence conflict and containment. Finally, 'staff modifiers' highlight that as individuals or teams staff influence conflict and containment by the way they manage patients and the ward environment, and initiate or respond to interactions with patients.

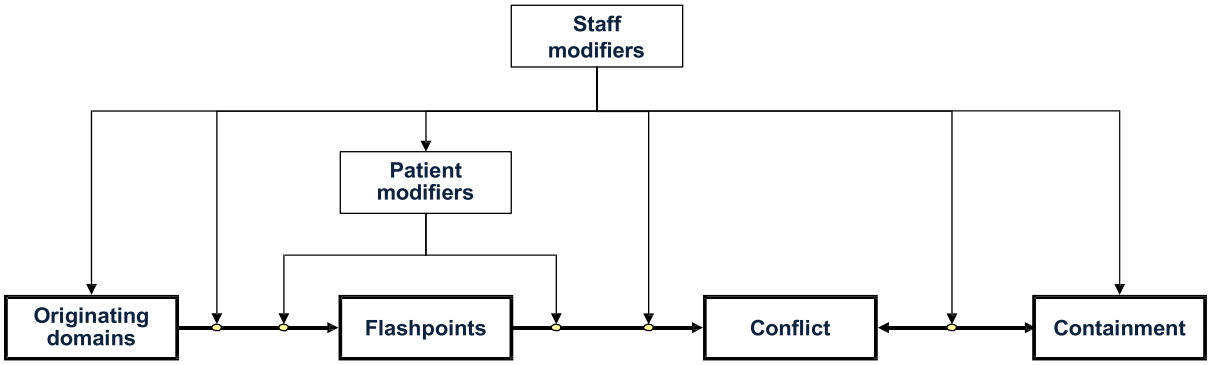


Figure 1—The simple form of the Safewards Model[4]

Ten interventions were developed from the model to promote safety on inpatient psychiatric wards; see Table 3 for a description of the interventions (adapted from Victorian training materials).

Table 3—Description and purpose of Safewards interventions

Intervention	Description	Purpose
Mutual Help Meeting	Patients offer and receive mutual help and support through a daily shared meeting.	Strengthens patient community, opportunity to give and receive help.
Know Each Other	Patients and staff share some personal interests and ideas with each other, displayed in unit common areas.	Builds rapport, connection and sense of common humanity.
Clear Mutual Expectations	Patients and staff work together to create mutually agreed aspirations that apply to both groups equally.	Counters some power imbalances, creates a stronger sense of shared community.
Calm Down Methods	Staff support patients to draw on their strengths and use/learn coping skills before the use of PRN medication or containment.	Strengthen patient confidence and skills to cope with distress.
Discharge Messages	Before discharge, patients leave messages of hope for other patients on a display in the unit.	Strengthens patient community, generates hope.
Soft Words	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.	Reduces a common flashpoint and builds respect, choice and dignity.
Talk Down	De-escalation process focuses on clarifying issues and finding solutions together. Staff maintain self-control, respect and empathy.	Increases respect, collaboration and mutually positive outcomes.
Positive Words	Staff say something positive in handover about each patient. Staff use psychological explanations to describe challenging actions.	Increases positive appreciation and helpful information for colleagues to work with patients.
Bad News Mitigation	Staff understand, proactively plan for and mitigate the effects of bad news received by patients.	Reduces impact of common flashpoints, offers extra support.
Reassurance	Staff touch base with every patient after every conflict on the unit and debrief as required.	Reduces a common flashpoint, increases patients' sense of safety and security.

The original cluster RCT was conducted in 31 wards from 15 hospitals across greater London. It involved 16 wards implementing Safewards and 15 control wards implementing a physical health intervention for staff.[18] Conflict and containment were measured by the Patient-staff Conflict Checklist (PCC), an end-of-shift survey that records the frequency of 22 defined conflict events and eight containment events. Fidelity to the model was assessed by research assistants when they attended each ward and completed the fidelity checklist, ascertaining whether or not each of the interventions was being implemented. Bowers et al.[18] found a statistically significant reduction in conflict and containment compared with control wards.

Since the original cluster RCT, no experimental methods have been employed to further test Safewards, but the model and interventions have been implemented and evaluated internationally in acute psychiatric wards and forensic hospitals with varying success. A recent longitudinal pre–post-test study in metropolitan NSW aimed to measure conflict, containment and ward climate associated with Safewards introduction within eight units of one large local health district.[19] Each unit received a similar level of support to implement the intervention across a four-week baseline/preparatory phase, a 12-week implementation phase and a four-week outcome phase. Conflict and containment were measured using the PCC end-of-shift report and violence prevention climate was measured using the VPC-14. The study reported reasonable fidelity (of more than 7/10 interventions on average) in the outcome phase. From a 63.2% PCC response rate, the mean (SD) reported conflict and containment incidents per shift fell from 3.96 (6.25) and 6.81 (5.78) to 2.94 (4.22) and 5.82 (4.62), respectively. Controlling for other variables, this represented reductions of 23.0% for conflict events and 12.0% for containment events.

A large multi-agency trial of Safewards in Victoria found a significant 36% reduction in seclusion rates in 13 adult and youth acute units at one-year post implementation with corresponding fidelity on average indicating that nine out of 10 interventions were being implemented[20], whereas the seclusion rates did not change in comparable adult and youth wards not implementing Safewards in the same time frame in Victoria. In a trial in Germany, two wards in one hospital implemented all 10 interventions of Safewards. Both wards demonstrated reductions in the number and duration of coercive measures, but only one ward's changes reached statistical significance.[21] In Denmark an interrupted time series analysis before and after the implementation of Safewards on 26 acute psychiatric inpatient units demonstrated a reduction in containment (reduction per quarter of 2% in physical restraint and 11% reduction in forced medication.[22] Specifically, mechanical restraint and forced medication were reduced significantly. However, this study did not measure fidelity to Safewards, so the strength of the association between the change and Safewards is uncertain.

Several studies have reported the implementation of Safewards in forensic psychiatric settings. In Victoria, one medium- to long-term secure ward at the state forensic hospital successfully implemented Safewards (94% fidelity). Comparison of routine data one year before and after revealed a reduction in aggressive incidents. There were in total 65 fewer incidents in the year after Safewards implementation compared with the year before and containment events were historically low and remained stable.[23] In contrast, a non-randomised controlled design investigated Safewards implementation in six wards in a UK medium-secure forensic setting. Researchers did not find any significant change in conflict and containment, either between or within wards.[24]

Maguire et al. [23] sought qualitative feedback from staff and consumers during fidelity checks of the Safewards implementation. Findings revealed better ward atmosphere, positive practice change,

enhanced safety and more respectful relationships. Findings from papers by Fletcher and colleagues highlight similar outcomes, whereby staff and consumers felt safer with reduced physical and verbal aggression, and they reported better connection between consumers and staff.[25, 26] Consumers also reported feeling increased respect, hope, sense of community and reduced feelings of isolation.[25] Qualitative comments from staff raised four key themes regarding the model and interventions: structured and relevant; conflict prevention and reducing restrictive practices; ward culture change; and promotes recovery principles.[26]

A qualitative study in the UK[27] analysed interviews with 15 staff from three acute inpatient psychiatric units one year after implementation of Safewards. They reported a number of themes that indicated challenges for some staff engaging with Safewards, specifically *"lack of management support, poor use of nurse educator time, the 'language' of Safewards, high acuity on the study wards, and staff and patient turnover"*.[27]

The strength of the Safewards studies as a group is reasonable, either using RCT methods or pre–post design, showing significant reductions in conflict and containment whenever associated with at least good fidelity. Therefore, in the absence of models of care supported by higher levels evidence, and considering its compelling rationale, Safewards can currently be considered **best practice**.

Implementation findings

James et al.[28] report qualitative data collected as part of the Safewards cluster RCT in relation to factors that affected implementation across the 15 wards.[28] Their data revealed six factors that moderated the implementation of Safewards: the ward environment and organisation; team culture and dynamics; staff skills, confidence and understanding; staff values and beliefs about the Safewards intervention and trial; and patients' responses to the intervention.

Although the initial trial did not emphasise training, the topic of training is prominent in the Safewards literature, specifically in relation to engagement of staff and the degree of fidelity achieved in real-world examples over longer periods than the initial RCT. Kipping et al.[29] implemented Safewards on six medium and low-secure units in the forensic program of a tertiary psychiatric hospital.[29] A co-creation approach was taken with the implementation of staff training. Specifically, champions were selected and trained and a subsequent communication strategy was devised to engage and educate front-line staff. Staff reported satisfaction with the co-creation model of implementation and training and the six wards implemented Safewards with high fidelity. Two studies highlight that a structured approach to training supports sufficient uptake in training and resultant implementation fidelity.[23, 30] In contrast, Price et al. [24] and Higgins et al.[27] noted that lack of adequate training may have been a contributing factor in the poor uptake of Safewards.

Higgins and colleagues[27] further suggested that for organisations to support implementation there needed to be buy-in from management; support during implementation and training; efforts to ensure training materials were context-appropriate and use of language that staff found acceptable.

The implementation framework employed by Baumgardt[21] consists of three parts: first is a step-by-step plan for developing the implementation initiative; second is implementation; and third is evaluation of the implementation. Each of these have multiple steps. This approach considered engagement of staff at all levels of the organisation, understanding current practice that may support

or hinder the implementation. In this setting the implementation was led by psychiatrists and mental health nurses.

Consumer commentary: Safewards recognises the multifaceted range of components that can impact on an individual's sense of calm and safety. Importantly, it recognises the relationship between consumers and inpatient staff, empowering staff to choose behaviours and communication styles that are the most helpful from the consumer's perspective.

Six Core Strategies© and REsTRAIN YOURSELF

From 2015–20 there were four papers reporting on three studies of the 'six core strategies for reduction of seclusion and restraint' model of care for acute inpatient settings[31-34], more commonly referred to as the Six Core Strategies©.[35] The studies identified in this Evidence Check include a large-scale epidemiological analysis of 10 years of program outcomes across many hospitals[31]; a detailed mixed methods pre–post evaluation of Six Core Strategies© implemented in one hospital;[32] and a non-randomised cluster controlled study involving seven healthcare trusts in the UK[33, 34]. The latter study adapted the Six Core Strategies© and the program was entitled REsTRAIN YOURSELF.[33, 34] A quantitative outcomes paper and a qualitative staff experience arising from this study are included in the Evidence Check.

Reducing use of seclusion and restraint (S&R) has been a policy priority across the US and then internationally since the 1990s. The Six Core Strategies© was a key feature of national practice change programs, being a multilevel complex practice change intervention targeting both organisational and individual factors in decision making about care. First developed for the National Technical Assistance Center in the US, this model is built on public health/harm prevention theory.[35] Many specific interventions are detailed within the core strategies, which guide a systematic approach to achieving practice change (refer to Table 4).

Table 4—Six Core Strategies© for the Reduction of S&R

Strategy		Description
1	Leadership towards Organisational Change	Consistent and continuous involvement of senior facility leadership (CEO, CNO and COO). Leadership strategies include: • articulating a vision, values and philosophy that drives S&R reduction • developing and implementing a targeted facility or unit-based performance improvement action plan (like a facility 'treatment plan') • holding people accountable to that plan.
2	Use of Data to Inform Practice	Collecting and using data at the individual unit level. The facility/unit sets improvement goals and monitors use and changes over time.
3	Workforce Development	Creating a treatment environment whose policy, procedures and practices are based on the principles of recovery and the characteristics of trauma-informed systems of care. Such a treatment environment is less likely to be coercive or trigger conflicts; this is a core primary prevention intervention.
4	Use of S&R Prevention Tools	Tools and assessments integrated into facility policy, procedures and each individual consumer's recovery plan. Individualised treatment to include: • assessment tools to identify risk for violence and S&R history • a universal trauma assessment • tools to identify persons with high risk factors for death and injury • de-escalation surveys or safety plans • use of person-first, non-discriminatory language in speech and written documents • environmental changes to include comfort and sensory rooms; sensory modulation interventions • other meaningful treatment activities designed to teach people emotional self-management skills.
5	Consumer Roles in Inpatient Settings	Formal inclusion of consumers, children, families and external advocates in various roles at all levels in the organisation, to assist in the reduction of S&R. Includes consumers of services and advocates in: • event oversight, monitoring, debriefing interviews • peer support services • mandated roles in key facility committees • elevation of supervision of these consumers/roles to executive staff • executives to support, protect, mediate, advocate for the assimilation of these special staff members and volunteers.
6	Debriefing Techniques	This requires a thorough analysis of every S&R event. Recommended debriefing activities are: • an immediate post-event acute analysis • a more formal problem analysis with the treatment team. This strategy values the knowledge gained from debriefing to inform policy, procedures and practices to avoid future events A secondary goal is to mitigate, to the extent possible, the adverse and potentially traumatising effects of a S&R event for involved staff, consumers and for all witnesses to the event.

Source: National Association of State Mental Health Program Directors[35]

Taking the long view of the impact of the national policy directives and associated practice change programs, Smith et al.[31] reported epidemiological analysis of routinely reported data regarding seclusion and restraint events, aggression events and staff and patient injuries for the state of Pennsylvania for the decade 2000–2010, when programs to achieve reduction in S&R (especially the Six Core Strategies©) were initially implemented.[31] The purpose of the study was to ascertain whether reduced S&R was associated with an increase in patient or staff injury. The findings showed a significant and steady decline of S&R in the decade. The rate of aggression towards patients decreased slightly in this same time and aggression towards staff stayed at the baseline level. This paper provides support for policy commitments and program implementation to reduce S&R, as fundamentally not placing patients or staff at increased risk of aggression.

A project by Blair et al.[32] serves as an example of a S&R reduction intervention program in the US, related to the paper by Smith et al.[31]; that is, this project was informed by the same national policy and the same Six Core Strategies© program resources and elements as employed in Pennsylvania. This study is a pre–post evaluation of a S&R program implemented in several wards within a single (120-bed) psychiatric hospital in Hartford, Connecticut, over a five-year period. The project also featured the Broset Violence Checklist (BVC), used to measure and prompt a staff response to increases in patient-related dynamic features (such as irritability, confusion) associated with aggression. This evaluation showed the seclusion rate was reduced by 52% and the duration of seclusion was reduced by 27%. Reduction of restraint was not significant. The BVC data indicated that seclusion was most commonly associated with irritability (97%) and boisterousness (78%). The results were significant, but the paper lacked reporting of effect size.

Duxbury and colleagues[33, 34] reported on a recent study of the Six Core Strategies©, adapted and implemented across 14 wards within seven trusts in a northern region of the UK.[33, 34] In REsTRAIN YOURSELF, the interventions listed against the six core strategy areas included: establishing restraint targets for each ward; ward champions; executive walkarounds (leadership); visual display of restraint data (data informed practice); trauma-oriented training (workforce development); *My Safety Plan*; sensory spaces and tools; visible nurse strategy (restraint reduction tools); community meetings; advocacy and peer support (service-user involvement); and a debriefing tool. Unlike the case study level of evidence produced over decades in the US, *the REsTRAIN YOURSELF* project employed a non-randomised cluster-controlled trial method. Also, the end point was restraint events rather than seclusion events, reflecting this as the coercive measure most commonly used in the UK. The project aim was to reduce harm caused to patients and staff as a result of physical restraint. Researchers proposed that restraint would be reduced by 40% in the intervention wards. Restraint data was measured at three time points of baseline, intervention and adoption. Robustness of the control condition was hampered by the inability to match samples as intended, and implementation wards had significantly higher restraint rates at baseline. The outcomes were positive, with restraint rates from baseline to adoption reduced on average 22% in intervention wards, with no significant rate change in control wards. Staff reported mixed views about the demands of the intervention but reported positive changes in their own attitudes and practice, relevant to the trauma-oriented training and to the project overall.[34]

The strength of the Six Core Strategies© studies as a group is moderate. Results from one controlled trial study and two pre–post designs show significant reductions in aggression, injury and restrictive practices. However, to date no studies systematically report levels of fidelity to the program, and the qualitative study of staff views suggests variable uptake of components is highly likely, raising questions about the feasibility of the model in total. The challenge then is to identify the feasible and

effective ingredients within such a complex model. There is ample support to suggest Six Core Strategies© as a whole model of care is a **promising / best practice.**

> **Consumer commentary:** Seclusion and restraint are recognised as interventions that often result in trauma for the consumer. Language concerning distress such as 'disordered', 'hysterical', 'agitated' have often blamed consumers for their response to extreme distress. Responding to distress and trauma through proactive interventions are a step in the right direction.

Implementation

For decades it has proved challenging to ascertain fidelity and therefore claim effective implementation of this multilevel and complex intervention. The program itself invites considerable local adaption to maximise its feasibility. From staff views reported in the qualitative study[32], it would seem the underlying harm prevention principles and trauma-informed care training were the aspects of the program that staff found compelling, leading to changes respectively in staff understandings of their own roles and of patients' behaviour. From the reported studies, it is not possible to draw clearer conclusions than this about which implementation components had an impact.

However, several of the core strategies and elements within the program accord with classic implementation science practices. In particular, Strategy #1, *Leadership towards Organisational Change*, incorporates directions for ensuring the 'buy-in' of senior managers, the establishment of an organisation-wide vision and mechanisms of accountability through program stages. These are clear examples of recommendations for effective change management. Similarly, content and processes for training and use of data are stipulated. In addition to these standard change strategies, the inclusion of consumer expertise (recommending many staff and volunteer roles) as a driver for change is a more innovative implementation component (Strategy #5) within the Six Core Strategies©.

Studies describing factors in the milieu relevant to ASBD

This section includes five papers in all.[36-40] These are descriptive papers that add explanatory detail about the events of ASBD and practice responses, and small studies presenting interventions to reorient practice in the milieu as a whole. Two qualitative interview studies explore the similarities and differences in staff and patient views about aggression events in the ward and offer related recommendations for preventing aggression.[36, 37] A literature review explored factors that drive staff towards use of seclusion, specifically in the psychiatric intensive care setting.[38] One paper presents a case series to illustrate the use of a guideline devised for comprehensive formulating and intervention regarding ASBD in a long-term forensic unit.[39] A final paper reports the pilot study of an initiative to reduce restrictive practice, independent of Safewards and Six Core Strategies©.[40]

Lamanna et al.[36] report an interview study with clinicians (n=10) and patients (n=14) regarding their explanations of aggression in one acute ward. Based on semi-structured interviews and using Interpretive Phenomenological Analysis (IPA), the findings suggest some mutual and divergent perspectives between the groups. Analysis of views about what influences aggression in psychiatric settings generated six main themes: major life stressors; experience of illness; interpersonal

connections (or not) with clinicians; physical confinement; behavioural restrictions (or rules); and lack of engagement by clinicians regarding treatment decisions. The data is illuminating and intersects strongly with the theoretical frame of Safewards, covering off all the 'originating domains of conflict' in that model.

We note that analysis of the phenomenon of patient perspectives may be constrained by the research team members' positioning as clinicians.[36] Some skew of language in favour of clinicians is evident. For example, the stated theme 'interpersonal connections with clinicians' is a theme title, when the data and analysis of the theme clearly shows the presence and also absence of connections. The theme could more accurately be: 'connections with clinicians; present or absent', or 'positive or negative connections with clinicians'. The negatively cast data are more important to the stated research question of causes of aggression, but the theme title downplays that aspect. The study highlighted the aggression-preventing potential of active patient engagement in treatment decisions, teams prioritising relationship-building and the need to redress provocations arising from unit rules and confinement in ward space.

Vermeulen et al.[37] explored underlying differences and similarities in patient and staff perception of aggressive incidents and invited recommendations for preventing future aggressive incidents in one 12-bed acute unit. Semi-structured interviews were conducted with patients (n=15) and nurses (n=13), each of whom were involved in 15 aggressive incidents. All patients were admitted when the interviews were conducted. Therefore, the social desirability of subduing their answers or recommendations should be considered as a potential limitation. Interview data were analysed in nurse–patient interview pairs. Findings were that the patient and staff factual accounts of events were very similar, though perspectives differed in relation to the perceived severity of the incident. Recommendations to prevent further violence and aggression also differed between staff and patients. Nurses readily recommended pharmacological interventions, such as the use of PRN medication, the timing of interventions, such as acting more quickly when a patient was agitated or distressed, and facility-related factors such as expanding the number of secure rooms and the addition of a high intensive care unit. Patients recommended highly specific and personalised de-escalation interventions, humane treatment and freedom, improvements in ward routines, interpersonal contact, and shared decision making during a coercive measure.[36]

Vermeulen et al.[37] recommended a personalised de-escalation model with opportunity for a discussion with patients early in admission about methods staff could employ if the person became agitated or distressed. The article also recommends a post-incident debrief with the patient by an independent person after an aggressive incident, to provide opportunity for the patient to give feedback on the contributory factors leading to the incident. The examples provided are a useful resource to illustrate the diversity of personalised de-escalation.

Wong et al.[38] undertook a literature review of factors that drive staff towards use of seclusion, specifically in the psychiatric intensive care setting. They found only three papers addressing the question and did not analyse the quality of these papers. Their key findings were that high workload and low patient-to-staff ratio, aggression from both patients and staff, and environmental factors of design and layout including crowding and larger overall size of unit were all associated with more seclusions. Recommendations were to improve staff–patient ratios and the quality of communications with staff training, to reduce patient numbers in these settings and reduce shared rooms, and to more robustly treat active symptoms of patients. Though the recommendations have face validity and seem reasonable, they should be adopted with caution in light of the limited amount and quality of evidence.

One paper[39] by Dardashti et al. presents a qualitative case series (n=7) from one long-term forensic hospital to illustrate the use of the California State Hospital Violence Assessment and Treatment (Cal-VAT) guidelines. These guidelines encompass psychopharmacological, therapeutic and environmental interventions. The paper provides a conceptualisation of three types of violence: psychotic, predatory and impulsive, and illustrates corresponding approaches to these via the case studies. The guidelines prompt teams to formulate the drivers of aggression, using the formulation as a rationale for differential treatment of ASBD in a forensic setting, including pharmacological, psychotherapeutic and environmental interventions. The discussion of medication monitoring and management and the specifics of which treatment is supportive in reducing certain types of violence may contribute detail to practices of individualised treatment. However, given that the study occurred in a long-term forensic setting and an illustrative case series is not empirical research, this intervention in the form of use of the Cal-VAT guidelines can at best be considered **emerging practice**.

Long et al. describe a study in a medium-secure inpatient unit, where a series of initiatives was introduced to reduce seclusion and risk behaviour.[40] This was assessed using a matched pairs pre–post design with 19 patients who completed treatment after the implementation. Prior to the implementation of the interventions under study, the unit had adopted some other initiatives, guided by the milieu therapeutic approach for the management of extreme behaviour developed by William Davies.[41] This approach, known as RAID (Reinforce Appropriate, Implode Disruptive), includes:

- Staff training
- Recovery-oriented care
- Post-incident use of Behaviour Chain Analysis
- Structured risk assessment tools
- Scenario planning to inform risk management and intervention
- Risk stage system.

The study then focused on implementing a series of initiatives over a four-month period; these are outlined in Box 1, below, taken from Long et al.[40] The authors noted they drew inspiration for the inclusion of these six initiatives from the work by Len Bowers and the Six Core Strategies©. The details show how this initiative attempts to integrate many recent psychosocial interventions.

Box 1—Initiatives implemented in Long et al.

Training in Relational Security (Allen, 2010) and its introduction into ward clinical team meetings attended by patient representatives. Training involved a one-hour staff induction program complemented by a ward team training session. These focused on the incorporation into weekly community meetings of an assessment of the ward compliance with areas of the Relational Security Wheel and a resulting action plan.

Including patient views in developing individualised plans for the prevention and management of aggression and violence.

On-ward training in de-escalation techniques. These focused on weekly one-hour training sessions using ward case examples of how to manage disturbed behaviour by non-invasive relational strategies.

Timetabled staff guided behaviour chain analysis (BCA) (Linehan, 1993) sessions following the occurrence of risk behaviours (Daffern & Howells, 2007). Before change, patients were responsible for completing and arranging help with BCAs.

Sensory integration techniques including the therapeutic use of weight, to help manage high levels of arousal (Champagne & Stromberg, 2004).

Timetabling leisure activity sessions at weekends given the relationship between increased activity and lower levels of disturbance (Sigafoos & Kerr, 1994) and the increased likelihood of acts of self-harm at weekends (Nijman et al. 2002). Before this, weekends were relatively unstructured with no organised leisure or therapeutic sessions.

Source: Long et al.[40]

The key outcomes included significantly reduced episodes and length of seclusion and risk behaviour after the implementation. This finding aligned with staff rating of improved institutional behaviour, increased engagement in treatment, and reduced length of stay in the medium-secure setting. Patients and staff were given the opportunity to comment on each of the initiatives. Patients endorsed the use of the multidisciplinary relational security team and timetabled sessions with staff to complete behaviour chain analysis. Staff rating of significant improvement in patient-staff relationships reflects the feedback from patients, who felt the emphasis on individual engagement through the relational security initiative was the best of the new initiatives.[39]

This study[40] parallels what is shown in studies of Safewards and the Six Core Strategies©: that a multifaceted approach to reducing seclusion and risk behaviours can have a significant impact on those outcomes, also demonstrating that to achieve change one single intervention may not make a difference. Furthermore, each of the initiatives is supported to some extent by an evidence base. There were limitations to this study, with a small sample size and retrospective selection of the comparison group, which possibly led to bias. Further there was no measure of fidelity to assess how well each of the initiatives was implemented. Given that there had been a number of initiatives implemented in the setting prior to this, it is difficult to assess the impact of the earlier initiatives and the priming impact they may have provided for staff.

Consumer commentary: Individuals who are in the inpatient ward often experience boredom and loss of freedom. The activities and relationships that give one meaning may be inaccessible or regulated during an inpatient stay. The opportunity to increase leisure time and engage in sensory experiences may reduce the stress and boredom of an inpatient stay.

Summary of models of care and milieu

This summary presents key points from the review of models of care and milieu. Taking the presented models of care, Safewards is considered **best practice** and Six Core Strategies© **promising/best practice**. There is a strong case presented here for Safewards to be implemented with fidelity in routine practice. There is also a reasonable case for identifying and implementing any elements of the Six Core Strategies© that are not well addressed in Safewards. An example that was valued by staff was the training to understand impacts of trauma and the implications for practice.

In addition, the conceptual foundation of each of these models of care each make a valuable contribution to understandings of acuity and ASBD in acute inpatient settings; this potential contribution is taken up in the discussion.

The descriptive studies and the case illustrations of the use of a guideline contribute added support for improving the therapeutic qualities of the ward milieu. They provide rationales for the aggression-preventing potential of: increasing patient engagement in treatment decisions; comprehensive formulating of drivers of aggression; prioritising relationship building; redressing provocations arising from unit rules and confinement in ward space; strengthening post-event debriefing and personalised de-escalation; reducing crowding and unit size; and increasing staff-patient ratios and engagement.

As has already been established by the body of Safewards research, diverse strategies can be directed at known points of conflict, including making a priority of positive connection and effective engagement, especially in regard to treatment decision making, ward rules and physical confinement. Dealing preventively with these trigger points is established best practice. Recommendations reflect current understandings of debriefing, patient choice and recovery-oriented practices. Given these models of care have been implemented successfully in Australia and in some parts of NSW, they should be considered applicable and highly relevant to the NSW context.

Team approaches

This topic generated five articles for full-text review and summary. [42-46] Four studies were qualitative in design: one based in Denmark[42], one in Australia[43] and two in the US.[44, 45] The mixed methods design study was based in the UK.[46] Three of the studies focused on inpatient psychiatric hospital settings and two on forensic psychiatric hospitals.

The study by Berring et al.[42] discussed a model or approach (Co-Operative Inquiry) that can build teams, deepen knowledge, improve skills and foster an ongoing willingness to keep learning among

team members. Consequently, mental health care as perceived by patients improves as does the confidence and safety of staff. While the authors did involve patients in the project, they describe and recommend further actions that can be undertaken to expand patient involvement. The Co-Operative Inquiry model was used to generate, describe and transform knowledge about de-escalation practice in this instance; however, there is potential for the model to be used to generate other important skills and knowledge within and across teams necessary for quality mental health care.

Another paper concerning a multidisciplinary team model or approach that showed some promise discussed the development and early few months of the Inpatient Service Support Team (ISST).[46] The ISST represented nursing, social work and clinical psychology disciplines. Its goals were to advise and support local services in the management of people with challenging behaviours, and to determine the reasons for inappropriate referrals/admission from low- and medium-secure services and, where appropriate, to reduce these accordingly. All goals were met well. Indeed, many patients avoided being moved into higher security units and staff valued the input from the team. Nonetheless, the reported results were descriptive only, i.e. there were no statistical analyses. However, the article described several avoidable teething problems, which should be of great value to anyone who might want to reproduce the service.

An Australian qualitative study reported on staff perspectives of the implementation of a psychiatric Behaviours of Concern team (Psy-BOC) that could be called by ward staff to one of two acute inpatient psychiatric units.[43] The Psy-BOC team is multidisciplinary, involving a psychiatrist, senior mental health nurse and allied health staff. Ward staff were able to call the Psy-BOC team when they had exhausted all efforts to de-escalate an incident and did not want to resort to patient seclusion. Seclusion rates on the two wards were reduced after the implementation of the Psy-BOC team. Management staff were positive about the implementation as it achieved the goal of reduced seclusion. They also thought the opportunity for ward staff to enhance their de-escalation skills by working with the Psy-BOC team should be more of a priority. Ward staff felt the introduction of this team ignored environmental factors on the ward that contributed to increased aggression and felt that at times the safety of staff and other patients was compromised when the Psy-BOC team used temporary or unsustainable interventions then left, resulting in the patient's aggression re-escalating.

Two papers from the US focused on reducing violence and aggression in forensic psychiatric settings.[44, 45] Bader et al.[44] described the implementation of an ecological approach to reviewing patient aggression, whereby an ecologically trained facilitator would run a consultation style meeting. The meeting covered three key topics: the patient's risk factors for aggression and treatment options; features of the ward that may contribute to aggression for the current patient and others; and, finally, identifying hospital policy and procedures that pose a barrier to creating a safer ward. The recommendations generated from the meeting were then prioritised and implementation planned by administrators. This study did not provide any outcome data for the implementation but reviewed literature to support the notion that violence and aggression in inpatient settings must be understood from a perspective that considers the impact of environment as well as patient factors.

Tolisano et al.[45] used two case studies of high-secure forensic inpatients to demonstrate the efficacy of a behavioural consultation team supporting ward staff to implement a Positive Behavioural Support (PBS) model. Under the model, the external team led by a behavioural psychologist is engaged by the treating team to undertake a functional behavioural assessment with the goal of understanding the purpose of the patient's aggressive or challenging behaviour. A five-component intervention is then devised including: ecological strategies; positive programming or psychosocial rehabilitation; focused

support strategies; proactive or preventive strategies; and reactive strategies. The authors noted the positive outcomes of incorporating the PBS model included use of nonpharmacological means of addressing aggression, enhanced ability of staff to manage challenging behaviour and lowered use of seclusion and restraint.

Overall, the strength of evidence for team approaches is limited. However, two articles do report encouraging results with some evidence of effectiveness[42, 46]; these Team Configuration/Approach related models warrant the classification of **emerging practice**.

As flagged earlier, four of the five articles discussed mental health care team approaches set in other countries and, therefore, other cultures. Nevertheless, there are some take-home messages that may be beneficial to the NSW context. Two models stand out for an acute inpatient mental health setting: the Co-Operative Inquiry model[42] and the ISST model.[46] The Co-Operative Inquiry model is a promising model that builds multidisciplinary teams, deepens knowledge, improves skills, and fosters an ongoing willingness among team members to keep learning. An additional and no less important benefit is the inclusion/engagement of patients within the model's implementation processes. The ISST model is a specialist service that assesses patients and supports staff in dealing with 'difficult to manage' patients. The ISST team is a multidisciplinary team that was able to prevent a number of patients from needing to be transferred to higher security mental health settings in the first few months of the team's operation. The overarching goals of both models align strongly with current mental health care practice. Both models would require resources and time but would likely be viewed and received positively by both staff and patients. Both can be considered **emerging practice**.

The two US forensic papers highlighted literature supporting the basis for team approaches that take an ecological view of aggression, considering environmental and ward factors that contribute to aggression along with patient/illness factors. Aligning these approaches with multifaceted interventions such as Safewards and the Six Core Strategies© could therefore support a reduction in incidents.

Implementation

There were several potential hurdles in the implementation of the ISST model discussed by Hayes et al.[46] that it would be prudent to avoid. The launch of the service was too low key and consequently many staff across the catchment area were unaware of ISST for some time. A further concern was that some patients missed the positive impact that ISST could make. Another issue was that the objectives of the team were not well enough defined at the beginning. This resulted in a lack of clarity among team members about their exact roles, responsibilities and authority. Those two issues compounded the difficulties team members experienced when trying to negotiate with some catchment area mental health managers who were not aware of the service and the team members were not confident in their positions.

A potential issue that may arise when implementing the Co-operative Inquiry model in Berring et al.[42] is linked to 'groupness'—an effect whereby individuals in a group with a social identity that by its definition excludes others create firm boundaries and isolate from the larger context. [42] sought to remove this risk and concurrently create transferability by purposely including several communication spaces outside of the context, i.e. the stakeholder groups. By happenstance, this action improved professional learning and validation of some of the strategies in real life. Engaging key stakeholders when proposing changes to usual practice is important. Indeed, both the ISST team[46] and the Psy-

BOC team[43] struck difficulties from not engaging well with all staff: the ISST team found it difficult to assert their authority when engaging with ward managers in the early months and the Psy-BOC team clearly did not engage well with some ward staff in their study. Accordingly, perceptions of key stakeholders are important if the team approach is to succeed.

Consumer commentary: The use of a multidisciplinary team can provide a range of perspectives, knowledge and values. The peer workforce is an emerging discipline which should be routinely featured in future teams in order to give insight into the lived experience of mental ill health and recovery.

Focused interventions

Sensory room or sensory modulation

Overall, we identified four studies that used sensory rooms[47-50] and one pilot study using sensory modulation.[51] Of these, one was conducted in Denmark [47], one in Sweden [48], one in the UK [49] and one in the US [50]; each was conducted within an inpatient setting. Two used mixed methods[47, 48] and two used qualitative methods.[49, 50]

Of these four studies, two reported statistically significant outcomes when investigating the impact of sensory rooms and sensory modulation.[47, 50] Andersen et al.[47] reported significant reduction in seclusion and restraint; however, there were some confounders, such as the substantial difference in length of stay between the usual care and intervention groups, and differences in population and settings, which could also contribute to these results; the impact of the sensory room is unclear. The study by Yakov et al.[50] reported significant reductions in assault rates ($p = .02$) and restraint rates ($p = .002$). In this systematic event analysis, a sensory modulation project was undertaken in one PICU ward that was noted to have a high rate of assaults and restraints in the afternoons and evenings. Led by occupational therapists (OTs), the project used strategies to reduce ambient noise and light in the units at those times and introduced several group-based interventions (art, music and exercise with therapists) designed to engage a range of senses to optimise self-regulation. Implementation included OTs conducting staff training and engagement of senior executives in event analysis. Overall, further rigorous studies will be required to determine the impact, effectiveness and acceptability of sensory rooms.

The study by Yakov et al.[50] used a multidisciplinary team that included physicians and nursing, administrative and OT leaders in the planning of the intervention, plus OT support for the staff education and running of the sensory room. Andersen et al.[47] also used a multidisciplinary team with OTs, nurses, social workers and medical staff. OTs led the assessment of patients' sensory needs and chose who to assess for access to the sensory room. Bjorkdahl et al.[48] described the role of nurses in the development of the implementation guide; mostly this article referred to the staff participants without differentiating by discipline or role. A specialist OT, three registered mental health nurses, a ward activity worker and the clinical nurse manager participated in the interviews. Forsyth et al.[49] used a project team consisting of an advanced OT, clinical nurse lead, ward manager and clinical

psychologist who were consulted about the development and implementation of the project. Staff were included via regular staff meetings and written information.

Sensory rooms overall were well received by the patients and staff who participated in these studies. The included studies do not give insight into patients' experience of these sensory rooms. Although there was some evidence that these studies improved choice and control, patients did not have free access to these rooms—access most often required staff permission and/or supervision. The study by Bjorkdahl et al.[48] had a staff member introduce the inpatient to the sensory room and also consulted with patients regarding the room's development.

There was some evidence that sensory rooms could contribute to reduced agitation and aggression. The study by Yakov et al.[50] reported a significant reduction in assaults. Likewise, Forsyth et al.[49] reported that sensory rooms contributed to de-escalation, which they proposed also reduced agitation and aggression although this was not measured directly. The study by Bjorkdahl et al.[48] reported that sensory rooms were linked to de-escalation. *"It is a tool that the patients can use on their own to ease their anxiety, it increases the feeling of not being dependent upon others or on medication."* (p.477). Agitation and aggression were not measured directly using a validated measure by many of these studies.[47-49]

Of note, most of the studies used staff training.[47-49], which was identified as an enabler [47, 48], as well as having an implementation guide.[48] Interestingly, the study by Forsyth et al.[49] promoted the use of the sensory room by staff and patients. The study by Yakov et al.[50] addressed barriers through regular staff meetings. Barriers included designating the OT to choose which patients could access the sensory room; interestingly, this was reported but not identified as a barrier or limitation.[47] Although the authors did not identify locking the sensory room when not in use as a barrier, it could create a substantial hurdle.[48] Overall, there was a lack of patient feedback after opening the sensory room.

A pilot study related to sensory modulation was undertaken by Bensimon et al.[51] It used relaxing music of the patient's choice when they were entering seclusion, to reduce patient distress associated with seclusion and thereby reduce staff use of restraint in addition to seclusion. Patients (n=52) were randomly assigned on admission to the intervention group who were provided with their own choice of relaxing music when in seclusion, or a control group with no music. Common psychological/ behavioural preludes to seclusion were irritability, confusion and verbal aggression. At that point, participant-related baseline measures were completed (VAS and BARS scales) and patients were directed by staff to enter/walk into the seclusion room; the participants could leave the seclusion room at any time. The music intervention group experienced significantly greater improvement of mental state and level of relaxation at point of exit. Significant pre–post improvements were evident in both groups for both measures (reflected by higher VAS and lower BARS scores) and the mental condition of the intervention group improved much more in comparison with the control group after they had left the seclusion room. The core aspect of this intervention is amenable to being applied more generally as a strategy in acute settings, to reduce irritability that can be a precursor to aggression.

Altering the ambient sensory environment, especially reducing noise and light and introducing music and other gentle stimulus is a **promising practice** for reducing aggression, assault and subsequent use of restrictive practices. In addition, staff training to incorporate sensory modulation and to include a range of sensory-oriented group interventions can strengthen the therapeutic milieu, with greater impacts on aggression. The main hurdle to sensory rooms could be locating or building sensory rooms into an already crowded inpatient unit.

Consumer commentary: The role of the sensory system is important but often overlooked. Inpatient units often include design features such as fluorescent lights, hospital PA, and lack of outdoor space, which may further overwhelm an individual's sensory system leading to distress.

Risk assessment and management

We identified three articles that examined the issues of risk assessment and management: a review[52], a quantitative study from Victoria, Australia[53], and a qualitative study carried out in Belgium.[54] The latter also provided insights into nurse–patient interactions and practices.

Timberlake et al.[52] undertook a literature review to answer the question of how to manage non-suicidal self-injury (NSSI) in the psychiatric inpatient setting. They used the International Society for the Study of Self-Injury (ISSS 2007) definition *"deliberate, self-inflicted destruction of body tissue without suicidal intent and for purposes not socially sanctioned"* [52] Of key relevance to this Evidence Check was the exclusion of papers about populations with psychotic disorders. The authors report on nine papers that were specific to inpatient psychiatry but reviewed 36 in total as being relevant to intervention or models of care to manage NSSI, noting there is a paucity of empirical literature in this space. The review highlighted the value of using assessment tools to understand previous NSSI and predict future NSSI. They went on to highlight the admission procedure of searching and removing any implement that is potentially a tool for NSSI. Staffing was highlighted as key to preventing adverse events, particularly the need for a ward to have appropriate staff numbers, and having competent, engaged staff. Further, ensuring meaningful activity and assigning two therapists to develop a therapeutic relationship were both strategies found to be protective for NSSI.

Various therapies were reported to show promise in preventing NSSI in the inpatient setting such as distraction techniques (e.g. puzzles) and displacement techniques (e.g. snapping a rubber band on the wrist). Benefits have been shown for exercise, dialectical behaviour therapy (DBT), cognitive behaviour therapy (CBT), motivational interviewing, medication management, emotion regulation therapy and cognitive therapy (manualised).[52] The authors provided a number of strategies to manage acute NSSI including verbal de-escalation, constant special observation and, specifically, Psychiatric Monitoring and Intervention (PMI). PMI is recommended as it increased staff presences in milieu and sense of safety, as well as reducing the use of Constant Special Observation.[52]

In terms of models of care reviewed by Timberlake et al.[52], two stood out for the adult population: Safewards (previously described) and the Alexian Brothers Self-Injury Recovery Model. The Alexian Brothers Self-Injury Recovery Model proposes that the same underlying vulnerability is responsible for NSSI and mental illness and therefore stabilisation and interventions to address the vulnerabilities are treated using a three-pronged approach: strengthening intrapersonal and interpersonal approaches and physical–spiritual needs, while engaging the patient in all aspects of formulation and treatment. This approach appears recovery-oriented and supports patient agency but lacks empirical studies.

The analytic descriptive study by Maguire et al.[53] used archival case file data to examine associations between risk of aggression, assessed by a structured aggression risk assessment instrument (the Dynamic Appraisal of Situational Aggression, DASA), and nursing interventions designed to prevent

aggression. Data concerning 60 patients admitted for at least 60 days to acute mental health units in a state-wide inpatient forensic mental health service were analysed. Most interventions were provided once behaviour reached a threshold within the high-risk band, that is, relatively late, and pro re nata (PRN) medication was the most documented intervention. Further, males tended to receive more restrictive interventions such as PRN medication, whereas females received more reassurance and other less restrictive interventions. Although associations were reported between specific interventions and an increased likelihood of aggression in some risk bands, it is not possible to draw conclusions about cause and effect since other (unmeasured or unreported) factors may be more explanatory of whether aggression occurred. This highlights a major limitation of this study, which is based on associations only, in addition to relying on documented factors and a small sample. Patient preferences and recovery outcomes were not studied. This study was not designed to consider implementation factors. However, the authors speculated that a framework including primary, secondary and tertiary prevention linked to DASA risk bands may enhance the use of the DASA and provide an improved structure for nursing interventions. They also noted that many of the suggested interventions were not clearly defined, including how and when to apply them, and recommended staff training in relation to these interventions.[53]

Vandewalle et al., in a grounded theory study[54] examined nurse–patient interaction, including use of suicide prevention and safety planning protocols and caring empathic contact, among 26 psychiatric nurses assigned to adult patients experiencing suicidal ideation in the previous year. The study was conducted in 12 wards across four psychiatric hospitals in Belgium, a country where national suicide prevention policies are strongly emphasised. Findings stressed that all nurse–patient interactions are underpinned by protocols that are focused on safety and suicide prevention, such as assigning risk levels, using observation procedures and applying protective measures. Three interconnected elements were identified: ‘managing the risk of suicide’; ‘guiding patients away from suicidal ideation’; and ‘searching for balance in the minefield’, which contributed to the core theme of ‘promoting and preserving safety and a life-oriented perspective’. Analyses also indicated that, while some nurses adhere more to a controlling and directing approach when performing actions, others manage to reconcile their actions with caring contact, connection and collaboration. Linked with this, nurses’ perspectives reflected a conflict between upholding protection as a predominant aim and promoting and preserving patients’ autonomy and self-determination. The study is limited by not including patients’ perspectives or examining other factors such as hospital and ward culture that may influence nurses’ actions. Outcomes, including recovery outcomes, were not examined in this study, and neither was a specific suicide risk assessment approach.

Given the ubiquity of risk assessment and management instruments and protocols in inpatient settings, especially those where acute severe behavioural disturbance is more common, it is surprising how little recent research we identified. However, the limited available evidence suggests a need for greater attention to earlier intervention, better understanding and application of existing interventions, increased use of less restrictive interventions, and cultures and practices that support a collaborative and empathetic approach to nurse–patient interactions. Given the lack of literature, de-escalation can be considered an **emerging practice**.

Implementation

The aggression risk assessment approach described in Maguire et al.[53] can at best be considered an **emerging practice**. This approach may be suited to the NSW context considering the relevance of

the study setting. Vandewalle et al.[54] suggest their findings indicate that opportunities for debriefing, and supervision and leadership that places less emphasis on defensive and self-protective interventions and more on recovery-oriented interventions are warranted, although implementation was not studied directly.

Timberlake et al.[52] highlighted that harm minimisation was another approach with some promise and support from patients, who reported feeling empowered, and a reduction in frequency and severity of incidents. This approach can be controversial as it takes the stance of providing patients with a safe way to self-harm while supporting them to develop more appropriate coping strategies. More empathic and least restrictive care for patients with NSSI has been supported by a Dutch training program for staff, which has shown a positive shift in staff attitudes towards patients who engage in NSSI and self-efficacy in working with them. Finally, medications were found to be useful in one review, which highlighted those that act on the serotonergic, dopaminergic and opioid systems.

Consumer commentary: Mental health services have often anchored their practice in 'risk assessments' and 'risk management'. This often reflects mental health practices that are also crisis-driven. However, mental health systems that are recovery-oriented are more aligned with support and access at every step of the journey.

Consumer commentary: It is important to recognise the autonomy of the individual and their right to choose. Connection and empathy are also important.

De-escalation techniques

De-escalation encompasses a range of techniques that are used by staff to diffuse anger and aggression. It involves the use of verbal and non-verbal communication techniques by staff to support patients to regulate their emotional response. Little is known about how effective this is in practice or which techniques work best.

There are five articles in this topic group.[55-59] Most papers were from the UK[55-58] and Finland.[59] Study designs include one Cochrane review[55], one systematic review[56], one retrospective investigation and content analysis[56], one pilot study[55] and one qualitative investigation.[54] The Cochrane review by Du et al.[55] examined de-escalation techniques for psychosis-related aggression or agitation. The systematic review by Price et al.[56] explored the learning, performance and clinical safety outcomes of de-escalation techniques training for staff. The pilot study[58] assessed a stratification system for seclusion and restraint. Finally, the review by Kuivalainen et al.[59] explored the use of de-escalation and reasons for seclusion and restraint in a forensic inpatient setting.

The Cochrane review by Du et al.[55] did not find any randomised controlled trials for the topic. Du concludes that despite being recommended for clinical practice, there was insufficient evidence of efficacy for de-escalation techniques.

Price et al.[56] identified 38 studies from numerous databases from 1980–2014. Of these, 23 were uncontrolled cohort studies, 12 controlled cohort studies and three case control studies; no randomised control trials were identified. The authors determined that, overall, the quality of the studies was moderate to weak with only one study rated as strong, 18 as moderate and 19 as weak.

The authors conducted quality appraisal on the studies using the Quality Assessment Tool for Quantitative Studies and consolidated criteria for reporting qualitative research (COREQ). The qualitative and quantitative data were analysed separately. The authors also explored possible moderators of training effectiveness and evidence of the acceptability of training interventions. The review revealed the strongest impact of training was on de-escalation knowledge and participants' confidence to manage aggressive behaviour. It was also noted that experience and prior training rather than exposure to aggression predicted de-escalation knowledge and staff with no prior training improved the most. The review indicated that across study design, quality and training intensity, the findings were consistent in supporting increased confidence to manage aggression associated with training. However, Price et al.[56] warn confidence alone may not be useful in predicting improvements in actual behaviour or staff ability to de-escalate violent and aggressive behaviour. Self-awareness and the ability to connect interpersonally with consumers could play a more critical role in effective de-escalation and therefore may be more appropriate outcomes to measure in further intervention research.

The Price et al. study[56] revealed a number of organisational outcomes associated with training including a large and significant reduction in lost workdays, while other benefits included improved staff retention, reduced complaints and overall expenditure.

In terms of attitude modification, the review found little evidence to suggest de-escalation skills might be influenced through modification of staff attitudes. There was evidence of objectively measured improvements in de-escalation performance post-training despite variability in study quality and training intensity. However, Price et al.[56] warn these improvements were found using non-validated scales and were found in artificial training scenarios.

In terms of the impact of training on assaults, injuries, containment and organisational outcomes, there were limited conclusions that could be made due to the poor quality of evidence and conflicting results. The findings suggest the most consistent evidence of impact on clinical outcomes was found at the ward level. A reduction in rates of violence, aggression and injuries was found to be associated with training. Wards with high compliance with training appeared to benefit more from training compared with those with low compliance. The authors suggest this may reflect wards adopting whole-team approaches and that this is more likely to reduce the risk of assault than individual advances in knowledge and skills.

The review also explored the acceptability of training interventions. The key findings were that an increase in frequency, regular refresher courses, training relevant to the clinical context, trainer supervision and feedback on actual clinical interactions would all be beneficial in improving the training provided. Training for all members of a team to support whole-team approaches could also have positive effects. Also noted was the need for training content that considered aggression from a range of perspectives, i.e. aggression motivated by illness and non-illness factors. The studies also found participants wanted trainers to have practice credibility so training content could be linked to situations they experienced.

Overall, this review reveals that although it is assumed training may improve staff ability to de-escalate violent and aggressive behaviour, there is currently limited evidence for this. Most studies were of moderate to weak quality and there were no RCTs identified. Therefore, it is difficult to confirm that the training does in fact have the intended outcomes.

In their qualitative study, Price et al.[57] developed a new model for understanding staff intervention responses to escalated aggression by interviewing participants. The model suggests staff responses to aggression can be conceptualised as forming a support–control continuum. The study found staff managed aggression through three groups of techniques: support, non-physical control and physical control. Choice of management technique was influenced by multiple factors. The selection of appropriate de-escalation techniques was most often achieved where the staff member had a greater knowledge of the patient. Environmental factors were also highly influential on the success or failure of de-escalation. Finally, increased risk was often not a key factor informing choice of management techniques.

Concerningly, staff conceptualisation of de-escalation has significant practice implications. For example, many of the participants of the study conceptualised de-escalation including coercive non-physical control techniques, such as instruction, deterrents, reprimands and manipulating the environment. However, as the authors describe, the use of coercion is not considered as a de-escalation technique in literature. Other concerning factors that influenced the use management techniques included moral judgements of aggression, trial-and-error and ingrained custom.

A forensic-based pilot study[58] demonstrated a reduction in seclusion rates using individualised occupational health-related and other activities for patients on long-term segregation. The program used a stratification system (long-term segregation) which makes translation of findings to mental health intensive care or acute psychiatric unit care difficult. However, the person-centred approach to meaningful occupational and practical activities in this study has relevance for providing structure for acutely ill patients and reducing the potential for agitation or aggression.

The cross-sectional retrospective descriptive study[59] explored the reasons for seclusion and restraint and, in addition, whether de-escalation techniques were employed to assist consumers to calm down in a forensic psychiatric state hospital. The most common de-escalation technique employed was one-to-one interaction with a consumer, while extra medication administration and ‘arrangements in the facilities’—which included stimulus reduction actions such as staff escorting consumers to their room or providing an individual room—were identified as the second and third most common techniques, respectively. The reasons for seclusion and restraint were classified into four categories: direct harmful behaviour; threatening harmful behaviour; indirect harmful behaviour; and other behaviours. Notably, threatening harmful behaviour was the most common reason reported. In most cases de-escalation techniques were employed before seclusion and restraint; in some cases several techniques were used. The authors highlight that when the reason was indirect harmful behaviour, de-escalation techniques had not been employed before each episode. Further, they argued, due to the nature of the episodes, staff may have been able to react in a way that prevented the use of seclusion or restraint. Kuivalainen et al.[59] highlight that missing from the data were reports of supporting self-regulation among consumers in a challenging situation. Notably, this study only explored a first seclusion or restraint episode for each consumer and there was no investigation of situations where de-escalation techniques succeeded.

Summary

There is very little evidence about the effectiveness of de-escalation or the efficacy of different techniques in reducing violence and aggression. Notably, we found no randomised controlled trials in adult inpatient psychiatric settings. High quality research into de-escalation is needed, beginning with a clear articulation and definition of the practices and techniques. As Tully et al.[58] identify, despite the

absence of randomised controlled trials, pragmatic strategies such as the stratification of restrictive practices and a person-centred approach to meaningful occupational and practical activities have the potential to guide future practice to create a least restrictive environment. Given the lack of rigorous studies and agreement on clear articulation of de-escalation, an **emerging practice** rating is warranted.

> **Consumer commentary:** De-escalation starts before admission to an inpatient ward. If it is your expectation that your freedom is in jeopardy, that you will not be listened to, that your thoughts and feelings will not be respected, then you will likely enter the inpatient ward in fight or flight mode.

Trauma-focused Interventions

Two papers were included in this Evidence Check related to trauma. Both were quantitative, one from the UK[60] and one from the US.[61]

Aremu et al.[60] conducted a quantitative study regarding the implementation of education for trauma-informed care (TIC) and Brief Solution Focused Therapy (BSFT) in one acute inpatient psychiatric unit. After a rise in the use of forced PRN medication to manage agitation on the ward it was decided that staff needed further skills and expertise in therapeutic engagement. After two waves of training, positive results were achieved in relation to reduction in the use of PRN medication and improvement in staff attitudes and competence towards patient aggression as indicated by the MAVAS.

The authors highlight that getting inpatient staff to training posed a barrier to implementation, which was overcome when training was made mandatory. Short length of stay and high acuity also posed a barrier to therapeutic engagement.

Eye movement desensitisation and reprocessing (EMDR) is an empirically validated intervention for treating trauma, which uses an eight-phase approach. A non-randomised pre–post test design study looked at the efficacy of EMDR to manage acute mental health crises.[61] EMDR provided benefits to 57 patients who completed treatment (n=72), who post therapy experienced a reduction in suicidality, symptoms of PTSD, and anxiety and depression. The use of EMDR also increased participants' ability to manage their mental health and reduced the need for additional therapy. EMDR elevated patient confidence in managing their symptoms and mental wellbeing and developing an understanding of further therapeutic goals. Patients started EMDR therapy within days of the initial assessment. Further, when patients were moved between wards or to the community, or were discharged from acute services, EMDR treatment continued if patients agreed, enabling continuation of treatment. However, participant data was excluded if they did not complete post-treatment assessments. These factors may have potentially influenced the results.[61]

The strength of evidence is limited by the lack of a control group and its novel application to reduce suicidality. Only one other study has been conducted into EMDR's effectiveness in reducing suicidality; therefore, more rigorous research is required. The evidence may be deemed as **promising/emerging practice.**

Clinicians with EMDR training may be more readily available in a NSW context; however, it requires screening patients at admission to establish a trauma history if there is one. EMDR is a specific clinical intervention that requires training, which may pose a barrier to its use in mental health inpatient units.

Consumer commentary: Novel interventions such as EMDR are important to explore. However, it is unclear if it is best to start EMDR during a level of high stimulation. Interventions for trauma should be available to consumers throughout their journey, at a time of their choosing, and be completed according to best practice principles in accordance with the evidence.

Post-incident debriefing

Post-seclusion debriefing or event review processes have been included in many seclusion and restraint reduction initiatives since the 1990s, including in the three system projects reported above, but debriefing has rarely been subject to empirical research. In the review period, Goulet et al.[62] report a case study of such an event review process used in one team. The post seclusion and/or restraint review (PSRR) consisted of a structured approach for nurses to invite patient feedback; discussion with the patient and involved staff; and adjusting the care plan. PSRR was implemented via a brief training process and qualitative interview data was collected a month later. Analysing data from the perspectives of patients (n=3) and staff (n=12), the researchers identify that: PRSS was experienced positively by patients and staff, increased staff knowledge of patient feelings, and resulted in repaired relationships post event, though the PSRR was only implemented by staff following some but not all restraint/seclusion events. Feedback suggested there was also a reduced need for seclusion and restraint, but the data/sample was insufficient to show this. This case study provides preliminary support for PSRR specifically as an **emerging practice**.

Consumer commentary: Post-incident de-briefing offers an opportunity to talk about an experience which could be traumatic from the perspective of the consumer. In doing so it provides staff with an opportunity to better understand the consumer's perspective and requires that the event is acknowledged.

Cognitive behavioural therapy

A single blind pilot randomised controlled trial showed promising results for the acceptability and feasibility of cognitive behavioural suicide prevention therapy (CBSP) in eight acute inpatient psychiatric wards in the UK.[63] Thirty-seven patients were followed up six months post intervention (19 in treatment as usual and 18 in treatment as usual plus CBSP). Modifications were needed for the inpatient setting, but the pilot data indicates CBSP can be delivered safely in the inpatient setting. The researchers suggested that a larger trial was required to further assess this intervention.

Implementation issues were also not addressed. As this was a pilot RCT study, CBSP can be considered a **promising/emerging practice**.

> **Consumer commentary:** There has been waning evidence for CBT for people who have intense and ongoing mental health experiences. Approaches that focus on the dynamic and multifaceted contributors to mental health may better align with recovery-oriented practice.

Mindfulness-based therapy

Mistler et al.[64] conducted a small-scale study of the acceptability, feasibility and usability of a mindfulness mediation app, designed to reduce agitation and anger, on mobile phones on an inpatient unit. Thirteen patients agreed to use the app; 10 used the app for the seven days of the study and completed all measures. Two additional participants used the app for fewer than seven days and completed all measures. All participants found the app to be engaging and easy to use. Most (10/12, 83%) felt comfortable using the Headspace app and 83% (10/12) would recommend it to others. All participants made some effort to try the app, with six participants (6/12, 50%) completing the first 10 10-minute 'foundation' guided meditations.[64] Given the scale of this study and lack of outcome data regarding patient agitation or challenging behaviours, further rigorous research is required to assess whether a mobile-based mindfulness intervention can be of benefit. The use of a mobile mindfulness app can be considered **emerging practice**.

Implementation barriers are related to the usability of mobile devices in a psychiatric inpatient facility. Participants in particular highlighted that it was difficult to participate because of noise/lack of privacy/time. The authors note that in other similar studies that were not self-directed, patients did not have this problem because the researcher and hospital staff had responsibility for making appropriate space for the study.

> **Consumer commentary:** Mindfulness has experienced increasing clinical and mainstream popularity; as a result it is also widely accessible outside of mental health services, which makes it accessible. It may not be helpful for some consumers, especially those who experience trauma or panic, as it can lead to overwhelm.

Reflections on improvements to current practices

This group contained three articles for full-text review and summary. One of the articles was qualitative in design[65]; the others were quantitative studies.[66, 67]

The projects were all conducted in inpatient settings, with Insua-Summerhays et al.[65] and Robson et al.[67] in the UK, and Langsrud[66] in Norway.

Insua-Summerhays et al.[65] explored the key barriers to therapeutic engagement during one-to-one observation. It found staff difficulty in reflecting on their emotional and behavioural responses to

patients whom they perceived as challenging to engage was a key factor in maintaining 'negative reciprocal interactions'. The second theme captured ways in which barriers to engagement could be overcome. Normalising conversations and building trust and rapport through acts of compassion were identified as enabling patients to feel safe to discuss their distress or concerns. In turn, staff can better understand patients' experiences and work collaboratively to find solutions. The third theme focused on whether the risk management aims of one-to-one observation are compatible with therapeutic engagement. Privacy restrictions, the limitations of the ward's physical environment, the rotation of staff as frequently as every hour, and patients' lack of choice of staff were revealed to have negative impacts. Despite the negative impacts of some aspects of observation the potential for intensive engagement to reduce risk via emotional containment also emerged.

Langsrud et al.[66] explored the relationship between sleep duration and aggressive behaviour and incidents. The key findings suggest both short duration of sleep and greater night-to-night variations in sleep duration were associated with next-day aggressive behaviour and with aggressive incidents during the whole stay at the PICU. The paper adds to previous research highlighting the association between sleep and aggression, while also providing further insight into the types of behaviour associated with sleep variations.

Robson et al.[67] discussed the impact of a smoke-free policy on incidents of physical assaults. Following the introduction of the policy, when controlling for time, seasonality and confounders of violence, there was a significant reduction in the number of physical assaults. The authors report there was a larger decline in patient-towards-staff violence than patient-towards-patient violence. There was a 39% reduction in the number of physical assaults per month after the policy introduction compared with beforehand; a 47% reduction in the number of patient-towards-staff assaults; and a 15% reduction in the number of patient-towards-patient assaults.

A key limitation of the Insua-Summerhays et al.[65] study is the reliance on participants to recall observations that may have occurred months earlier when some may have also been heavily medicated or dissociated. Other influential factors include not all staff conducting observations themselves and not being aware of policy mandating engagement.

The Langsrud et al.[66] relied on nurses observing sleep and, as noted in the paper, this is 'lower than the gold standard' of sleep assessment with polysomnography (PSG) or actigraphy.[66] It was also noted that there were limited aggressive incidents, as measured by the SOAS-R, throughout the study duration. Other influential factors such as medication, restrictions in behaviour and the timing of lights on and off, were not recorded. Additional factors that may have affected patients such as multiple admissions, pharmacological treatment, compliance and symptom level were also not analysed in this study.

The limitations noted by Robson et al.[67] include the inability to determine causality, inability to determine if the effects of two or more policies introduced simultaneously were at play (although there was no evidence that there was another policy introduced), and inability to separate the data for confounders for individual wards. The model also assumed no change in the composition of the population at risk over time; the study accounted for this to an extent by including variables to indicate characteristics of the case-mix of patients being treated each month.

Because of the statistical analysis procedures that had to be taken, Robson et al.[67] warn care should be taken when interpreting the results. It should be noted that the smoke-free policy introduced tobacco-dependence treatment, staff training and allowing e-cigarettes. Noted also is the possibility of

other variables having an impact on the results including staff characteristics and the physical environment. The study's reliance on staff written reports of physical violence may have contributed to the identification of violence directly related to smoking.

Insua-Summerhays et al.[65] encourage staff to use a recovery orientation, not only focusing on reducing risk, but on facilitating personalised therapeutic engagement. Normalising conversations and building trust and rapport through acts of compassion were revealed to enable patients to feel safe to discuss their distress or concerns. In turn, staff could better understand patients' experiences and work collaboratively to find solutions.

Langsrud et al.[66] suggest their findings offer an improved prediction of aggression and that supporting patients to stabilise their sleep may have a range of beneficial effects. These findings may facilitate general wellbeing for patients and a reduction in the need for reactive measures for aggression, which have implications for recovery.

In the research from Robson et al.[67] patients who smoked were required to engage in smoking cessation activities because of the smoke-free policy. Despite the potential limitation to freedoms, the policy gave patients the benefit of smoking cessation aimed to protect health and reduce health inequalities, along with opportunity to engage in long-term smoking cessation. They could choose nicotine replacement therapy type and were able to purchase e-cigarettes.

All these interventions appear to be feasible in the NSW context, where it seems appropriate to monitor the impact of smoke-free policies, develop strategies to improve the sleep of people in inpatient units, become more recovery-oriented in how one-on-one observation is carried out, and undertake reflection to improve de-escalation strategies. The papers suggest the value of recognising that staff and patients may have different perspectives and that both need to be heard and validated.

Implementation

In addition to the need for establishing models and frameworks for these recommendations, we noted several implementation enablers and barriers from the research.

One such implementation barrier may be the establishment of staff supervision. Supervision of staff may provide support for developing therapeutic engagement in clinical practice.[65] Insua-Summerhays et al.[65] argued supervision may aid staff in developing their understanding of difficult dynamics during observation that impedes rapport-building. Further, it was articulated that supervision might aid staff in managing their reactions and emotions towards patients they felt were challenging to engage with. Another barrier to therapeutic engagement can be the ward environment, which may be noisy and chaotic.[65]

The recommendations from Langsrud et al.[66] require staff to observe and log sleep, which may be a barrier to implementation. For the smoke-free policy implementation, challenges involve the training of staff in smoking cessation care.[67]

The strength of the evidence in this group of papers is limited. The recommendations and measures from the papers did not define a specific model of intervention but provide recommendations for contributing factors or improvements in current practices. These articles provide evidence for **emerging practice**.

Consumer commentary: The ban on smoking has been controversial. Although there have been efforts to increase alternatives and nicotine replacements, it is nonetheless a difficult time in which to implement this change.

PRN and other adjuvant medications

We identified three articles that addressed medication: a US case series[68], an Irish qualitative study[69] and a Cochrane systematic review.[70]

Skoretz and Tang[68] described three case studies concerning women diagnosed with schizophrenia-spectrum disorders, all of whom were incarcerated in a forensic inpatient unit. These women had previously experienced adequate control of psychosis through clozapine treatment and the addition of the stimulant methylphenidate was successful in reducing residual impulsive aggression and violence. However, larger and more generalisable trials are needed for these findings to be reliable, especially since they run counter to previous findings with respect to stimulants in patients with psychosis.

The study by Jimu and Doyle[69] explored the process of pro re nata (PRN) administration by mental health nurses, how they decide to administer PRN and what, if any, therapeutic interventions are used before administration. This was a broad exploration of PRN administration, including for insomnia, agitation or anxiety, among nurses working in three acute inpatient units (one a high-dependency unit) in a single mental health service. Most participants reported PRN administration followed appropriate assessment, but inappropriate use of PRN was noted at times (e.g. by administration to try and deflect the potential for violence or to keep patients quiet). The study highlighted the poor practice of using PRN as a first line of intervention without consideration of alternatives, especially when patients couldn't sleep or were becoming agitated. There were some interdisciplinary sensitivities about instructions regarding the use of PRN medications between doctors who prescribed them and nurses who dispensed them (e.g. participants felt undermined in their professional autonomy by explicit instructions by doctors on charts re PRN administration).

The systematic review by Douglas-Hall and Whicher[70] provided an update of Cochrane reviews in 2001, 2006, 2012 and 2013. The focus of the review was to compare the effects of 'as required' or PRN medication regimens in addition to regular medication regimens for the treatment of psychotic symptoms or behavioural disturbance. Despite being a widespread practice, the systematic review did not find any relevant randomised controlled trials (RTCs) comparing PRN medications in addition to regular medication in this setting. Thus, they found no evidence from RTCs to support the practice.[70] Notably, the authors did not look for studies whose participants suffered from behavioural disorders alone.

The failure to identify more articles about PRN medication is surprising given how common a practice this is, especially in relation to responding to acute and severe behavioural disturbance. Given the paucity of evidence, this theme of papers can be rated as an **emerging practice**.

As Douglas-Hall and Whicher state, the practice of PRN medication regimens are based on *"clinical experience and habit"*.[70] The research designs of the identified articles precluded definitive conclusions about effectiveness of the medication approaches studied and their applicability to the

NSW context. Neither study reported findings in relation to recovery or patient choice and control. However, PRN medication regimes have implications for risks to consumers through overuse and polypharmacy, especially where explicit instructions for their use are not provided by doctors on charts. The use of PRN medications can be perceived as punitive by consumers where staff rely on PRN medications to manage agitation or behavioural disturbance effects.

While Skoretz and Tang [68] did not report on implementation issues, Jimu and Doyle[69] discussed the possibility that lack of staff education and skills, particularly since most study participants had been qualified for less than five years, increased the likelihood of PRN medication being used as a first option. Their findings suggested mentoring of junior nurses by senior nurses would help to mitigate this. Douglas-Hall and Whicher[70] suggested the use of PRN medication is widespread as it provides nurses with the freedom of a quick response in an acute situation or at the consumer's request.

Consumer commentary: The experience of being sedated is infrequently discussed. Sedation can be a scary and uncomfortable experience.

Mania pathway protocol

Adri[71] developed a clinical guide, the mania pathway protocol, for patients with mania related to bipolar or schizoaffective disorder for the purpose of rapid mood stabilisation.[69] Staff were educated about the protocol and evidence-based practice, a combination therapy of mood stabilisers and antipsychotic medication to stabilise patient mood by day five of treatment. All clinicians scored 100% on a post education quiz and, for the 19 patients treated using this protocol, the Young Mania Rating Scale (YMRS) showed a steady decline in mania over four time points (day 1, day 5, day 10 and discharge).

Consumer commentary: It is important to develop protocols with consumers in a way that is recovery-oriented.

Novel interventions

This group contained two articles. All the research was conducted in an inpatient setting, from the US[72] and Australia.[73] Notably, the Australian article, Hall et al.[73], was from an acute mental health inpatient unit in NSW. Both articles were qualitative in design.

Each study explored a different novel intervention, including the use of animal assisted therapy (AAT) to reduce incidents of violence and aggression and the therapeutic benefit of a music group conducted by non-music therapists. The novel interventions explored in the articles were based on existing models or therapies, with AAT[72] and the music group[73] exploring unique applications.

The use of equine assisted psychotherapy (EAP) was found specifically to reduce incidents of aggression and violence, which lasted for several weeks after the therapy ceased.[72] The music group

was found to improve the mood of participants, relationships with staff, social connectedness and ward atmosphere.[73]

The strength of the evidence for these novel interventions is limited. The research by Nurenberg et al.[72] featured an RCT design; however, many of the findings were not statistically significant. In addition, the main standardised instrument (OAS-M) that reported significant findings used only the first three questions. Finally, the main body of measurement data was derived from hospital incident reports completed by nursing staff.[72] The article by Hall et al.[73] was a small qualitative feasibility study with limited patient involvement. Notably, both articles relied heavily on staff observations and accurate reporting for their findings and were the sole studies of their type. The articles from Nurenberg et al.[72] and Hall et al.[73] form evidence for **emerging practice**.

The research by Nurenberg et al.[72] included intervention groups with both canine assisted psychotherapy (CAP) and EAP. However, only EAP was shown to be effective in reducing incidents of violence and aggression. Some of the measures did not achieve significance, attributed to variance in the measures and population. Furthermore, the lack of CAP efficacy findings was attributed by the authors to a low incidence of pre-trial violence in the CAP group.

Hall et al.[73] found many of the patients who participated in the music group did not want to participate in the focus groups, which limited patient perspectives in the study. The researchers and program initiators were the same, which could have led to bias in reporting. Finally, the short lengths of stay in IPUs meant the study did not have capacity to investigate longer lasting or enduring effects.

The novel interventions all offered choice of participation in activities and duration. Each of the interventions provided some benefit to recovery and could be considered recovery-oriented practice. Notably, AAT in other research has been shown to have benefits in multiple domains of wellbeing and recovery as it has positive impacts on self-esteem and social inclusion. Finally, the music group encouraged people to use existing skills and interests, contributed to social inclusion and improved relationships with ward staff.

The suitability for the NSW context differed for each of the novel interventions. Equine-assisted interventions may be challenging to implement in urban areas. The availability and cost of suitably trained animals and therapists in NSW would need to be explored. The music group was developed and implemented in a NSW inpatient unit, so has demonstrated applicability in this context.

Implementation barriers and enablers of the novel interventions also vary. Notably, EAP has significant barriers in cost, available resources and suitable locations. The music group barriers are staff capacity. The music group requires staff to have musical ability (either an instrument or singing) and a willingness to participate. Despite many patients enjoying the atmosphere, Hall et al.[73] noted the noise from the music group could contribute to agitation and sensory overload for some patients, who then needed to retreat.

Consumer commentary: Connecting to animals and music is important to many people. Within an inpatient unit it is important to have opportunities to connect to things that matter to you.

Design / environment

Physical design supporting better outcomes for patients

Our recent Evidence Check rapid review[74] indicated that the physical environment of inpatient mental health services can have a role in supporting better outcomes for patients. The results are briefly summarised here.

For this Evidence Check, we searched peer-reviewed literature for studies about architectural design and the use of restraint and seclusion in mental health facilities. Academic databases included the Cochrane Library, Medline, PsycINFO, Scopus and Avery, searched from January 2010 – 28 August 2019 for English-language papers only. We identified 35 peer-reviewed studies.

The findings revealed several overarching themes in design efforts to reduce the use of seclusion and restraint: a beneficial physical environment (e.g. access to gardens or recreational facilities); sensory or comfort rooms; and private, uncrowded and calm spaces. However, the critical appraisal indicated that the overall quality of studies was low and, as such, the findings should be interpreted with caution.

Efforts towards a more **beneficial physical environment** can contribute to the reduction of aggression and use of restraint and/or seclusion, which may vary from relatively simple renovations and attention to decor all the way through to a change of building that enables a modernisation of facilities and ensures access to gardens, recreational spaces and sporting facilities.

The provision of **private and calm spaces** was a key design theme, highlighting the importance of minimising crowding of inpatient units, of noise reduction and ensuring that people have access to quiet places and rooms over which they have some control. As Ulrich et al.[75] suggest, changes to physical features may reduce the environmental and psychosocial stressors that can result in patients experiencing distress and aggression. Good design is likely to support the prevention of distress, conflict and/or aggression.

These studies also support having a **sensory or comfort room** to provide a soothing, peaceful space, and the use of sensory modulation techniques to assist with emotion regulation, as reviewed above.

Ultimately, better outcomes for patients are likely be achieved through a multi-layered approach to design—founded on good design features and building towards more specific design features that may reduce occurrences of aggression, seclusion and/or restraint. The foundational design principles include privacy, adequate space, no overcrowding, exposure to daylight and other appropriate lighting, use of colour, reduced levels of unpleasant noise, access to gardens, art that features nature, a homelike environment and easy wayfinding. Taking a recovery-oriented approach to mental health care is an established expectation for mental health services and the physical environment can contribute to this.

Open-door policies

There have been ongoing concerns about the lack of benefits and shortcomings of permanently locked doors in inpatient mental health wards and units. We found two studies[76, 77] and one

correspondence piece[78] that discussed locked-door or open-door policies in relation to absconding, self-harm, suicidal behaviour, aggression and/or restraint and seclusion.

The two studies, from Germany, looked at the same observational dataset containing data from 21 inpatient psychiatric hospitals. The first study[76] investigated whether hospitals without locked wards and hospitals with locked wards differed in rates of suicide, suicide attempts and absconding. They also studied whether different ward types (closed, partly closed, open, and day clinic) made a difference. Results showed no difference between hospitals with and without locked wards in self-injury, suicide attempts or suicides. Absconding was lower in hospitals without locked wards. Furthermore, patients treated on an open ward were less likely to attempt suicide or abscond.

The second study[77] investigated whether hospitals without locked wards and hospitals with locked wards differed in aggressive behaviours and the use of restraint and seclusion. They showed no difference between hospitals with and without locked wards in aggressive behaviours, but restraint and seclusion were less likely to occur in hospitals without locked wards. Patients treated on an open ward were less likely to display aggression and the use of seclusion and restraint was significantly lower. Of note, the risk of damage to property and bodily harm was *increased* on partially locked wards.

In a short correspondence piece, McCauley and Smith[78] express their concerns about increased incidences of absconding after unlocking psychiatric wards. They (briefly) report an increase in unauthorised absences after their service in Ireland transitioned from a locked acute ward to an unlocked newly built unit, together with an increase in seclusion (hours a month) and a decrease in violent incidents. However, they also report increased admission rates during the same period and the results are not part of any study design.

Overall, the findings suggest implementing a locked-door policy does not produce the intended reductions in aggression, self-injury, suicide attempts or suicides. On the contrary, hospitals with open-door policies were associated with less absconding and fewer incidences of restraint and seclusion. Furthermore, open wards were related to fewer suicide attempts, less absconding and aggression and less use of restraint or seclusion, although the McCauley and Smith[78] paper suggests taking a cautious approach.

One qualitative study, Kalagi et al.[79] sought multidisciplinary opinions before the implementation of (limited) open-door policies in Germany. A range of key stakeholders was interviewed including patients, psychiatric nurses and psychiatrists. All participants were largely in favour of the policy change but highlighted several requirements for successful implementation. First, this included intense observation and door watching, although nurses considered the role of door watcher problematic and counter to their professional role and training. All interviewee groups agreed open-door policies were more successful with more staff, and staff training was highlighted by both professional groups. All groups also agreed on the need for bigger spaces and access to nature or gardens. Interestingly, all three interviewee groups suggested seclusion or small locked divisions as a way of handling agitated patients.

Currently, evidence as to the effects of open-door policies on inpatient psychiatric wards remains limited although it shows promising results and thus may be considered an **emerging practice**. Open-door policies and open wards are in line with treatment approaches that respect patients' choice and autonomy and promoting patient–staff interaction and relationships without reducing staff safety. Staff should be provided with the necessary training and treatment frameworks to feel and

work comfortably within an open-ward environment. Furthermore, adequate staff numbers and design features were highlighted as a key factor. It is likely that positive outcomes of an open ward go hand-in-hand with a positive therapeutic milieu and treatment model/approaches that are recovery-oriented.

Consumer commentary: Being 'unable to leave' at will is something that most living beings find frightening and frustrating. It is understandable that this causes frustration and anger to people in a locked inpatient ward.

Grey literature findings

Gooding et al.[16] identified a number of strategies to reduce coercion used in hospital settings, including the Six Core Strategies©, Safewards approaches, the 'methodical work' approach, de-escalation techniques, open-door policies, efforts to improve the physical environment and ward culture and adequate staff/patient ratios. They highlight the importance of both top-down and local-level leadership (i.e. ward level) to create and maintain a broader cultural change that emphasises a recovery-oriented and trauma-informed approach. Additionally, they note emerging evidence that leadership should include peer involvement for ultimate effectiveness.

In a submission to the Hon Peter Anderson AM's review of security in NSW hospitals, the NSW Nurses and Midwives Association[17] reported a lack of faith in policies and procedures related to the prevention and management of violence. They expressed serious concerns about staff safety and the management of violence and/or aggressive incidents, including leadership and management issues, lack of support and training and staff shortages. In 2018, Anderson was engaged by the Ministry of Health to conduct this review to identify and consider whole of NSW Health strategies for security in hospitals to ensure staff, patients and visitors were kept safe from violence and aggression. The review's final report, *Improvements to security in hospitals,* was released in 2020[80] and made a series of recommendations to NSW Health. NSW Health responded to each of the recommendations and continues to report progress against these recommendations.

The Eastern Health submission to the Royal Commission into Victoria's Mental Health System[14] reported several challenges related to program improvement and reducing seclusion and restraint, including a more volatile group of (inpatient) consumers, lack of experienced inpatient unit workforce with limited senior support and high casual and agency use, a lack of resources (such as staffing and diversional activities) and the facilities not being purpose-built. The fact that the facilities are not purpose-built is seen as directly linked to aggression and violence experienced by inpatient unit staff. It is also noted that with reduced length of stay (average of 9.4 days in May 2019) there is limited time to build rapport and undertake comprehensive discharge planning, which adds to the stress levels of staff. Interestingly, Eastern Health has successfully improved sexual safety on the inpatient units. Their approach included training, infrastructure, processes orientation practices, resource availability and leadership. Further details of this approach were not reported. Ongoing challenges associated with sexual safety have led to the proposal to have gender-specific and gender-diverse (e.g. for people identifying as transgender) units.

Finally, the Office of the Public Advocate's (OPA) submission to the Royal Commission into Victoria's Mental Health System[15] mentioned similar challenges contributing to decreased levels of safety (for both staff and consumers), including staff shortages, mix of residents, and sexual safety issues. Furthermore, it also noted that those services providing meaningful activities had fewer consumers experiencing boredom and less aggressive incidents. Importantly, it highlighted that the key to success when implementing a clinical practice framework was a system-wide commitment including adequate funding, leadership and explicit processes to operationalise its core principles.

Gaps in the evidence

It is important to acknowledge that there are many challenges in conducting high quality and credible research in this area of mental health practice. Consequently, a number of gaps in the evidence can be identified, which include:

- There is a notable lack of co-designed research and consideration of inpatient views and perspectives in this domain of research.
- There is an absence of research describing the use and implementation of peer support worker roles in acute inpatient settings and little systematic reporting of the impact of these roles in reducing high acuity and acute severe behavioural disturbance in mental health inpatients.
- Similarly, the literature provides little guidance as to how families and significant others can be effectively included in responses to high acuity and acute severe behavioural disturbance.
- Available research fails to adequately consider effective responses to acute severe behavioural disturbance among diverse inpatient groups including culturally and linguistically diverse populations, Aboriginal and Torres Strait Islander groups and LGBTIQ communities, and how these might require adaptations to take account of their diverse experiences.
- There is an absence of research into the implementation of recovery-oriented practice as a foundation for other models and interventions in this area of practice.
- Although prominent in mental health policy and featuring among the Six Core Strategies©, trauma-informed care did not figure as a source of individual study. Further, very few specific practices were described for acute settings and there is no systematic research about the effectiveness of trauma-informed care for preventing acute severe behavioural disturbance.
- Although there are signals in the literature about the importance of the environment, including ward design, crowding, the ward milieu and so on, there is a lack of research into how environments that support the reduction and prevention of acute severe behavioural disturbance can be intentionally designed and how existing environments can be optimised, perhaps reflecting low expectations for acute psychiatry ward design, as opposed to, for example, cancer wards.
- Linked with this, shortcomings of ward design in the mainstreaming environment create obstacles to healthy activity and exercise as a means to relieve stress, and studies of the best ways to enable healthy levels of physical exercise in acute settings are absent.
- Despite longstanding evidence that inpatients are lonely, bored and fearful of others, all contributing to demoralisation and conflict, there is little focus on what constitutes meaningful activity for inpatients.

- There is a lack of research to support detailed recommendations and models for optimal therapeutic engagement, via groups and individually, to reduce and prevent acute severe behavioural disturbance, as well as evidence regarding optimal team configurations to enable this.
- There is minimal research into very common inpatient practices such as PRN prescribing and risk assessment and management, and into the many guidelines and protocols and instruments that are developed to support these practices.
- In relation to the best use of PRN medication, the lack of high-quality evidence is surprising and concerning given that it is such a widely accepted practice, especially on inpatient units in the context of conflict events.
- In relation to risk assessment and management, research to identify the multiple contributory factors to risk-averse approaches to inpatient care is absent, as are explorations of the ways in which the inherent tensions between risk-averse policies and practices and consumer recovery can be resolved.
- As in many other fields of enquiry, there is a conspicuous lack of research into how best to implement and sustain practice change.

Discussion

Summary of key findings

This Evidence Check rapid review of the literature identified a relatively large number of studies that have attempted to address the issue of reducing high acuity and acute severe behavioural disturbance (ASBD) in mental health inpatients. We found there was limited rigorous research, and instead mostly a broad array of methods arising from a small number of RCTs, as well as case studies and descriptive analysis of single-ward data. Even so, in the absence of evidence that clearly identifies a single most effective model of care, two prominent models of care emerged in this Evidence Check: Safewards, a model originating in the UK, and the Six Core Strategies©. The Six Core Strategies© originated in the US and has been adapted as REsTRAIN YOURSELF in the UK. Both these models seek to prevent ASBD and have been associated with reductions in ASBD events. Both rely on the adoption of core principles that guide its implementation.

Safewards is of particular relevance to studies of ASBD, first, because it takes into account a range of conflict events beyond aggression per se. The focus of Safewards has been on conflict events broadly as a primary outcome, in contrast to research over decades dealing with specific types of incidents, such as aggression. Dickens et al.[19] reflects on research underpinning Safewards that shows *"the significant correlations between subsets of measures of more serious aggression (e.g. violence) and containment (e.g. restraint) and the total incidence of conflict and containment using broad definitions which include relatively low severity levels of conflict (verbal aggression, breaking ward rules) or, again relatively, low-coercion containment measures (PRN medication, time out)"* (p.2).[19] The Safewards model provides an important conceptual link across types and severity of problematic behaviour and across the greater and lesser imminence of threat.

Similarly, the Six Core Strategies© rely on harm prevention theory to build a comprehensive solution to the very specific problem of harms caused by restrictive practices. The goal of preventing restraint is addressed by rebuilding the focus of care.

In relation to understanding and intervening in ASBD, the Safewards model considerably broadens the focus from the longstanding emphasis on patient symptoms as the key cause of disturbed behaviour. Safewards has the potential to acknowledge that there are many factors that drive staff towards the use of seclusion, including aggression from both patients and staff.[36] Consideration of the behaviour of patients is included in the model within the domain of 'patient characteristics', but the model places these considerations in a frame that encompasses all actors in the psychosocial, legal and organisational ecology of acute inpatient settings. Independent of the Safewards interventions, the Safewards model can be of use in developing, organising and implementing practice changes to reduce ASBD. While still focused on reducing events of conflict/ASBD, the model encompasses the preventive agenda by drawing attention to the breadth of opportunities for interventions in the setting that are distal from events of ASBD.

The Six Core Strategies© was a key feature of national practice change programs in the US and it has demonstrated the importance of having a multilevel complex practice change intervention, targeting both organisational and individual factors in decision making about care.

Both these models highlight the importance of leadership and management. The models rely on support for key aspects of implementation, such as enabling staff to attend training and also in directly engaging with what is happening on the ward, including the 'walk arounds' that are a component of ReSTRAIN YOURSELF. This attention to the role of leaders and managers is complemented by other studies that emphasise the value of staff having access to supervision.[54, 65]

As we have suggested, the Six Core Strategies© is promising/best practice in itself but also offers evidentiary support for a number of other focused interventions of interest to this Evidence Check. The evidence in particular from the UK equivalent, ReSTRAIN YOURSELF[40], supports:

- Training for trauma-informed care
- Safety planning/ individual safety plans
- Sensory modulation
- Post-event analysis for debriefing.

Although it is difficult to confirm the effectiveness of a range of training activities for intended outcomes, training remains an important factor in implementing new ways of working and enabling skills development. There appear to be only modest results about its effectiveness in responding to ASBD in this Evidence Check. Training in the Safewards model[29] and in the Six Core Strategies©[34] appears to be effective in achieving practice change when it is systematic and covers sufficient numbers of staff. In contrast, Price et al.[56] found wards with high compliance in training appeared to benefit more from training compared with those that had low compliance. Hence, consistent uptake of training by all inpatient staff is likely to be an important factor in efforts to change practice or enable new approaches. It reinforces the value of the emerging evidence for whole-of-team approaches, especially those that take an ecological approach that considers environmental and ward factors along with patient/illness factors that contribute to aggression. Team-based approaches were supported because of the range of skills required to address ASBD, including nursing, OT, psychologists, social workers and medical staff [42, 46] While largely absent from the papers we reviewed, our consumer commentary suggests peer support workers should be included in this list to enable lived experience expertise to contribute to inpatient teams. A team approach to maintaining a positive ward climate/milieu forms an important component of the prevention of events of ASBD. This Evidence Check indicated the value of monitoring climate/milieu and the Broset Violence Checklist offers an example of how staff can be prompted to respond to increases in patient-related dynamic features such as irritability.[32]

We included four papers in this Evidence Check that highlighted 'specialist teams' to support the ward treating team to manage patients with ASBD. Two papers in particular provide a worthwhile conceptual basis for understanding aggression and violence from an ecological perspective[44, 45], one that takes into account the environmental factors that influence each patient as well as symptoms of mental ill health. Involving specialised 'behaviour teams' in the NSW MHICU context may not be feasible, but these approaches offer sound practice guidance for including a behavioural specialist in each team and enabling the use of behavioural assessment and planning reported in these papers.[44, 45]

Many of the studies referred to the importance of the environment and ward design[74] and working conditions. A ward that is poorly designed or a persistently unpleasant place to be can be a factor in

entrenching difficulties, so that attempts to introduce an intervention can only offer temporary improvement. An example is when the Psy-BOC team has an impact but this is difficult to sustain when fundamental conditions do not change.[43] Environmental factors were found to be highly influential on the success or failure of de-escalation.[57]

Meaningful activities are important prevention techniques.[40, 52] Having fewer patients experiencing boredom appears to lead to fewer aggressive incidents and reducing boredom may be an important contributor to improving the overall experience on the ward, as our consumer commentary indicates. As Tully et al.[58] found, a person-centred approach to meaningful occupational and practical activities has relevance for providing structure for acutely ill patients and reducing the potential for agitation or aggression.

The value of transparency and feedback, such as what can be achieved from post-incident debriefing, found support in this Evidence Check. It is an intervention that is experienced positively by both patients and staff. However, apart from this, few of the studies we reviewed considered the perspectives of patients, peer support staff and other consumers. However, those that did highlighted that to prevent aggressive incidents, patients require more humane treatment and opportunities for freedom and choice and control.[37] Improved ward routines were favoured by patients, as well as interpersonal contact, personalised de-escalation techniques and shared decision making during coercive measures.[37] Enabling choice was identified as important in some studies, especially from the patient perspective, and this included who a patient might prefer to interact with[65], or what music they would prefer to hear [51] and their preferred nicotine replacement therapy.[67]

Awareness of sensory issues is emerging as a valuable strategy in reducing high acuity and acute severe behavioural disturbance among mental health inpatients. Sensory rooms are a positive addition to a ward and there is some research evidence supporting their efficacy. However, when only select patients may be able to access the room or a patient can only access the room when the OT unlocks it suggests the implementation of sensory rooms needs to be reconsidered to enable the patient preferences for greater choice and control. While some sensory equipment may only be suitable when its use is guided by a trained staff member, many items could be made more easily accessible. In this way the Safewards intervention of the Calm Down Box is more patient-oriented as it is always intended to be freely accessible to all patients.[43] In some wards in the Safewards Victorian trial, individualised kits were made once patients knew which equipment they liked best.[81]

A key factor underlying most of the models and interventions reviewed is therapeutic engagement between staff and patients.[60, 65] Individual engagement is highly regarded by patients and the relational security initiative was the best of the new initiatives from the perspective of consumers in the study by Long et al.[40] Another study suggested the value of caring contact, connection and collaboration in suicide prevention and safety planning.[54] Good therapeutic engagement can influence the experience of a range of interventions from the patient's perspective. Studies highlight the value of continuity of care and the quality of relationships that can be developed on the inpatient unit, but also highlight the challenges, such as when staff might be rotated as frequently as every hour in a one-to-one observation.[65] Patients, too, may be moved from one unit to another or have a short stay, and this highlights the value of efforts to enable continuity of an intervention across multiple sites.[61] Also, as [57] found, self-awareness and the ability to connect interpersonally with patients could play a more critical role in effective de-escalation than other factors such as confidence.

Implementation lessons

The papers we reviewed generally did not outline clearly the implementation barriers and enablers, although key themes were highlighted earlier in the discussion, related to the importance of enabling training, buy-in from stakeholders at all levels of the organisation and assessment of progress via fidelity checks, for example. We also noted some examples of implementation coming up against barriers such as lack of management support and lack of engagement from front-line staff.

The Consolidate Framework for Implementation Research is a meta-theoretical approach to understanding factors that affect the implementation of new interventions in complex health settings.[82] It includes five high-level constructs that we will use to outline implementation barriers and enablers. This list below offers insight from reviewers informed by the papers.

Intervention characteristics

Enablers included things such as:

- Clearly articulated model or intervention with supporting documentation, e.g. Safewards
- Sound evidence base, e.g. Safewards or Sensory Modulation
- The potential for local adaption, e.g. Six Core Strategies©.

Barriers might include:

- High cost to access materials.

Outer setting

Enablers may be:

- Government policy, e.g. recovery-oriented practice
- System-wide commitment to implementing a new model of care, e.g. Six Core Strategies©
- Linking organisations with other organisations making similar changes, e.g. Safewards.

Barriers may be:

- Lack of understanding or organisational prioritisation of patients' needs.

Inner setting

Enablers include:

- Leadership within the organisation supporting and setting expectations about implementation, e.g. executive walkarounds in ReSTRAIN YOURSELF
- Providing training for teams in an environment conducive to learning
- After training, further efforts to support implementation and embedding interventions in practice, e.g. supervision and reflective practices.

Barriers may be:

- High acuity
- Staff turnover
- Lack of management support
- Attempting to train 24/7 shift-working staff.

Characteristics of individuals

Enablers are:

- Appropriate knowledge, skill and self-efficacy of staff who will implement the intervention.

Barriers included:

- Staff not seeing value or applicability of the intervention to them or the environment
- Staff resistance to change.

Process

Enablers include:

- Appropriate planning for the implementation of the intervention such as the approach embedded in Safewards training for staff to create an implementation plan specific to their workplace
- Engaging people at all levels of the organisation before starting implementation
- Formally appointed staff to carry the implementation
- Appointing champions
- Involvement of patients in implementation at the outset
- Reflecting and evaluating progress by seeking opinions of stakeholders and assessment of data
- Undertaking structure fidelity assessment.

Conclusion

In this Evidence Check we aimed to review literature that helps to address acute severe behavioural disturbance in patients admitted to Mental Health Intensive Care Units. We have reviewed papers covering a wide range of themes, from best practice models of care such as Safewards and Six Core Strategies© to emerging practices that show promise, such as the reflection on the therapeutic relationship during constant special observation. Despite the clearly established need for inpatient mental health settings to be more recovery-focused and person-centred, there was a lack of research into key practices that are commonplace, such as de-escalation and the use of PRN medication, thus reflecting the challenges of conducting rigorous research in such settings. Therapeutic engagement, meaningful activities and safe and welcoming spaces were features that cut across numerous papers in this Evidence Check. In terms of implementing practice change, leadership and a system-wide commitment are of key importance, as is appropriate training of adequate numbers of staff. This Evidence Check has highlighted that reducing coercive practice and supporting patients through behavioural challenges requires multilevel, complex practice change interventions.

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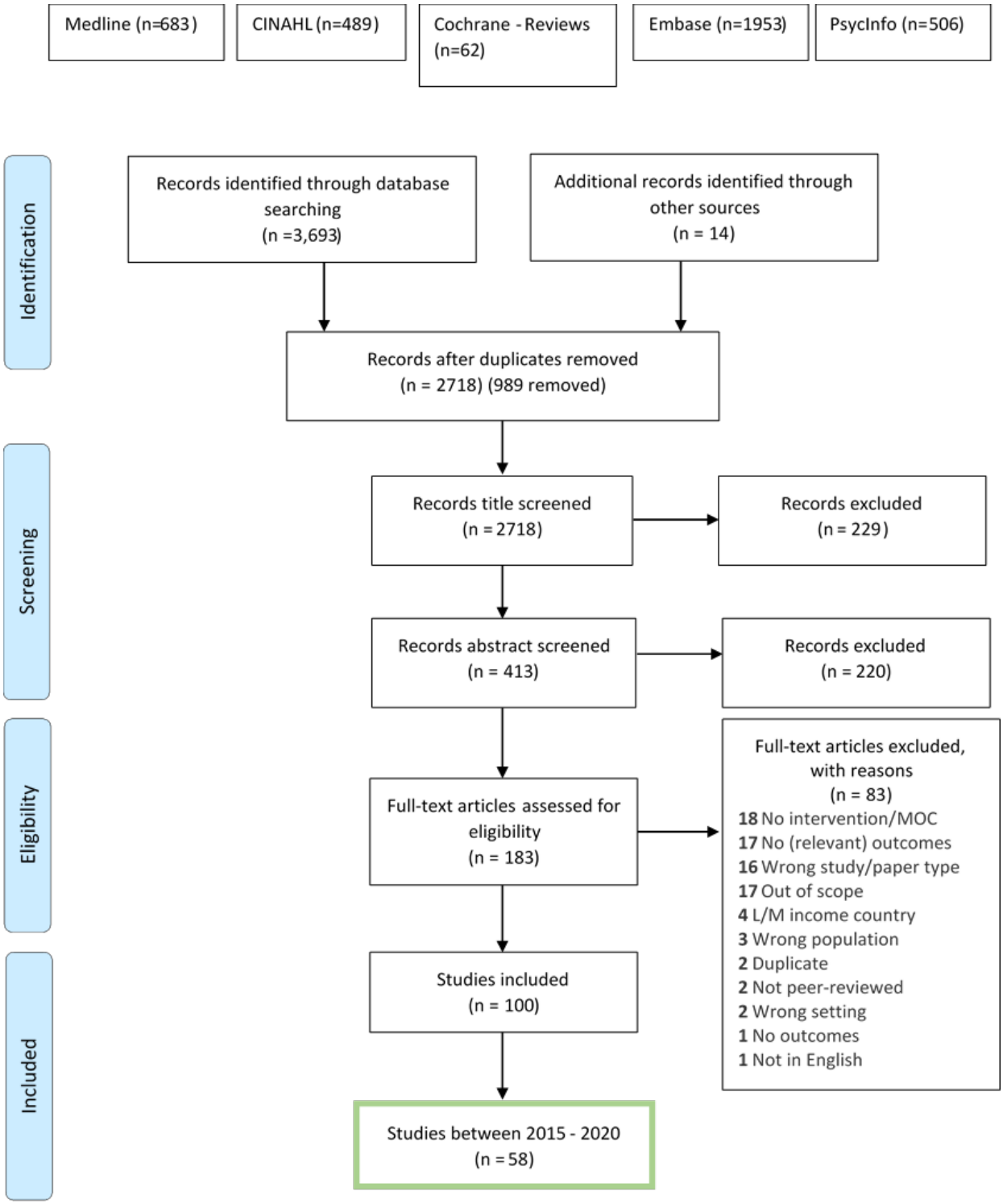
Appendices

Appendix 1—Medline search strategy

Table A1.1—Medline search strategy

Search ID#	Search terms	Search notes	Results
1	exp Mental Disorders/		1,239,842
2	mentally ill persons/		6158
3	exp "schizophrenia spectrum and other psychotic disorders"/		147,637
4	Mental Health/		38,438
5	(Mental disturbance or "Acute situational crisis" or "Psychiatric Crisis" or "Acute Psychiatric relapse" or Mental illness* or Mental distress or Mental disturbance* or Mental disorder* or Mentally ill or Psychotic or Psychosis or Psychoses or Schizophrenia or Schizoaffective disorder* or Delusional disorder* or bipolar or personality disorder*).mp.		474,623
6	1 or 2 or 3 or 4 or 5		1,357,990
7	exp aggression/ or self-injurious behavior/ or suicidal ideation/ or suicide, attempted/ or dangerous behavio?r.mp.		71,094
8	(Severe behavio?r or Behavio?ral disturbance or Agressi* or aggressi* or Verbal Abuse or Acute arousal or Disturbed or Disruptive or Agitati* or Conflict or Property damage or Violen* or Abscond* or "Absent without Leave" or Self-harm or Suicidality or Assault or "Exploitation of others" or Antisocial or anti-social or Extreme distress or "Risk of harm" or Safety management or risk management or sexual or gender sensitivity).mp. dentifier, synonyms]		729,868
9	7 or 8		755,537
10	Hospitals, Psychiatric/		25,211
11	("Mental health Inpatient ward" or "mental health inpatient unit" or Psychiatric ward or psychiatric unit or "Mental health intensive care" or "Psychiatric intensive care" or "high dependency unit" or "psychiatric crisis unit" or "Forensic mental health hospital" or "Mental Health Short stay" or "Early intervention for psychosis").mp. dentifier, synonyms]		4163
12	10 or 11		28,972
13	6 and 9 and 12		2719
14	limit 13 to (english language and yr="2010 -Current")	Limit to English and PY 10-current)	683

Appendix 2—PRISMA flow chart



Appendix 3—Data extraction tables

Table A3.1—Titles and abstracts of reviewed papers

Author/Date	Title	Abstract
Adri 2021	The Mania Pathway Protocol: An Application of Evidence-Based Interventions for the Treatment of Acute Mania on an Inpatient Psychiatric Unit	INTRODUCTION: Acute manic episodes are a psychiatric emergency related to violence and poor patient outcomes. Combination psychotropic therapy utilizing a mood stabilizer and an atypical antipsychotic has been shown to be more efficacious for treating acute mania compared to monotherapy with either mood stabilizers or antipsychotics alone. This quality improvement project implemented evidence-based interventions for treating acute mania. The mania pathway protocol was created as a comprehensive clinical guide for guiding mania treatment. The protocol was implemented on an inpatient psychiatric unit for patients with mania diagnoses including manic/mixed episodes of bipolar disorder or schizoaffective disorder. AIMS: (1) to improve the treatment of mania by using evidence-based interventions for rapid mood stabilization and (2) to educate psychiatric providers on up-to-date interventions for treating acute manic states. METHOD(S): Psychiatric providers were evaluated for knowledge enhancement through a pre-/post-educational session quiz. A retrospective chart review was used for data collection for patients treated with the mania pathway protocol. The retrospective chart review spanned 8 weeks post project implementation. Young Mania Rating Scale (YMRS) scores were analyzed to measure the effect on mania severity. RESULT(S): The percentage decrease in mean Young Mania Rating Scale scores from admission to the fifth day of hospitalization was 61%. All psychiatric providers proved knowledge attainment by scoring 100% on the postintervention quiz. CONCLUSION(S): Rapid mood stabilization may be achieved by using a combination therapy-based mania protocol. Educational sessions can enhance psychiatric provider knowledge with regard to evidence-based treatments for mania.
Andersen et al. 2017	Applying sensory modulation to mental health inpatient care to reduce seclusion and restraint: a case control study	BACKGROUND: Clinical training in managing conflicts and preventing violence seldom contains sensory modulation (SM) as a method to de-escalate and prevent restraint and seclusion. Sensory-based interventions promote adaptive regulation of arousal and emotion. SM is a complementary approach that is associated with reduced rates of seclusion and restraint in mental health care, but there is need for more research in this area. AIMS: Using SM to reduce restraint and seclusion in inpatient mental health care. METHODS: The study included two similar psychiatric units where one unit implemented SM and one unit served as the control group. In the very beginning of the study, a staff-training program in the use of SM including assessment tools and intervention strategies was established. Data on restraint and forced

Author/Date	Title	Abstract
		medicine were sampled post the course of the year of implementation and compared with the control group. RESULTS: The use of belts decreased with 38% compared to the control group. The use of forced medication decreased with 46% compared to the control group. Altogether the use of physical restraint and forced medication decreased significantly with 42% ($p < .05$). CONCLUSIONS: Implementing a SM approach in mental healthcare facilities has a significant effect on the reduction of restraint and seclusion. As a part of the implementation, staff training and education in SM are crucial.
Aremu et al. 2018	Implementation of Trauma-Informed Care and Brief Solution-Focused Therapy: A Quality Improvement Project Aimed at Increasing Engagement on an Inpatient Psychiatric Unit	Addressing tense and escalating situations with noncoercive measures is an important element of inpatient psychiatric treatment. Although restraint rates are frequently monitored, the use of pro re nata (PRN) intramuscular (IM) injections to address agitation is also an important indicator. In 2015, at the current study site, a significant increase was noted in PRN IM medication use despite unit leadership's efforts to build a culture of trauma-informed care (TIC). The purpose of the current quality improvement project was to educate staff on methods to incorporate TIC into daily practice and the use of brief solution-focused therapy techniques in escalating situations. Measurement of attitudes toward patient aggression and engagement with patients followed two waves of staff education. Upon completion of the project, a decrease in PRN IM medications, improvement in staff attitudes toward patient aggression, and improved sense of staff competency in handling tense situations were noted.
Bader et al. 2015	Implementing an ecological approach to violence reduction at a forensic psychiatric hospital: Approaches and lessons learned	Existing literature on aggression within psychiatric hospitals suggests that treating an aggressive patient's symptoms could be complemented by (a) milieu environments that mitigate violence and (b) hospital-wide policies and procedures that focus on creating a safe environment. Described as an ecological approach, examples of how this broader, situational approach can reduce inpatient violence in psychiatric settings are provided throughout. The authors identify potential barriers to focusing on wards and institutional rules as well as patient treatment. Finally, details of how this ecological approach has been implemented at one state hospital in California are provided.
Baumgardt et al. 2019	Preventing and Reducing Coercive Measures—An Evaluation of the Implementation of the Safewards Model in Two Locked Wards in Germany	Introduction: Aggression and violence are highly complex problems in acute psychiatry that often lead to the coercive interventions. The Safewards Model is an evidence-informed conflict reduction strategy to prevent and reduce such incidents. The aim of this study was to evaluate the implementation of this model with regard to coercive interventions in inpatient care. Materials and Methods: We evaluated outcomes of the implementation of the Safewards Model in two locked psychiatric wards in Germany. Frequency and duration of coercive interventions applied during a period of 10 weeks before and 10 weeks after the implementation period were assessed through routine data. Fidelity to the Safewards Model was assessed by the Organization Fidelity Checklist. Results: Fidelity to the Safewards Model

Author/Date	Title	Abstract
		was high in both wards. The overall use of coercive measures differed significantly between wards [case-wise: χ2 patient-wise: χ2 (1, n = 250) = 35.34, p ≤ 0.001; (1, n = 103) = 21.45, p ≤ 0.001] and decreased post-implementation. In one ward, the number of patients exposed to coercive interventions in relation to the overall number of admissions decreased significantly [χ2 (1, 182) = 9.30, p = 0.003]. Furthermore, the mean duration of coercive interventions overall declined significantly [U(55,21) = −2.142, p = 0.032] with an effect size of Cohen's d = −0.282 (95% CI: −0.787, 0.222) in that ward. Both aspects declined as well in the other ward, but not significantly. Discussion: Results indicate that the implementation of the Safewards interventions according to the model in acute psychiatric care can reduce coercive measures. They also show the role of enabling factors as well as of obstacles for the implementation process.
Bensimon et al. 2018	Patient-centered Approach in Closed Psychiatric Wards: The Curative Power of Relaxing Music Chosen by Patients	BACKGROUND: Psychiatry is changing as medicine adopts a patient-centered approach. This model of care places greater emphasis on the patients' involvement in determining the goals of their treatment and the nature of their care. This study offers a non-verbal patient-centered intervention by using relaxing music chosen by patients in a closed psychiatric ward to achieve reduction in levels of stress and psychomotor agitation. METHOD: Participants, patients in closed wards, entered a seclusion room whenever they showed psychomotor agitation, overwhelming stress or physical and verbal aggression. While in the seclusion room, participants in the research group (n=24) were exposed to relaxing music of their choice whereas the comparative group (n=28) did not receive any sensory stimulation. The participants filled out the Visual Analogue Scale to measure their emotional state before and after this experience while the staff filled out the Behavioral Activity Rating Scale. RESULTS: Results show significantly higher emotional calm and prominent reduction in psychomotor agitation among the research group in comparison with the comparative group. CONCLUSIONS: Relaxing music chosen by patients has a positive effect on their emotional state and behavioral activity and may therefore serve as an alternative sensory intervention before patients reach violent situations that require restraint.
Berring et al. 2016	A Co-operative Inquiry Into Generating, Describing, and Transforming Knowledge About De-escalation Practices in Mental Health Settings	De-escalation is concerned with managing violent behaviour without resorting to coercive measures. Co-operative Inquiry provided the conceptual basis for generating knowledge regarding de-escalation practices in acute mental health care settings. The research included service users and staff members as co-researchers and knowledge was generated in dynamic research cycles around an extended epistemology of knowing: experiential, presentational, propositional, and practical. Through this process, co-researchers became de-escalation learners, implementing de-escalation practices while transforming violence management.

Author/Date	Title	Abstract
		Neighbouring mental health communities' involvement strengthened the transformation process and assisted in validating the research results.
Bjorkdahl et al. 2016	Sensory rooms in psychiatric inpatient care: Staff experiences	There is an increased interest in exploring the use of sensory rooms in psychiatric inpatient care. Sensory rooms can provide stimulation via sight, smell, hearing, touch and taste in a demand-free environment that is controlled by the patient. The rooms may reduce patients' distress and agitation, as well as rates of seclusion and restraint. Successful implementation of sensory rooms is influenced by the attitudes and approach of staff. This paper presents a study of the experiences of 126 staff members who worked with sensory rooms in a Swedish inpatient psychiatry setting. A cross-sectional descriptive survey design was used. Data were collected by a web based self-report 12-item questionnaire that included both open- and closed-ended questions. Our findings strengthen the results of previous research in this area in many ways. Content analyses revealed three main categories: hopes and concerns, focusing on patients' self-care, and the room as a sanctuary. Although staff initially described both negative and positive expectations of sensory rooms, after working with the rooms, there was a strong emphasis on more positive experiences, such as letting go of control and observing an increase in patients' self-confidence, emotional self-care and well-being. Our findings support the important principals of person-centred nursing and recovery-oriented mental health and the ability of staff to implement these principles by working with sensory rooms.
Blair et al. 2017	Reduction of Seclusion and Restraint in an Inpatient Psychiatric Setting: A Pilot Study	The authors describe a quality and safety initiative designed to decrease seclusion/restraint (S/R) and present the results of a pilot study that evaluated the effectiveness of this program. The study sample consisted of consecutive admissions to a 120-bed psychiatric service after the intervention was implemented (October 2010 – September 2012, n = 8029). Analyses compared S/R incidence and duration in the study sample to baseline (consecutive admissions during the year prior to introduction of the intervention, October 2008 – September 2009, n = 3884). The study intervention, which used evidence-based therapeutic practices for reducing violence/aggression, included routine use of the Broset Violence Checklist, mandated staff education in crisis intervention and trauma informed care, increased frequency of physician reassessment of need for S/R, formal administrative review of S/R events and environmental enhancements (e.g. comfort rooms to support sensory modulation). Statistically significant associations were found between the intervention and a decrease in both the number of seclusions ($p < 0.01$) and the duration of seclusion per admission ($p < 0.001$). These preliminary results support the conclusion that this intervention was effective in reducing use of seclusion. Further study is needed to determine if these prevention strategies are generalizable, the degree to which each component of the intervention contributes to improve outcome, and if continuation of the intervention will further reduce restraint use.

Author/Date	Title	Abstract
Bowers et al. 2015	Reducing conflict and containment rates on acute psychiatric wards: The Safewards cluster randomised controlled trial	[Correction Notice: An Erratum for this article was reported in Vol 58 of International Journal of Nursing Studies (see record 2016-20077-015). In the original article, there were several errors: (1) in the reduction in the rate of conflict in the abstract and Section 2.1; (2) in Tables 1 and 2; and (3) in Section 2.3. The corrections are present in the erratum.] Background: Acute psychiatric wards manage patients whose actions may threaten safety (conflict). Staff act to avert or minimise harm (containment). The Safewards model enabled the identification of ten interventions to reduce the frequency of both. Objective: To test the efficacy of these interventions. Design: A pragmatic cluster randomised controlled trial with psychiatric hospitals and wards as the units of randomisation. The main outcomes were rates of conflict and containment. Participants: Staff and patients in 31 randomly chosen wards at 15 randomly chosen hospitals. Results: For shifts with conflict or containment incidents, the experimental condition reduced the rate of conflict events by 15% (95% CI 5.6-23.7%) relative to the control intervention. The rate of containment events for the experimental intervention was reduced by 26.4% (95% CI 9.9-34.3%). Conclusions: Simple interventions aiming to improve staff relationships with patients can reduce the frequency of conflict and containment. (PsycINFO Database Record (c) 2017 APA, all rights reserved)
Brophy et al. 2020	Designing mental health facilities that prevent the use of seclusion and restraint: an Evidence Check rapid review brokered by the Sax Institute (www.saxinstitute.org.au) for the NSW Ministry of Health	Summary (no abstract available) This review aimed to address the following questions: Question 1: What physical design features of mental health facilities reduce the use of seclusion and restraint in these facilities? Question 2: Of the design features identified in Question 1, are any specific elements essential, or unsuitable, for particular patient subgroups? Key findings: This Evidence Check identified 38 publications relating to the research questions. Using the JBI critical assessment tools, we found most of the studies scored low or unclear on more than one item. The trustworthiness of this body of evidence is, therefore, unclear and should be interpreted cautiously. Question 1: The findings suggest physical design that aims to reduce the use of seclusion and restraint depends on a foundation of good design principles being in place. These include privacy, adequate space, no overcrowding, exposure to daylight and other appropriate lighting, use of colour, reduced levels of unpleasant noise, access to gardens, art that features nature, a homelike environment, and easy wayfinding and opportunities for consumer agency. These amenity features promote both consumer and staff safety, and reduce distress and environmental triggers for conflict52, which are central to the prevention of seclusion and restraint. Question 2: Few of the included studies discussed the physical environment in relation to specific subgroups of consumers. For young people, results indicated choice and control were

Author/Date	Title	Abstract
		important concepts to consider in designing facilities (e.g. coloured lights, light dimmers, music panels). For older people, noise reduction and attention to wayfinding was noted as particularly important. It was suggested noise reduction at night was valuable in forensic facilities because of its potential to improve sleep in what may be a sleep-deprived population. Gaps in the evidence: This Evidence Check identified multiple gaps in the evidence, including about the optimal scale of wards, personal access to belongings, balancing open spaces with visibility, privacy, monitoring, designs to support physical exercise and activity, access to own food preparation and storage, access to technology, whole-of-ward sensory design, Alzheimer's disease/other dementia, inclusion and diverse needs, design support for safety/gender separation, older people's mental health, child and adolescent mental health, extra care units, and intensive care units. For example, there is minimal understanding of the implications of changes in ward scale and the impact of increased privacy and consumers spending more time in their own rooms. Similarly, it is unclear what the role is of access, or lack of access, to personal property. There are aspects of the sensory environment that appear to be lacking in research—for example, temperature and air quality. The needs of women and subgroups such as people with dementia as well as Aboriginal people and members of the LGBTQI+ community appear to be under-investigated.
Dardashti et al. 2015	Illustrative cases to support the Cal-VAT guidelines	There is increasing interest in developing more nuanced methods for managing aggression and violence in long-term psychiatric inpatient settings. However, the dearth of controlled studies has, at times, hampered presentation of viable options. Following the publication of guidelines developed in the California State Hospital forensic system, the authors present a group of 7 cases illustrating different approaches to violence management, including pharmacological, psychotherapeutic, and environmental interventions.
Dickens et al. 2020	Safewards: Changes in conflict, containment, and violence prevention climate during implementation	ABSTRACT: Since its development, there has been growing utilization of the Safewards package of interventions to reduce conflict and containment in acute mental health wards. The current study used the opportunity of an implementation of Safewards across one large metropolitan local health district in New South Wales, Australia, to evaluate change. Specific aims of the study were to measure, for the first time in Australia, changes in shift-level reports of conflict and containment associated with Safewards introduction, and to measure any association with change in the violence prevention climate using a tool validated for use in the current study setting. Eight of eleven wards opted-in to participating in Safewards. Implementation was conducted over a period of 24 weeks (4-week preparation, 16-week implementation, and 4-week outcome phases). Conflict and containment were measured using the Patient–Staff Conflict Checklist Shift Report and violence prevention climate using the VPC-14. From 63.2%

Author/Date	Title	Abstract
		response rate, the mean (SD) reported conflict and containment incidents per shift fell from 3.96 (6.25) and 6.81 (5.78) to 2.94 (4.22) and 5.82 (4.62), respectively. Controlling for other variables, this represented reductions of 23.0 and 12.0%, respectively. Violence prevention climate ratings did not change. Safewards was associated with significant improvements in all incidents of conflict and containment, including the most severe and restrictive types, and this was largely unaffected by outcomes measure response rate, shift or weekday/weekend reporting, or number of ward beds. Safewards is increasingly justified as one of very few interventions of choice in adult, acute mental health services and should be widely utilized.
Digby et al. 2020	Implementing a Psychiatric Behaviours of Concern emergency team in an acute inpatient psychiatry unit: Staff perspectives	Behaviours of concern including aggression are widespread in mental health inpatient settings. Restrictive interventions such as restraint and seclusion can cause additional trauma to already traumatized patients. To decrease use of these interventions in an acute psychiatric unit in Melbourne, Australia, a Psychiatric Behaviours of Concern (Psy-BOC) response team was introduced. In a Psy-BOC call, senior medical, nursing and allied health staff respond to escalating behavioural situations to work with the primary treating team to implement clinical interventions of least restrictive practice. Here, we present qualitative findings reporting staff response to Psy-BOC. The study complied with the Consolidated Criteria for Reporting Qualitative Research (COREQ). Twenty-four staff participated in five focus groups. Four themes were identified: Identifying behavioural deterioration, responding to behaviours of concern, staff reactions, and barriers. Although staff were skilled in recognizing and de-escalating behaviours of concern, patients were secluded when heightened risk was perceived. The adoption of Psy-BOC was met with some resistance to the cultural change required to adopt this new model. Increased awareness, early identification of behaviours of concern, and pressure from management resulted in reductions in restrictive interventions. Management of patients with drug-induced psychosis without restraint presented specific difficulties. The ward setting was challenging, offering no break-out spaces for patients, and few comfortable areas. Some staff appreciated the advice and expertise of the Psy-Boc team, others felt disempowered and undermined. Improving leadership, staff education, support and collaboration, and including frontline staff in refining the process could enhance the Psy-BOC response and increase safety for all.
Douglas-Hall et al. 2015	'As required' medication regimens for seriously mentally ill people in hospital (review)	Background: Drugs used to treat psychotic illnesses may take weeks to be effective. In the interim, additional 'as required' doses of medication can be used to calm patients in psychiatric wards. The practice is widespread, with 20% to 50% of people on acute psychiatric wards receiving at least one 'as required' dose of psychotropic medication during their admission. Objectives: To compare the effects of 'as required' medication regimens with regular patterns of medication for the treatment of psychotic symptoms or behavioural disturbance, thought to

Author/Date	Title	Abstract
		be secondary to psychotic illness. These regimens may be given alone or in addition to any regular psychotropic medication for the long-term treatment of schizophrenia or schizophrenia-like illnesses. Search methods: We searched the Cochrane Schizophrenia Group's Trials Register, which is based on regular searches of MEDLINE, EMBASE, PubMed, CINAHL, BIOSIS, AMED, PsycINFO and registries of clinical trials, in November 2001, March 2006, July 2012 and October 2013. Selection criteria: We aimed to include all relevant randomised controlled trials involving hospital inpatients with schizophrenia or schizophrenia-like illnesses, comparing any regimen of medication administered for the short-term relief of behavioural disturbance, or psychotic symptoms, to be given at the discretion of ward staff ('as required', 'prn') with fixed non-discretionary patterns of drug administration of the same drug(s). This was in addition to regular psychotropic medication for the long-term treatment of schizophrenia or schizophrenia-like illnesses where prescribed. Data collection and analysis: We independently inspected abstracts and papers for inclusion. If trials had been found, we would have extracted data from the papers and quality assessed the data. For dichotomous data we would have calculated the risk ratios (RR), with the 95% confidence intervals (CI). We would have conducted analyses on an intention-to-treat basis. If data were available we would have completed a 'Summary of findings' table using GRADE. Main results: We have not been able to identify any randomised trials comparing 'as required' medication regimens to regular regimens of the same drug. Our main outcomes of interest were important changes in (i) mental state, (ii) behaviour, (iii) dose of medication used, (iv) adverse events, (v) satisfaction with care and (iv) cost of care. Authors' conclusions: There is currently no evidence from within randomised trials to support this common practice. Current practice is based on clinical experience and habit rather than high quality evidence.
Du et al. 2017	De-escalation techniques for psychosis induced aggression or agitation	Background: Aggression is a disposition, a willingness to inflict harm, regardless of whether this is behaviourally or verbally expressed and regardless of whether physical harm is sustained. De-escalation is a psychosocial intervention for managing people with disturbed or aggressive behaviour. Secondary management strategies such as rapid tranquillisation, physical intervention and seclusion should only be considered once de-escalation and other strategies have failed to calm the service user. Objectives: To investigate the effects of de-escalation techniques in the short-term management of aggression or agitation thought or likely to be due to psychosis. Search methods: We searched Cochrane Schizophrenia Group's Study-Based Register of Trials (latest search 7 April, 2016). Selection criteria: Randomised controlled trials using de-escalation techniques for the short-term management of aggressive or agitated behaviour. We planned to include trials involving adults (at least 18 years) with a potential for aggressive behaviour due to psychosis, from those in a psychiatric setting to those possibly

Author/Date	Title	Abstract
		under the influence of alcohol or drugs and/or as part of an acute setting as well. We planned to include trials meeting our inclusion criteria that provided useful data. Data collection and analysis We used the standard methodological procedures expected by Cochrane. Two review authors inspected all abstracts of studies identified by the search process. As we were unable to include any studies, we could not perform data extraction and analysis. Main results: Of the 345 citations that were identified using the search strategies, we found only one reference to be potentially suitable for further inspection. However, after viewing the full text, it was excluded as it was not a randomised controlled trial. Authors' conclusions: Using de-escalation techniques for people with psychosis induced aggression or agitation appears to be accepted as good clinical practice but is not supported by evidence from randomised trials. It is unclear why it has remained such an under-researched area. Conducting trials in this area could be influenced by funding flow, ethical concerns—justified or not—anticipated pace of recruitment as well the difficulty in accurately quantifying the effects of de-escalation itself. With supportive funders and ethics committees, imaginative trialists, clinicians and service-user groups and wide collaboration this dearth of randomised research could be addressed. Plain language summary: De-escalation techniques for psychosis-induced aggression or agitation. Review question: Are de-escalation techniques effective for managing psychosis-induced aggression or agitation? Background: Aggression is a willingness to inflict harm, regardless of whether this is behaviourally or verbally expressed and regardless of whether physical harm is sustained. De-escalation is a psychosocial intervention for management of aggressive or agitated behaviour. It uses techniques that help someone with aggression or agitation to self-monitor their emotions and self-manage their behaviour to try and stop aggressive behaviour escalating. Searches: We ran electronic searches (last searched April 2016) for trials that randomised people with psychosis who were displaying aggressive or agitated behaviour to receive de-escalation techniques, standard care or other intervention to manage aggression. Three-hundred and forty-five records were found and checked by the review authors. Results: No trials met the review requirements. There is no trial-based evidence currently available assessing the effectiveness of de-escalation techniques for managing aggression or agitation. Conclusions: It is unclear why there are no randomised trials. Several issues such as cost, ethical considerations, difficulty recruiting people into trials, as well the ability to accurately quantify the effects of de-escalation itself could all be contributing factors. Meanwhile, de-escalation techniques are currently used without any trial-based evidence that they are effective.
Duxbury et al. 2019	Minimising the use of physical restraint in acute mental health services: The outcome	Background: Physical restraint is a coercive intervention used to prevent individuals from harming themselves or others. However, serious adverse effects have been reported. Minimising the use of restraint requires a multimodal approach to target both organisational

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	of a restraint reduction programme ('REsTRAIN YOURSELF')	and individual factors. The 'Six Core Strategies' developed in America, underpinned by prevention and trauma informed principles, is one such approach. Objective: An adapted version of the Six Core Strategies was developed and its impact upon physical restraint usage in mental health Trusts in the United Kingdom evaluated. This became known as 'REsTRAIN YOURSELF. The hypothesis was that restraint would be reduced by 40% on the implementation wards over a six-month period. Design: A non-randomised controlled trial design was employed. Setting: Fourteen, adult, mental health wards from seven mental health hospitals in the North West of England took part in the study. Two acute care wards were targeted from all eligible acute wards within each site in negotiation with each Trust. The intervention wards (total n = 144 beds, mean = 20.1 beds per ward) and control wards (total n = 147 beds, mean = 21.0 beds per ward) were primarily mixed gender but included single sex wards also (2 female-only and 1 male-only in each group). All wards offered pharmacological and psychosocial interventions over short admission durations (circa 15 days) for patients with a mixture of enduring mental health problems. Method: As part of a pre and post-test method, physical restraint figures were collected using prospective, routine hospital records before and 6 months after the intervention. Restraint rates on seven wards receiving the REsTRAIN YOURSELF intervention were compared with those on seven control wards over three study phases (baseline, implementation and adoption). Results: In total, 1680 restraint incidents were logged over the study period. The restraint rate was significantly lower on the intervention wards in the adoption phase (6.62 events/1000 bed-days, 95% CI 5.53–7.72) compared to the baseline phase (9.38, 95% CI 8.19–10.55). Across all implementation wards there was an average reduction of restraint by 22%, with some wards showing a reduction of 60% and others less so (8%). The association between ward type and study phase was statistically significant. Conclusion: In conclusion, it is possible that reductions in the use of physical restraint are achievable using a model such as the Six Core Strategies. This approach can be adapted for global settings and changes can be sustained over time with continued support.
Duxbury et al. 2019	Staff experiences and understandings of the REsTRAIN Yourself initiative to minimize the use of physical restraint on mental health wards	ABSTRACT: International efforts to minimize coercive practices include the US Six Core Strategies© (6CS). This innovative approach has limited evidence of its effectiveness, with few robustly designed studies, and has not been formally implemented or evaluated in the UK. An adapted version of the 6CS, which we called 'REsTRAIN Yourself' (RY), was devised to suit the UK context and evaluated using mixed methods. RY aimed to reduce the use of physical restraint in mental health inpatient ward settings through training and practice development with whole teams, directly in the ward settings where change was to be implemented and barriers to change overcome. In this paper, we present qualitative findings that report on staff perspectives of the impact and value of RY following its implementation. Thirty-six staff

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		participated in semi-structured interviews with data subject to thematic analysis. Eight themes are reported that highlight perceived improvements in every domain of the 6CS after RY had been introduced. Staff reported more positively on their relationships with service users and felt their attitudes towards the use of coercive practices such as restraint were changed; the service as a whole shifted in terms of restraint awareness and reduction; and new policies, procedures, and language were introduced despite certain barriers. These findings need to be appreciated in a context wherein substantial reductions in the use of physical restraint were proven possible, largely due to building upon empathic and relational alternatives. However, yet more could be achieved with greater resourcing of inpatient care.
Fletcher et al. 2017	Outcomes of the Victorian Safewards Trial in 18 wards: Impact on seclusion rates and fidelity measurement	Restrictive practices are used in response to conflict and aggression in psychiatric inpatient settings. Reducing such practices is the focus internationally of policy and legislative change, many initiatives, and a growing body of research. Safewards is a model and a set of 10 interventions designed to reduce conflict and containment in inpatient services. In the current study, we aimed to assess the impact of implementing Safewards on seclusion in Victorian inpatient mental health services in Australia. The study used a before-and-after design, with a comparison group matched for service type. Thirteen wards opted into a 12-week trial to implement Safewards and 1-year follow up. The comparison group was all other wards (n = 31) with seclusion facilities in the jurisdiction, matched to service type. Mandatorily-reported seclusion event data for all 44 wards over a 15-month period were analysed using negative binomial regression. Adherence to Safewards was measured via fidelity checklists at four time points: twice during the trial, post-trial, and at 1-year follow up. Seclusion rates were reduced by 36% in Safewards trial wards by the 12-month follow-up period (incidence rate ratios (IRR) = 0.64,) but in the comparison wards seclusion rates did not differ from baseline to post-trial (IRR = 1.17) or to follow-up period (IRR = 1.35). Fidelity analysis revealed a trajectory of increased use of Safewards interventions after the trial phase to follow up. The findings suggest that Safewards is appropriate for practice change in Victorian inpatient mental health services more broadly than adult acute wards, and is effective in reducing the use of seclusion.
Fletcher et al. 2019	Safewards impact in inpatient mental health units in Victoria, Australia: Staff perspectives	Introduction: Mental health professionals working in acute inpatient mental health wards are involved in a complex interplay between an espoused commitment by government and organizational policy to be recovery-oriented and a persistent culture of risk management and tolerance of restrictive practices. This tension is overlain on their own professional drive to deliver person-centered care and the challenging environment of inpatient wards. Safewards is designed to reduce conflict and containment through the implementation of 10 interventions that serve to improve the relationship between staff and consumers. The aim of the current study was to understand the impact of Safewards from the perspectives of the staff. Methods:

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		One hundred and three staff from 14 inpatient mental health wards completed a survey 12 months after the implementation of Safewards. Staff represented four service settings: adolescent, adult, and aged acute and secure extended care units. Results: Quantitative results from the survey indicate that staff believed there to be a reduction in physical and verbal aggression since the introduction of Safewards. Staff were more positive about being part of the ward and felt safer and more connected with consumers. Qualitative data highlight four key themes regarding the model and interventions: structured and relevant; conflict prevention and reducing restrictive practices; ward culture change; and promotes recovery principles. Discussion: This study found that from the perspective of staff, Safewards contributes to a reduction in conflict events and is an acceptable practice change intervention. Staff perspectives concur with those of consumers regarding an equalizing of staff-consumer relationships and the promotion of more recovery-oriented care in acute inpatient mental health services.
Fletcher et al. 2019	Consumer perspectives of Safewards impact in acute inpatient mental health wards in Victoria, Australia	Background: Inpatient mental health wards are reported by many consumers to be custodial, unsafe, and lacking in therapeutic relationships. These consumer experiences are concerning, given international policy directives requiring recovery-oriented practice. Safewards is both a model and a suite of interventions designed to improve safety for consumers and staff. Positive results in reducing seclusion have been reported. However, the voice of consumers has been absent from the literature regarding Safewards in practice. Aim: To describe the impact of Safewards on consumer experiences of inpatient mental health services. Method: A postintervention survey was conducted with 72 consumers in 10 inpatient mental health wards 9–12 months after Safewards was implemented. Results: Quantitative data showed that participants felt more positive about their experience of an inpatient unit, safer, and more connected with nursing staff. Participants reported that the impact of verbal and physical aggression had reduced because of Safewards. Qualitatively, participants reported increased respect, hope, sense of community, and safety and reduced feelings of isolation. Some participants raised concerns about the language and intention of some interventions being condescending. Discussion: Consumers' responses to Safewards were positive, highlighting numerous improvements of importance to consumers since its implementation across a range of ward types. The findings suggest that Safewards offers a pathway to reducing restrictive interventions and enables a move toward recovery-oriented practice.
Forsyth et al. 2018	Sensory strategies in adult mental health: A qualitative exploration of staff perspectives following the introduction of a sensory room on a male adult acute ward	In recent years, there has been growing interest in the use of sensory techniques to help with emotional regulation in adult mental health populations. This is against a backdrop of international policies aimed at reducing restrictive interventions and improving the effectiveness of de-escalation techniques. A sensory room was designed and implemented on a

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		male adult acute psychiatric ward. Staff perspectives were sought to evaluate the effectiveness of the room in managing emotional distress by exploring staff awareness of a broader range of de-escalation strategies and by exploring what effect the room had on staff behaviours with respect to sensory interventions. A series of semi-structured interviews were carried out, analysed, and grouped into themes. Three themes emerged as follows: enhancing de-escalation, sensory interventions, and impact on staff. Findings showed that increased awareness of sensory processing and use of sensory strategies such as the sensory room were perceived by staff to have a positive impact on reducing distress with male service users. Staff use of the room was also discovered to have benefits that included staff attending to their own emotional needs and the use of the room supporting reflective learning during critical incident debriefing.
Goulet et al. 2018	A pilot study of "post-seclusion and/or restraint review" intervention with patients and staff in a mental health setting	Purpose: To develop and evaluate a "post-seclusion and/or restraint review" (PSRR) intervention implemented in an acute psychiatric care unit. Design and Methods: Twelve staff members and three patients were enrolled in a participatory case study. To evaluate PSRR intervention, qualitative analysis was carried out. Seclusion and restraint use 6 months before and after the PSRR implementation was compared. Findings: Nurses reported that they were able to explore the patient's feelings during the PSRR intervention with patients, which led to restoration of the therapeutic relationship. PSRR with the treatment team was perceived as a learning opportunity, which allowed the therapeutic intervention to improve. Both the use of seclusion and the time spent in seclusion were significantly reduced 6 months after the implementation of PSRR intervention. Practice Implication: Our results suggest the efficacy of PSRR in overcoming the discomfort perceived by both staff and patient and, in the meantime, in reducing the need for coercive procedures. Systematic PSRR could permit to improve the quality of care and the safety of aggressiveness management.
Haddock et al. 2019	Feasibility and acceptability of suicide prevention therapy on acute psychiatric wards: Randomised controlled trial	Background: Suicidal behaviour is common in acute psychiatric wards resulting in distress, and burden for patients, carers and society. Although psychological therapies for suicidal behaviour are effective in out-patient settings, there is little research on their effectiveness for in-patients who are suicidal. Aims: Our primary objective was to determine whether cognitive-behavioural suicide prevention therapy (CBSP) was feasible and acceptable, compared with treatment as usual (TAU) for in-patients who are suicidal. Secondary aims were to assess the impact of CBSP on suicidal thinking, behaviours, functioning, quality of life, service use, cost-effectiveness and psychological factors associated with suicide. Method: A single-blind pilot randomised controlled trial comparing TAU to TAU plus CBSP in in-patients in acute psychiatric wards who are suicidal (the Inpatient Suicide Intervention and Therapy Evaluation (INSITE) trial, trial registration: ISRCTN17890126). The intervention consisted of TAU plus up to 20 CBSP sessions,

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		over 6 months continuing in the community following discharge. Participants were assessed at baseline and at 6 weeks and 6 months post-baseline. Results: A total of 51 individuals were randomised (27 to TAU, 24 to TAU plus CBSP) of whom 37 were followed up at 6 months (19 in TAU, 18 in TAU plus CBSP). Engagement, attendance, safety and user feedback indicated that the addition of CBSP to TAU for in-patients who are acutely suicidal was feasible and acceptable while on in-patient wards and following discharge. Economic analysis suggests the intervention could be cost-effective. Discussion: Psychological therapy can be delivered safely to patients who are suicidal although modifications are required for this setting. Findings indicate a larger, definitive trial should be conducted. Declaration of interest: The trial was hosted by Greater Manchester Mental health NHS Trust (formerly, Manchester Mental Health and Social Care NHS Trust). The authors are affiliated to the University of Manchester, Greater Manchester Mental Health Foundation Trust, Lancashire Care NHS Foundation trust and the Manchester Academic Health Sciences Centre. Y.A. is a trustee for a North-West England branch of the charity Mind.
Hall et al. 2019	Sound practice: Exploring the benefits of establishing a music group on an acute mental health inpatient unit	There is evidence supporting the use of formal music therapy in the treatment of mental health consumers. Despite this, it appears to be an intervention which has not been routinely offered to consumers in Australian acute mental health inpatient units, possibly due to the lack of trained music therapists (or inadequate funding to employ them), as well as the challenges posed by the acuity of presentations and the short duration of admissions. Less formal therapeutic music activities may benefit consumers within these settings. This article describes how a music group activity facilitated by clinical staff with no music therapy qualifications was established. The first phase of this evaluation is then described using a descriptive qualitative method. We undertook a series of consumer and staff focus groups to explore the impact of a music group activity on an acute mental health inpatient unit. Five themes emerged from the transcripts of the focus groups' discussions: effects on mood, relationships and engagement, social connectedness and inclusion, the ward atmosphere and noise/agitation. Positive effects were shown across these areas, suggesting that the music group activity we established was beneficial for consumers and staff, and enhanced the ward atmosphere.
Hayes et al. 2015	Description and evaluation of a novel service for "difficult to manage" psychiatric in-patients	Purpose: A new service was developed to provide transitional care between acute and secure services for people with serious mental illness who are considered "difficult to manage". The purpose of this paper is to evaluate the work of the service by examining referrals made, strategies employed for each referral, and patient outcomes, as well as investigating issues in the service's development and implementation. Design/methodology/approach: A retrospective descriptive study by review of 38 case notes, and qualitative interviews of 47 staff within the service and those referring to the service. Findings: In the first eight months, 38 patients were referred due to violence, aggression and management problems. Most

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		interventions provided by the service involved working with referring staff, rather than direct patient contact. Subsequently, 16 per cent required referral to higher levels of security. Interviews showed the team's aims needed to be more clearly established, but that ward staff found the service to be a useful and productive resource. Research limitations/implications: The study is descriptive and retrospective, but showed that the service provided appropriate interventions for managing patients with serious mental illness and challenging behaviour. Practical implications: A transitional service may have value in keeping patients in the least restrictive setting. Careful planning is needed in designing novel interventions, ensuring clear aims and effective management. Originality/value: The service under study was novel, and may be useful in facilitating successful transfer from, or preventing admission to, secure services.
Higgins et al. 2018	Implementation of the Safewards model in public mental health facilities: A qualitative evaluation of staff perceptions	Background: The Safewards model is gaining increasing acceptance in the mental health field in Australia and overseas. One of the most important goals of inpatient psychiatric services is to provide a safe and therapeutic environment for both patients and staff. However, this goal can be difficult to achieve if staff-patient interaction is not conducive to preventing violence and aggression. Objective: The purpose of this study was to explore nursing staff perceptions of the factors impacting on their capacity to establish Safewards in acute adult inpatient wards. Design: This study was guided by a phenomenological approach to develop a rich understanding of staff perceptions using semi-structured interviews. Setting and sample: The setting was three acute mental health wards attached to general hospitals; one in a large provincial hospital and two in metropolitan hospitals in south-east Queensland. Interview participants were a purposive sample of fifteen registered nurses across each of the three wards. Method: Semi-structured interviews were conducted at 12 months post-implementation of Safewards. The study was underpinned by Michie's integrative framework of behaviour change that helped identify target areas in order to enhance successful implementation of this model. Results: Content analysis of interview transcripts highlighted a range of factors including failure to address the difficulties encountered by some staff in engaging with Safewards interventions, lack of support from management, poor use of nurse educator time, the 'language' of Safewards, high acuity on the study wards, and staff and patient turnover. Conclusion: This study highlights some difficulties with implementing Safewards and maintaining fidelity of the Safewards interventions in busy acute inpatient wards. Although these findings are from a qualitative study consisting of only 15 staff, our results indicate that efforts to implement Safewards need to address challenges faced by staff in engaging with the interventions, ensure buy-in from management, ensure adequate training and support during implementation and review training materials to ensure they fit with the local (i.e. Australian) context. Safewards

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		provides an opportunity for a change in attitudes and development of a more therapeutic ward environment.
Huber et al. 2016	Suicide risk and absconding in psychiatric hospitals with and without open door policies: a 15 year, observational study	BACKGROUND: Inpatient suicide and absconding of inpatients at risk of self-endangering behaviour are important challenges for all medical disciplines, particularly psychiatry. Patients at risk are often admitted to locked wards in psychiatric hospitals to prevent absconding, suicide attempts, and death by suicide. However, there is insufficient evidence that treatment on locked wards can effectively prevent these outcomes. We did this study to compare hospitals without locked wards and hospitals with locked wards and to establish whether hospital type has an effect on these outcomes. METHODS: In this 15 year, naturalistic observational study, we examined 349 574 admissions to 21 German psychiatric inpatient hospitals from Jan 1, 1998, to Dec 31, 2012. We used propensity score matching to select 145 738 cases for an analysis, which allowed for causal inference on the effect of ward type (ie, locked, partly locked, open, and day clinic wards) and hospital type (ie, hospitals with and without locked wards) on suicide, suicide attempts, and absconding (with and without return), despite the absence of an experimental design. We used generalised linear mixed-effects models to analyse the data. FINDINGS: In the 145 738 propensity score-matched cases, suicide (OR 1.326, 95% CI 0.803-2.113; p=0.24), suicide attempts (1.057, 0.787-1.412; p=0.71), and absconding with return (1.288, 0.874-1.929; p=0.21) and without return (1.090, 0.722-1.659; p=0.69) were not increased in hospitals with an open door policy. Compared with treatment on locked wards, treatment on open wards was associated with a decreased probability of suicide attempts (OR 0.658, 95% CI 0.504-0.864; p=0.003), absconding with return (0.629, 0.524-0.764; p<0.0001), and absconding without return (0.707, 0.546-0.925; p=0.01), but not completed suicide (0.823, 0.376-1.766; p=0.63). INTERPRETATION: Locked doors might not be able to prevent suicide and absconding. FUNDING: None.
Insua-Summerhays et al. 2018	Staff and patient perspectives on therapeutic engagement during one-to-one observation	WHAT IS KNOWN ON THE SUBJECT? One-to-one observation uses continuous staff observation to safeguard patients judged likely to harm themselves or others. Policies increasingly mandate that staff engage therapeutically with patients during one-to-one observation. Yet not enough is known about factors facilitating or impeding such therapeutic engagement. WHAT DOES THIS PAPER ADD TO EXISTING KNOWLEDGE? This study enriches existing literature on one-to-one observation through integrating the perspectives of staff of different levels of qualification, and patients of different diagnostic and risk profiles. Whilst previous research has highlighted the occurrence of counter-therapeutic staff-patient interactions, integration of patient and staff perspectives in the current study has demonstrated that patient and staff often attribute the causes differently, with each apportioning blame to the other, leading both parties to feel misunderstood, and staff lack confidence to overcome these challenges. A novel finding was

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		that rapport-building via simple demonstrations of compassion and conversations about everyday things was viewed as an essential prerequisite to encouraging patients to open up about their experiences of emotional distress, whilst implementation of techniques drawn from psychological interventions was viewed as less important than staff's core relational skills. WHAT ARE THE IMPLICATIONS FOR PRACTICE? Therapeutic engagement during observation can enhance its risk management aims, providing thought is given to understanding and negotiating complex dynamics between staff and patients. Supervision for staff conducting observations should focus on building rapport in preference to emphasizing psychological intervention (e.g. DBT), and should enable staff to reflect on better understanding and managing their own emotions towards "hard-to-engage" patients. ABSTRACT: Introduction: Policies increasingly focus on staff-patient interactions during one-to-one psychiatric nursing observations as an opportunity for therapeutic engagement—yet if and how this is feasible is unknown. Aim: This study aimed to integrate staff and patient perspectives to determine what factors facilitate or impede therapeutic engagement during one-to-one observation. Method: Thematic analysis of qualitative interviews with 31 psychiatric inpatient staff at different levels of seniority and 28 inpatients spanning a range of diagnoses and risk profiles. Results: Negative experiences of observation were characterized by a reciprocal dynamic where both patients and staff withdrew from interactions, having felt the other did not want to engage with them. Staff and patients agreed that these difficulties could be overcome when staff showed patients that they cared, gradually building trust through simple demonstrations of compassion and 'normalizing' conversation about everyday things. This approach helped patients to feel safe enough to open up about their distress, which in turn helped staff to better understand their experiences and work with them to find solutions. Implications for practice: Engagement during observation could be facilitated if staff receive more supervision in understanding difficult dynamics that impede rapport-building and in managing their emotions towards patients they experience as "hard-to-engage".
James et al. 2017	Quality of intervention delivery in a cluster randomised controlled trial: a qualitative observational study with lessons for fidelity	Background: Understanding intervention fidelity is an essential part of the evaluation of complex interventions because fidelity not only affects the validity of trial findings, but also because studies of fidelity can be used to identify barriers and facilitators to successful implementation, and so provide important information about factors likely to impact the uptake of the intervention into clinical practice. Participant observation methods have been identified as being particularly valuable in studies of fidelity, yet are rarely used. This study aimed to use these methods to explore the quality of implementation of a complex intervention (Safewards) on mental health wards during a cluster randomised controlled trial. Specific aims were firstly to describe the different ways in which the intervention was implemented, and

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		secondly to explore the contextual factors moderating the quality of intervention delivery, in order to inform 'real world' implementation of the intervention. Methods: Safewards was implemented on 16 mental health wards in England. We used Research Assistants (RAs) trained in participant observation to record qualitative observational data on the quality of intervention delivery (n = 565 observations). At the end of the trial, two focus groups were conducted with RAs, which were used to develop the coding framework. Data were analysed using thematic analysis. Results: There was substantial variation in intervention delivery between wards. We observed modifications to the intervention which were both fidelity consistent and inconsistent, and could enhance or dilute the intervention effects. We used these data to develop a typology which describes the different ways in which the intervention was delivered. This typology could be used as a tool to collect qualitative observational data about fidelity during trials. Moderators of Safewards implementation included systemic, interpersonal, and individual factors and patient responses to the intervention. Conclusions: Our study demonstrates how, with appropriate training in participant observation, RAs can collect high-quality observational data about the quality of intervention delivery during a trial, giving a more complete picture of 'fidelity' than measurements of adherence alone.
Jimu et al. 2019	The Administration of Pro re nata Medication by Mental Health Nurses: A Thematic Analysis	Pro re nata (PRN) medication is medication administered by nurses as required commonly in response to a patient's symptoms or behaviour including insomnia, agitation or anxiety. There is a paucity of research around the process of PRN administration in mental health settings in Ireland and international evidence suggests inconsistencies in practices. This study aimed to explore the process of PRN medication administration by mental health nurses. Using a qualitative descriptive design, semi-structured interviews were undertaken with 19 mental health nurses in three acute inpatient units in one mental health service in Ireland. Most participants reported undertaking an assessment of the patient before administering PRN medication; however, many also reported having observed incidents of poor practice. There was evidence of some interdisciplinary sensitivities around instructions regarding the use of PRN medications between doctors who prescribed them and nurses who dispensed them. A need for service improvements were also identified including the use of alternative strategies to PRN use such as de-escalation techniques and education around psychopharmacology. PRN medication is commonly used in mental health settings; however, this study suggests that there is potential for improvement in relation to how it is prescribed and administered. Overuse of PRN medication has been associated with increased morbidity. Mental health nurses are required to carefully consider whether PRN medication is warranted in the first instance and how its use might impact on patients.

Author/Date	Title	Abstract
Kalagi et al. 2018	Requirements for the implementation of open door policies in acute psychiatry from a mental health professionals' and patients' view: A qualitative interview study	Background: Treating legally committed patients on open, instead of locked wards is controversially discussed and the affected stakeholders (patients, mental health professionals) have ambiguous views on the benefits and disadvantages. The study aims to assess the opinions and values of relevant stakeholders with regard to the requirements for implementing open wards in psychiatric hospitals. Methods: Semi-structured interviews were conducted with 15 psychiatrists, 15 psychiatric nurses and 15 patients, and were analyzed using qualitative content analysis. Results: The interviewees identified conceptual, personnel and spatial requirements necessary for an open door policy. Observation and door watch concepts are judged to be essential for open wards, and patients appreciate the therapeutic value they hold. However, nurses find the door watch problematic. All groups suggest seclusion or small locked divisions as a possible way of handling agitated patients. All stakeholders agree that such concepts can only succeed if sufficient, qualified staff is available. They also agree that freedom of movement is a key element in the management of acutely ill patients, which can be achieved with an open door policy. Finally, the interviewees suggested removing the door from direct view to prevent absconding. Conclusions: For psychiatric institutions seeking to implement (partially) open wards, the present results may have high practical relevance. The stakeholders' suggestions also illustrate that fundamental clinical changes depend on resource investments which—at least at a certain point—might not be feasible for individual psychiatric institutions but presumably require initiatives on the level of mental health care providers or policy makers.
Kipping et al. 2018	Co-creation of the Safewards Model in a Forensic Mental Health Care Facility	Violence and aggression are highly complex problems in mental health care facilities; thus, multifaceted conflict-reduction strategies are required to mitigate and reduce violence. Safewards is an evidence-informed model aimed at preventing events that have the capacity to trigger aggression and violence. Effectiveness studies of the implementation of Safewards have shown mixed results, including that implementation strategies failed to engage staff and fidelity was low. The objective of this study was to examine the effectiveness of implementing the Safewards model with an approach that embedded co-creation principles in the staff training. Overall, results showed high staff engagement. The average rate of attendance at the classroom-based, staff champion training (n¼108) was 79% (SD¼23). Additionally, online training modules were available to all staff and were completed by 238 of 259 forensic program staff (92%). Overall, staff perceived co-creation to be a positive strategy; staff liked being asked to be involved in the planning, felt that their voices were heard, and believed that it contributed to the success of the Safewards implementation. This study showed that the inclusion of co-creation principles in the implementation strategy enhanced staff adherence to the Safewards model as demonstrated by the high fidelity scores, and effectively led to increased buy-in and engagement of staff.

Author/Date	Title	Abstract
Kuivalainen et al. 2017	De-escalation techniques used, and reasons for seclusion and restraint, in a forensic psychiatric hospital	In Finland, the Mental Health Act determines the legal basis for seclusion and restraint. Restrictive measures are implemented to manage challenging situations and should be used as a last resort in psychiatric inpatient care. In the present study, we examined the reasons for seclusion and restraint, as well as whether any de-escalation techniques were used to help patients calm down. Seclusion and restraint files from a 4-year period (1 June 2009 – 31 May 2013) were retrospectively investigated and analysed by content analysis. Descriptive statistics were calculated. A total of 144 episodes of seclusion and restraint were included to analyse the reasons for seclusion and restraint, and 113 episodes were analysed to examine unsuccessful de-escalation techniques. The most commonly-used techniques were one-to-one interaction with a patient (n = 74, 65.5% of n = 113) and administration of extra medication (n = 37, 32.7% of n = 113). The reasons for seclusion and restraint were threatening harmful behaviour (n = 51, 35.4% of n = 144), direct harmful behaviour (n = 43, 29.9%), indirect harmful behaviour (n = 42, 29.1%), and other behaviours (n = 8, 5.6%). In general, the same de-escalation techniques were used with most patients. Most episodes of seclusion or restraint were due to threats of violence or direct violence. Individual means of self-regulation and patient guidance on these techniques are needed. Additionally, staff should be educated on a diverse range of de-escalation techniques. Future studies should focus on examining de-escalation techniques for the prevention of seclusion.
Lamanna et al. 2016	Aggression in psychiatric hospitalizations: a qualitative study of patient and provider perspectives	BACKGROUND: When the people hospitalized in psychiatric units demonstrate aggression, it harms individuals and creates legal and financial issues for hospitals. Aggression has been linked to inpatient, clinician and environmental characteristics. However, previous work primarily accessed clinicians' perspectives or administrative data and rarely incorporated inpatients' insights. This limits validity of findings and impedes comparisons of inpatient and clinician perspectives. AIMS: This study explored and compared inpatient and clinician perspectives on the factors affecting verbal and physical aggression by psychiatric inpatients. METHODS: This study used an interpretive theoretical framework. Fourteen inpatients and 10 clinicians were purposefully sampled and completed semi-structured interviews. Data were analyzed using inductive thematic analysis. RESULTS: Six themes were identified at personal and organizational levels. The three person-level themes were major life stressors, experience of illness and interpersonal connections with clinicians. The three organization-level themes were physical confinement, behavioural restrictions and disengagement from treatment decisions. CONCLUSIONS: Aggression is perceived to have a wide range of origins spanning personal experiences and organizational policies, suggesting that a wide range of prevention strategies are needed.

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Langsrud et al. 2018	Sleep at night and association to aggressive behaviour; Patients in a Psychiatric Intensive Care Unit	Evaluations of associations between sleep at night and aggressive behaviour in Psychiatric Intensive Care Units (PICU) are lacking. The aims were to explore if sleep duration or night-to-night variations in sleep duration correlated with aggressive behaviour and aggressive incidents the next day and through the whole admission. Fifty consecutive patients admitted to a PICU were included (521 nights) and the nurses registered the time patients were sleeping, aggressive behaviour with The Broset Violence Checklist (BVC) and aggressive incidents with The Staff Observation Aggression Scale-Revised (SOAS-R). At admission, short sleep duration the first night correlated with aggressive behaviour the next day and admissions with violent incidents had a median of 4.0h difference in sleep from night one to night two compared to 2.1h for the rest of the admissions. During the stay, large absolute difference in sleep duration between two nights correlated with aggressive behaviour the next day and short sleep duration was associated with violent incidents. Short sleep duration and night-to-night variations in sleep duration are both associated with increased risk for aggression in PICUs. This observation might help to predict and prevent aggressive incidents.
Long et al. 2015	Reducing the use of seclusion in a secure service for women	Reducing the use of seclusion to deal with challenging behaviour is a priority in secure services for women. This study describes the concurrent introduction of a series of initiatives based on recovery principles and the full involvement of patients in their risk management plans. Following change implementation, the first 19 patients who had completed one year of treatment were matched with 19 patients who had completed their first year of treatment before change. A significant decline in both the number of seclusions and risk behaviour post-change was complemented by improved staff ratings of institutional behaviour, increased treatment engagement and a reduction in time spent in medium security. Staff and patients differed in terms of their ratings of the most effective strategies introduced. Patients favoured the Relational Security item of increased individual engagement and timetabled Behaviour Chain Analysis sessions. Staff viewed on ward training and use of de-escalation techniques as most effective. Findings confirm results from mixed gender forensic mental health samples that seclusion can be successfully reduced without an increase in patient violence or alternative coercive strategies. Limitations of the study are discussed along with the need for future evaluations to address issues of fidelity and utilise vigorously designed case studies.
Maguire et al. 2018	Evaluating the Introduction of the Safewards Model to a Medium- to Long-Term Forensic Mental Health Ward	Care and treatment in forensic mental health wards can present with challenges when loss of hope and freedom, and aggression are present, which can then influence ward atmosphere and feelings of safety. Safewards is a model designed to address a range of conflict (e.g., aggression and self-harm) and containment (e.g., use of restrictive interventions) events and may provide a suitable approach to delivery of care in a forensic setting, while also addressing aggression, restrictive interventions, and ward atmosphere. The aim of this study was to evaluate the

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		introduction of Safewards to a forensic mental health ward to determine suitability, and to explore if changes to conflict, containment, and ward atmosphere occurred. A mixed methods approach was used involving the collection of incident data related to conflict and containment, an assessment of the degree to which interventions were implemented, and an assessment of the social climate before and after implementation. Results suggested that there were fewer conflict events after Safewards was introduced; however, there did not appear to be any changes in the already low use of restrictive interventions. The Safewards interventions were implemented to a high degree of fidelity, and there was indication of an increase in a positive perception of ward atmosphere, supported by themes of positive change, enhanced safety, and respectful relationships. Safewards may assist in contributing to an improvement in the perception of ward atmosphere. To enhance implementation in a forensic mental health setting, there may be a need to consider additional elements to Safewards, pertinent to this setting.
McCauley and Smith. 2018	Unlocking an acute psychiatric ward: Open doors, absent patients?	No abstract available
Mistler et al. 2017	Mobile Mindfulness Intervention on an Acute Psychiatric Unit: Feasibility and Acceptability Study	BACKGROUND: Aggression and violence on acute psychiatric inpatient units is extensive and leads to negative sequelae for staff and patients. With increasingly acute inpatient milieus due to shorter lengths of stay, inpatient staff is limited in training and time to be able to provide treatments. Mobile technology provides a new platform for offering treatment on such units, but it has not been tested for feasibility or usability in this particular setting. OBJECTIVE: The aim of this study was to examine the feasibility, usability, and acceptability of a brief mindfulness meditation mobile phone app intended to reduce anger and aggression in acute psychiatric inpatients with schizophrenia, schizoaffective disorder, or bipolar disorder, and a history of violence. METHODS: Participants were recruited between November 1, 2015 and June 1, 2016. A total of 13 inpatients at an acute care state hospital carried mobile phones for 1 week and were asked to try a commercially available mindfulness app called Headspace. The participants completed a usability questionnaire and engaged in a qualitative interview upon completion of the 7 days. In addition, measures of mindfulness, state and trait anger, and cognitive ability were administered before and after the intervention. RESULTS: Of the 13 enrolled participants, 10 used the app for the 7 days of the study and completed all measures. Two additional participants used the app for fewer than 7 days and completed all measures. All participants found the app to be engaging and easy to use. Most (10/12, 83%) felt comfortable using Headspace and 83% (10/12) would recommend it to others. All participants made some effort to try the app, with 6 participants (6/12, 50%) completing the first 10 10-minute “foundation” guided meditations. CONCLUSIONS: This is the first known study of the use of a

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		commercially available app as an intervention on acute psychiatric inpatient units. Acutely ill psychiatric inpatients at a state hospital found the Headspace app easy to use, were able to complete a series of meditations, and felt the app helped with anxiety, sleep, and boredom on the unit. There were no instances of an increase in psychotic symptoms reported and there were no episodes of aggression or violence noted in the record.
Nurenberg et al. 2015	Animal-assisted therapy with chronic psychiatric inpatients: Equine-assisted psychotherapy and aggressive behaviour	Objective: Animal-assisted therapy (AAT), most frequently used with dogs, is being used increasingly as an adjunctive alternative treatment for psychiatric patients. AAT with larger animals, such as horses, may have unique benefits. In this randomized controlled study, equine and canine forms of AAT were compared with standard treatments for hospitalized psychiatric patients to determine AAT effects on violent behaviour and related measures. Method(s): The study included 90 patients with recent in hospital violent behaviour or highly regressed behaviour. Hospitalization at the 500-bed state psychiatric hospital was two months or longer (mean 5.4 years). Participants were randomly selected to receive ten weekly group therapy sessions of standardized equine-assisted psychotherapy (EAP), canine-assisted psychotherapy (CAP), enhanced social skills psychotherapy, or regular hospital care. Participants' mean age was 44, 37% were female, 76% had diagnoses of schizophrenia or schizoaffective disorder, and 56% had been committed involuntarily for civil or forensic reasons. Violence related incident reports filed by staff in the three months after study intake were compared with reports two months pre-intake. Result(s): Interventions were well tolerated. Analyses revealed an intervention group effect (F=3.00, df=3 and 86, p=.035); post hoc tests showed specific benefits of EAP (p<.05). Similar AAT effects were found for the incidence of 1:1 clinical observation (F=2.70, df=3 and 86, p=.051); post hoc tests suggested benefits of CAP (p=.058) as well as EAP (p=.082). Covariance analyses indicated that staff can predict which patients are likely to benefit from EAP (p=.01). Conclusion(s): AAT, and perhaps EAP uniquely, may be an effective therapeutic modality for long-term psychiatric patients at risk of violence.
Price et al. 2015	Learning and performance outcomes of mental health staff training in de-escalation techniques for the management of violence and aggression	Background: De-escalation techniques are a recommended non-physical intervention for the management of violence and aggression in mental health. Although taught as part of mandatory training for all National Health Service (NHS) mental health staff, there remains a lack of clarity around training effectiveness. Aims: To conduct a systematic review of the learning, performance and clinical safety outcomes of de-escalation techniques training. Method: The review process involved a systematic literature search of 20 electronic databases, eligibility screening of results, data extraction, quality appraisal and data synthesis. Results: A total of 38 relevant studies were identified. The strongest impact of training appears to be on de-escalation-related knowledge, confidence to manage aggression and deescalation

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		performance (although limited to artificial training scenarios). No strong conclusions could be drawn about the impact of training on assaults, injuries, containment and organisational outcomes owing to the low quality of evidence and conflicting results. Conclusions: It is assumed that de-escalation techniques training will improve staff's ability to de-escalate violent and aggressive behaviour and improve safety in practice. There is currently limited evidence that this training has these effects.
Price et al. 2016	Evaluation of Safewards in Forensic Mental Health	Background: Safewards is a multicomponent, evidence-based conflict and containment reduction intervention that has demonstrated effectiveness in general acute mental health settings. Aim: To evaluate the effect of Safewards in six wards of a regional medium secure forensic unit. Methods: A service evaluation was adopted incorporating a non-randomised controlled design to analyse the effects of Safewards on conflict and containment between and within wards. Adherence to the interventions was measured and informal feedback sessions with staff were conducted to explore views on the acceptability of the interventions. Results: Both between and within-ward analysis found no statistically significant benefit of Safewards. However, adherence to the interventions was poor due to prevailing operational priorities, including heightened acuity in the research sites, demands on staffing resources, criticism of the process of implementation and staff attitudinal barriers. Conclusion: The effect of Safewards in this setting cannot be determined without greater staff acceptance and adherence to the interventions. The success of Safewards will be sensitive to prevailing operational and environmental conditions. On reflection, staff should have been prepared more extensively to ensure they understood the rationale for the interventions more clearly.
Price et al. 2018	The support-control continuum: An investigation of staff perspectives on factors influencing the success or failure of de-escalation techniques for the management of violence and aggression in mental health settings	BACKGROUND: De-escalation techniques are recommended to manage violence and aggression in mental health settings yet restrictive practices continue to be frequently used. Barriers and enablers to the implementation and effectiveness of de-escalation techniques in practice are not well understood. OBJECTIVES: To obtain staff descriptions of de-escalation techniques currently used in mental health settings and explore factors perceived to influence their implementation and effectiveness. DESIGN: Qualitative, semi-structured interviews and Framework Analysis. SETTINGS: Five in-patient wards including three male psychiatric intensive care units, one female acute ward and one male acute ward in three UK Mental Health NHS Trusts. PARTICIPANTS: 20 ward-based clinical staff. METHODS: Individual semi-structured interviews were digitally recorded, transcribed verbatim and analysed using a qualitative data analysis software package. RESULTS: Participants described 14 techniques used in response to escalated aggression applied on a continuum between support and control. Techniques along the support-control continuum could be classified in three groups: ‘support’ (e.g. problem-solving, distraction, reassurance), ‘non-physical control’ (e.g. reprimands, deterrents,

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		instruction) and 'physical control' (e.g. physical restraint and seclusion). Charting the reasoning staff provided for technique selection against the described behavioural outcome enabled a preliminary understanding of staff, patient and environmental influences on de-escalation success or failure. Importantly, the more coercive 'non-physical control' techniques are currently conceptualised by staff as a feature of de-escalation techniques, yet there was evidence of a link between these and increased aggression/use of restrictive practices. Risk was not a consistent factor in decisions to adopt more controlling techniques. Moral judgements regarding the function of the aggression; trial-and-error; ingrained local custom (especially around instruction to low stimulus areas); knowledge of the patient; time-efficiency and staff anxiety had a key role in escalating intervention. CONCLUSION: This paper provides a new model for understanding staff intervention in response to escalated aggression, a continuum between support and control. It further provides a preliminary explanatory framework for understanding the relationship between patient behaviour, staff response and environmental influences on de-escalation success and failure. This framework reveals potentially important behaviour change targets for interventions seeking to reduce violence and use of restrictive practices through enhanced de-escalation techniques.
Proudlock et al. 2020	Using EMDR therapy with patients in an acute mental health crisis	Background: Death by suicide continues to be a global public health concern with little research demonstrating the effectiveness of treatment options. This exploratory study exams the efficacy of Eye Movement Desensitisation and Reprocessing (EMDR) Therapy delivered to patients experiencing an acute mental health crisis to explore if by treating their background trauma, improvements could be seen in their general psychopathology and if there was a resulting decrease in their desire for suicide. Method(s): A practice-based service development project was conducted within a mental health hospital. A non-randomised, exploratory pre-test post-test design was utilised. Participants were identified from adult patients currently receiving care from either an inpatient mental health ward or the Crisis Resolution and Home Treatment Team (CRHTT). Those who had reported experiencing at least one event that they considered to be traumatic were offered EMDR Therapy. Notes from the electronic database were analysed to assess contact with services 12 months prior to treatment and following treatment. Result(s): 72 patients were offered treatment in the study with 57 completing treatment. Patients made significant improvements across all the psychometrics, including a reduction in suicidal ideation. The majority needed less than 10 sessions and needed no onward referral for further psychological therapy. Cost savings were realised by retracting referrals for further therapy and in early discharge from CRHTT and acute wards, and by preventing admissions. Contact with services post treatment also reduced. Conclusion(s): EMDR Therapy can be an effective treatment for patients experiencing a mental health crisis who have a

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		trauma picture, resulting in significant improvements in their mental well-being and substantial cost savings for the National Health Service (NHS).
Robson et al. 2017	Effect of implementation of a smoke-free policy on physical violence in a psychiatric inpatient setting: an interrupted time series analysis	BACKGROUND: Smoke-free policies are important to protect health and reduce health inequalities. A major barrier to policy implementation in psychiatric hospitals is staff concern that physical violence will increase. We aimed to assess the effect of implementing a comprehensive smoke-free policy on rates of physical assaults in a large UK mental health organisation. METHODS: We did an interrupted time series analysis of incident reports of physical assault 30 months before and 12 months after the implementation of the policy in the inpatient wards of South London and Maudsley National Health Service Foundation Trust, London, UK. We used a quasi-Poisson generalised additive mixed model to model the monthly incidence of physical assaults as a function of several explanatory variables. FINDINGS: 4550 physical assaults took place between April 1, 2012, and Sept 30, 2015; 225 (4.9%) of which were smoking-related. After adjustment for temporal and seasonal trends and key confounders (sex, age, schizophrenia or related disorders, or having been sectioned under the Mental Health Act), there was a 39% reduction in the number of physical assaults per month after the policy introduction compared with beforehand (incidence rate ratio 0.61, 95% CI 0.53-0.70; p<0.0001). INTERPRETATION: Introduction of a comprehensive smoke-free policy appeared to reduce the incidence of physical assaults. Adequately resourced smoke-free policies could be part of broader violence reduction strategies in psychiatric settings. FUNDING: National Institute for Health Research Collaboration for Leadership in Applied Health Research and Care South London (King's College Hospital NHS Foundation Trust).
Schneeberger et al. 2017	Aggression and violence in psychiatric hospitals with and without open door policies: A 15-year naturalistic observational study	Aggressive behavior and violence in psychiatric patients have often been quoted to justify more restrictive settings in psychiatric facilities. However, the effects of open vs. locked door policies on aggressive incidents remain unclear. This study had a naturalistic observational design and analyzed the occurrence of aggressive behavior as well as the use of seclusion or restraint in 21 German hospitals. The analysis included data from 1998 to 2012 and contained a total of n = 314,330 cases, either treated in one of 17 hospitals with (n = 68,135) or in one of 4 hospitals without an open door policy (n = 246,195). We also analyzed the data according to participants' stay on open, partially open, or locked wards. To compare hospital and ward types, we used generalized linear mixed-effects models on a propensity score matched subset (n = 126,268) and on the total dataset. The effect of open vs. locked door policy was non-significant in all analyses of aggressive behavior during treatment. Restraint or seclusion during treatment was less likely in hospitals with an open door policy. On open wards, any aggressive behavior and restraint or seclusion were less likely, whereas bodily harm was more likely than on closed wards. Hospitals with open door policies did not differ from hospitals with locked wards

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		regarding different forms of aggression. Other restrictive interventions used to control aggression were significantly reduced in open settings. Open wards seem to have a positive effect on reducing aggression. Future research should focus on mental health care policies targeted at empowering treatment approaches, respecting the patient's autonomy and promoting reductions of institutional coercion.
Skoretz et al. 2016	Stimulants for impulsive violence in schizophrenia spectrum disordered women: A case series and brief review	High violence prevalence is a common concern for forensic psychiatric settings. Categorizing underlying drivers of violence has helped to direct treatment and management efforts toward psychotic, predatory, and impulsively violent psychopathology. This article describes a series of cases in which clozapine provided adequate control of psychosis in women suffering schizophrenia-spectrum disorders. Nevertheless, impulsive violence remained problematic. Add-on methylphenidate was found to be safe and effective in curbing impulsive violent behaviour in this select group of patients.
Smith et al. 2015	Correlation between reduction of seclusion and restraint and assaults by patients in Pennsylvania's state hospitals	Objective: This prospective study assessed the use of seclusion and restraint in the Pennsylvania state hospital system from 2001 to 2010. It also examined the correlation between declining use of containment procedures and assaults by patients on other patients and staff. Methods: The 12,900 anonymized records involving the 1801 unique, civilly committed individuals who were physically or mechanically restrained and secluded in the nine civil hospitals during this study period were entered into a database. The data set included demographic and diagnostic information about the patients and the cause and effect of the procedures. These data were compared with rates of patient-to-patient and patient-to-staff assaults to determine any correlation between changes in use of containment and assaults. Results: From 2001 to 2010, the use of mechanical restraint significantly declined from .37 to .08 episodes per 1000 days ($p < .018$), and the use of seclusion significantly declined from .21 to .01 episodes per 1000 days ($p < .001$). Persons with an axis I diagnosis of psychotic disorder accounted for 44% of containment procedures used during this study. Patient-to-patient assaults declined slightly, and patient-to-staff assaults were unaffected. Conclusions: Decreasing the use of containment procedures did not increase assaults. Better leadership, data transparency, use of clinical alerts, workforce development, policy changes, enhanced use of response teams, implementation of dialectical behavior therapy, and discontinuation of the psychiatric use of PRN orders contributed to the change in use of containment procedures. A philosophical change to a recovery model of psychiatric care and services was the driving force behind this transformation.
Stensgaard et al. 2018	Implementation of the Safewards model to reduce the use of coercive measures in	The aim of this study was to investigate whether the implementation of the Safewards model reduces the frequency of coercive measures in adult psychiatric inpatient units. Data on all coercive measures performed in psychiatric hospitals in the Region of Southern Denmark

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	adult psychiatric inpatient units: An interrupted time series analysis	1/1/2012–31/3/2017 were collected retrospectively through the Register of Coercive Measures in Psychiatric Treatment. Interrupted time series analysis by segmented regressions with poisson models were performed on overall coercive measures (n=12,660), mechanical restraint (n=2948) and forced sedation (n=4373). A 2% (95% CI: 1%–4%, p < 0.001) decrease per quarter in the frequency of coercive measures and an 11% (95% CI: 8%–13%, p < 0.001) decrease per quarter in the frequency of forced sedation were found after the implementation of the Safewards model. In conclusion, the implementation of the Safewards model in adult psychiatric inpatient units was associated with a decrease in forced sedation and potentially the overall use of coercive measures.
Timberlake et al. 2020	Nonsuicidal Self-Injury: Management on the Inpatient Psychiatric Unit	BACKGROUND: Between 4% and 70% of inpatients engage in self-harming behaviors and effective interventions are needed to address this population. AIM: This article reviews literature from 2007 to 2017 to address treatment and management strategies specific for the treatment of nonsuicidal self-injury in the inpatient psychiatric setting. METHODS: Cochrane, PsycINFO, PubMed, and CINAHL were searched for relevant articles with 34 studies reviewed for applicability to the question, and 9 parsed into a Summary of Findings table. RESULTS: Therapeutic approaches that show promise include cognitive behavior therapy, dialectical behavior therapy, and mentalization as well as medications that act on the serotonergic, dopaminergic and opioid systems. Effective models of care aim toward enhancing therapeutic relationships with staff, providers, and most important, encouraging the internal shift toward recovery within the patient. CONCLUSIONS: More research with controlled designs in the inpatient setting is needed; however, regardless of which approach is used, the impact of the individual caregiver on the patient's recovery is key.
Tolisano et al. 2017	A Positive Behavioral Approach for Aggression in Forensic Psychiatric Settings	Aggression toward self and others by complex patients admitted to forensic psychiatric settings is a relatively common yet extremely difficult behavior to treat. Traditional interventions in forensic inpatient settings have historically emphasized control and management over treatment. Research over the past several years has demonstrated the value of behavioral and psychosocial treatment interventions to reduce aggression and to increase prosocial skill development in inpatient forensic population. Positive behavioral support (PBS) offers a comprehensive approach that incorporates the science of applied behavioral analysis (ABA) in support of patients with challenging behaviors, including aggression and violence. In this article, we describe a PBS model to treat aggression in forensic settings. PBS includes a comprehensive functional assessment, along with four basic elements: ecological strategies, positive programming, focused support strategies, and reactive strategies. Other key components are described, including data collection, staff training, fidelity checks to ensure correct implementation of the plan, and ongoing monitoring and revision of PBS strategies, according

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		to treatment outcomes. Finally, a behavioral consultation team approach within the inpatient forensic setting is recommended, led by an assigned doctoral-level psychologist with specialized knowledge and training in behavioral methods. The behavioral consultation team works directly with the unit treatment team and the identified patient to develop, implement, and track a plan that may extend over several weeks to several months including transition into the community. PBS can offer a positive systemic impact in forensic inpatient settings, such as providing a nonpharmacologic means to address aggression, reducing the incidences of restraint and seclusion, enhancing staff proficiency in managing challenging patient presentations, and reducing recidivism when used as part of the bridge to community re-entry.
Tully et al. 2016	Innovation and pragmatism required to reduce seclusion practices	Seclusion may be harmful and traumatic to patients, detrimental to therapeutic relationships, and can result in physical injury to staff. Further, strategies to reduce seclusion have been identified as a potential method of improving cost-effectiveness of psychiatric services. However, developing alternative strategies to seclusion can be difficult. Interventions to reduce seclusion do not lend themselves to evaluation using randomized controlled trials (RCTs), though comprehensive literature reviews have demonstrated considerable non-RCT evidence for interventions to reduce seclusion in psychiatric facilities. In the UK, a recent 5-year evaluation of seclusion practice in a high secure UK hospital revealed reduced rates of seclusion without an increase in adverse incidents. To assess the effect of a novel intervention strategy for reduction of long-term segregation on a high secure, high dependency forensic psychiatry ward in the UK, we introduced a pilot program involving stratified levels of seclusion (long-term segregation), multidisciplinary feedback and information sharing, and a bespoke occupational therapy program. Reduced seclusion was demonstrated and staff feedback was mainly positive, indicating increased dynamism and empowerment on the ward. A more structured, stratified approach to seclusion, incorporating multidisciplinary team-working, senior administrative involvement, dynamic risk assessment, and bespoke occupational therapy may lead to a more effective model of reducing seclusion in high secure hospitals and other psychiatric settings. While lacking an evidence base at the level of RCTs, innovative, pragmatic strategies are likely to have an impact at a clinical level and should guide future practice and research.
Ulrich et al. 2018	Psychiatric ward design can reduce aggressive behavior	The article describes a conceptual model proposing that aggression in psychiatric facilities may be reduced by designing the physical environment with ten evidence-grounded stress-reducing features. The model was tested in a newer hospital in Sweden having wards with nine of the ten features. Data on two clinical markers of aggressive behavior, compulsory injections and physical restraints, were compared with data from an older facility (replaced by the newer hospital) that had only one stress-reducing feature. Another hospital with one feature, which did not change during the study period, served as a control. The proportion of patients

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		requiring injections declined (p<0.0027) in the new hospital compared to the old facility but did not change in the control hospital. Among patients who received injections, the average number of injections declined marginally in the new hospital compared to the old facility, but increased in the control hospital by 19%. The average number of physical restraints (among patients who received at least one) decreased 50% in the new hospital compared to the old. These findings suggest that designing better psychiatric buildings using reasoned theory and the best available evidence can reduce the major patient and staff safety threat posed by aggressive behavior.
Vandewalle et al. 2019	'Promoting and preserving safety and a life-oriented perspective': A qualitative study of nurses' interactions with patients experiencing suicidal ideation	Suicide prevention is an important imperative in psychiatric hospitals, where nurses have a crucial role in and make essential contributions to suicide prevention and promoting the recovery of patients experiencing suicidal ideation. The present qualitative grounded theory study aimed to uncover and understand the actions and aims of nurses in psychiatric hospitals during their interactions with patients experiencing suicidal ideation. Interviews were conducted with 26 nurses employed on 12 wards in four psychiatric hospitals. The data analysis was inspired by the Qualitative Analysis Guide of Leuven. The findings show that nurses' actions and aims in their interactions with patients experiencing suicidal ideation are captured in the core element 'promoting and preserving safety and a life-oriented perspective'. This core element represents the three interconnected elements 'managing the risk of suicide', 'guiding patients away from suicidal ideation', and 'searching for balance in the minefield'. The enhanced understanding of nurses' actions and aims can inform concrete strategies for nursing practice and education. These strategies should aim to challenge overly controlling and directing nursing approaches and support nurses' capacity and ability to connect and collaborate with patients experiencing suicidal ideation.
Vermeulen et al. 2019	"But I did not touch nobody!"—Patients' and nurses' perspectives and recommendations after aggression on psychiatric wards—A qualitative study	Aims: To gain a deeper understanding of the differences in patients and staff perspectives in response to aggression and to explore recommendations on prevention. Design: Qualitative, grounded theory study. Methods: We conducted semi-structured interviews with patients and nurses involved in an aggressive incident. Data collection was performed from May 2016 – March 2017. Results: Thirty-one interviews were conducted concerning 15 aggressive incidents. Patients and nurses generally showed agreement on the factual course of events, there was variation in agreement on the perceived severity (PS). Patients' recommendations on prevention were mostly personally focused, while nurses suggested general improvements. Conclusion: Patients are often capable to evaluate aggression and give recommendations on prevention shortly after the incident. Patients and nurses differ in the PS of aggression. Recommendations on prevention of patients and nurses are complementary. Impact: What problem did the study address? Perspectives of patients and nurses differ with respect to

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		aggression, but how is unclear. What were the main findings? Patients and nurses generally described a similar factual course of events concerning the incident, patients often perceive the severity less than nurses. Patients are capable to give recommendations on prevention of aggressive incidents, shortly after the incident. Where and on whom will the research have impact? Factual course of events can be a common ground to start evaluating aggressive incidents and post-incident review should address the severity of incidents. Asking recommendations from patients on how to improve safety and de-escalation can lead to innovative and personal de-escalation strategies and supports patients' autonomy.
Wong et al. 2015	Use of Seclusion in Psychiatric Intensive Care Units	This literature review aims to discover the factors that influence staff working on psychiatric intensive care units (PICUs) to implement seclusion. Identifying these factors may help to reduce the use of seclusion and improve client care. A comprehensive search of available publications was undertaken, with relevant articles analysed and discussed. The main factors identified were staff and service-user characteristics, with an increase in shift workload, aggression on both sides and client-to-staff ratio contributing to an increased use of seclusion. Environmental factors also played an important part, with smaller unit size leading to lower rates of seclusion. A re-evaluation of the design and layout of PICUs may enable a decrease in the use of seclusion. In addition, increasing the number of staff working on a unit might improve issues such as organisation, staff confidence and the ability to adopt alternative de-escalation techniques. This review shows that further study is needed in this area, particularly on the different health professional roles in a PICU.
Yakov et al. 2018	Sensory reduction on the general milieu of a high-acuity inpatient psychiatric unit to prevent use of physical restraints: A successful open quality improvement trial	Background: Impaired sensory gating in patients with acute mental illness predisposes to overstimulation and behavioral dyscontrol. Objective: Explore use of sensory reduction interventions on a high-acuity inpatient milieu to reduce high assault/restraint rates. Design: A multidisciplinary team using failure mode and effect analysis to explore high restraint use between 4:00 p.m. and 7:00 p.m. observed patient/staff overstimulation contributed to behavioral escalations. The team implemented sensory reduction/integration improvements over a 5-month period to prevent excessive restraint use. Results: Restraint rates dropped immediately following light and sound reduction interventions and by 72% at 11 months postimplementation. Mann-Whitney statistics for unpaired 6-month comparisons, 1-year pre- and postintervention showed significant reductions: Assault rates (median pre = 1.37, post = 0.18, U = 4, p = .02); Restraint rates (median pre = 0.50, post = 0.06, U = 0, p = .002). Conclusion: Sensory reduction during a high-stress time period on a high-acuity psychiatric unit was associated with a reduction in assaults and restraints.

Table A3.2—Study Characteristics of included papers

Author/Date	Study design	Objectives	Study population	Setting	Outcomes assessed	Key findings
Adri 2021	Pre–post	To improve the treatment of mania by using evidence-based interventions for rapid mood stabilisation and to educate psychiatric providers on up-to-date interventions for treating acute manic states.	n=5 psychiatric professionals, psychiatrists and psychiatric nurses (education regarding the mania protocol). All patients on the ward who had mania-related disorders.	Inpatient	Young Mania Rating Scale, participant responses to pre- and post-intervention quiz.	The percentage decrease in mean Young Mania Rating Scale scores from admission to the fifth day of hospitalisation was 61%. All psychiatric providers proved knowledge attainment by scoring 100% on the postintervention quiz.
Andersen et al. 2017	Case-controlled study of 2 inpatient units.	To reduce restraint and seclusion in inpatient mental health units through implementing the trained use of sensory-based assessments and sensory equipment.	Two inpatient units; intervention (n = 218), usual care (n = 224).	Inpatient units; one intervention and one usual care.	Instances of seclusion and restraint after implementation of SM program/policy.	The use of manual restraint decreased with 38% compared with the control group. The use of forced medication decreased with 46% compared with the control group. Altogether the use of physical restraint and forced medication decreased significantly with 42% ($p < .05$).
Aremu et al. 2018	Staff training and evaluation	The purpose of the current quality improvement project was to educate staff on methods to incorporate TIC	Psychiatric nurses and behavioural health technicians.	One adult behavioural health unit characterised by	Management of Violence and Aggression Attitude Scale	A decrease in PRN IM medications after the second wave of training, improvement

Author/Date	Study design	Objectives	Study population	Setting	Outcomes assessed	Key findings
		into daily practice and the use of brief solution-focused therapy techniques in escalating situations.		short LOS , high acuity.	(MAVAS). Combined Assessment of Psychiatric Environments (CAPE) brief version. Pre-and post-weekly use of PRN medication.	in staff attitudes towards patient aggression, and improved sense of staff competency in handling tense situations were noted. Audit of clinical notes revealed 76% of the notes included documentation indicating meaningful patient engagement.
Bader et al. 2015	Literature review	Demonstrate that aggression within hospitals is related to patients' psychiatric symptoms as well as their interactions with other patents, staff members, the ward milieu, and hospital policies, similar to the delicate balance of ecosystems.	Case example of an ecological approach.	Forensic psychiatric hospital	N/A	Despite the real barriers that make an ecological approach difficult, the existing research suggests a narrow focus on patients' psychiatric symptoms is only part of the solution to reducing violence within hospitals.
Baumgardt et al. 2019	Hybrid between an implementation study and an effectiveness study.	To evaluate the implementation of this model with regard to coercive interventions in inpatient care.	n=103 patients	Outpatient & Inpatient.	Frequency and duration of coercive interventions.	The overall use of coercive measures differed significantly between wards ($p \leq 0.001$) and decreased post-implementation. In one ward, the number of patients exposed to coercive interventions in relation to the overall number of admissions decreased significantly

Author/Date	Study design	Objectives	Study population	Setting	Outcomes assessed	Key findings
						(p = 0.003). Furthermore, the mean duration of coercive interventions overall declined significantly (p = 0.032) with an effect size of Cohen's d = −0.282 in that ward.
Bensimon et al. 2018	Comparison groups	Intervention using relaxing music chosen by patients in a closed psychiatric ward to achieve reduction in levels of stress and psychomotor agitation, reflected in higher VAS score and lower BARS score, in accordance with the research hypotheses.	n= 24 patients in seclusion exposed to relaxing music; n=28 with no sensory stimulation.	Inpatient seclusion	Emotional calm and reduction in psychomotor agitation, reflected in higher VAS score & lower BARS score.	Results show significantly higher emotional calm and prominent reduction in psychomotor agitation among the research group in comparison with the comparative group.
Berring et al. 2016	Pragmatic action research project: Co-operative enquiry concerned with transforming practice while practice is being explored via 4 focus group interviews, participant observations and field notes.	Identify, describe, and transfer knowledge about de-escalation practices in mental health care settings.	Gp1: Co-operative enquiry group n = 7 nurses and 1 nursing assistant Gp2: Stakeholder group n = 12 service users Gp3: Stakeholder group n= 4 mental health workers from forensic unit Gp4: Stakeholder group n = 2–20 management.	12-bed intensive care unit in a psychiatric hospital.	Self-reported changing practice resulting from the 4 ways of learning enabled by the Co-operative Inquiry methodology.	The analysis identified two main themes, which both had three sub-themes: (1) Practical knowing about de-escalation, which had the sub-themes: critical attention, community of inquiry, and de-escalation learners; (2) Transforming knowing about de-escalation, which had the sub-themes: living the learning, changing practice, and raised

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						publicity. One change that was made was the decision that one staff member would be responsible for guiding the patient towards a calmer personal space by engaging with the patient and promoting helpful solutions while others stood by. An overriding theme of the article was the advocation of the action research method—illustrating how a Co-operative Inquiry managed to facilitate organisational learning, including positive violence management approaches such as de-escalation strategies, team collaboration, and a community of enquiry. External professional interest in this project also grew strongly as word spread.
Bjorkdahl et al. 2016	Cross-sectional descriptive study	To further understand the experiences of staff who work with sensory rooms in the psychiatric care setting.	N = 126 staff members working with sensory rooms.	Inpatient	Staff perceptions and experiences using sensory	Although staff initially described both negative and positive expectations of sensory

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					rooms in an inpatient context.	rooms, after working with the rooms, there was a strong emphasis on more positive experiences, such as letting go of control and observing an increase in patients' self-confidence, emotional self-care and wellbeing.
Blair et al. 2017	Pre/Post Cohort Pre-retrospective audit number & duration of S/R events Post-intervention (staff ed + policy change + multiple practice procedure changes).	Effectiveness of an intervention to reduce instances of seclusion and restraint.	Pre intervention comparators—consecutive admissions Oct 2008 – Sep 2009 (n=3884) Post intervention—consecutive admissions Oct 2010 – Sep 2012 (n=8029).	Inpatient	Rates of seclusion events; duration of seclusion events; Rates of restraint events; duration of restraint events; Behaviours assoc'd with S/R events—in patients and staff responses.	Post-intervention = 52% reduction rate of seclusion, 27% reduction duration of seclusion per admission; 6% (NS) reduction rate of restraint events, 52% increase duration of restraints per admission. Mean seclusion event duration > mean restraint event duration during both pre and post intervention time periods: pre/post comparison = NS; S/R assoc'd with irritability (96% of events); boisterousness (78%), verbal threats (63%); confusion (50%). Most common staff interventions—verbal

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						de-escalation (90%); medication administration (84%); decreased stimulation (80%).
Bowers et al. 2015	Cluster RCT	To evaluate the efficacy of a complex intervention (Safewards), targeted at nursing staff, to reduce conflict and containment rates at the level of acute psychiatric wards.	n=564 psychiatric nursing staff. 15 hospitals randomly selected, 31 wards randomly selected. Experimental wards (n = 16), Control wards (n = 15).	Inpatient	Primary outcomes were rates of total conflict and rates of total containment as measured by the Patient-staff Conflict Checklist (PCC). Secondary data questionnaires completed by ward staff, attitude to personality disorder questionnaire, self-harm antipathy scale, ward atmosphere scale, SF-36v2, short form health survey. Fidelity checklist completed by RA at each ward visit. Baseline	For shifts with conflict or containment incidents, the experimental condition reduced the rate of conflict events by 15% (95% CI 5.7–23.7%) relative to the control intervention. The rate of containment events for the experimental intervention was reduced by 23.2% (95% CI 9.9–35.5%). (NB figure from Corrigendum 2016).

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					data collected 8 weeks, implementation 8 weeks. Continued use of intervention for 8 weeks.	
Brophy et al. 2020	Evidence Check rapid review including critical assessment of publications by a consumer academic	This review aimed to address the following questions: Question 1: What physical design features of mental health facilities reduce the use of seclusion and restraint in these facilities? Question 2: Of the design features identified in Question 1, are any specific elements essential, or unsuitable, for particular patient subgroups?	N/A	N/A	Reduction in use of seclusion and restraint	Question 1 The findings suggest physical design that aims to reduce the use of seclusion and restraint depends on a foundation of good design principles being in place. These include privacy, adequate space, no overcrowding, exposure to daylight and other appropriate lighting, use of colour, reduced levels of unpleasant noise, access to gardens, art that features nature, a homelike environment, and easy wayfinding and opportunities for consumer agency. These amenity features promote both consumer and staff safety, and reduce distress and environmental triggers

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						for conflict, which are central to the prevention of seclusion and restraint. Question 2 Few of the included studies discussed the physical environment in relation to specific subgroups of consumers. For young people, results indicated choice and control were important concepts to consider in designing facilities (e.g. coloured lights, light dimmers, music panels). For older people, noise reduction and attention to wayfinding was noted as particularly important. It was suggested noise reduction at night was valuable in forensic facilities because of its potential to improve sleep in what may be a sleep-deprived population.
Dardashti et al. 2015	Qualitative case series	To illustrate different approaches to violence management, including pharmacological,	7 cases	One long-term forensic hospital	N/A	N/A - illustrative case series

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		psychotherapeutic, and environmental interventions.				
Dickens et al. 2020	Pre–post	To measure changes in shift-level reports of conflict and containment associated with Safewards introduction, and to measure any association with change in the violence prevention climate using a tool validated for use in the current study setting.	n = 142 beds in 8 wards.	Acute mental health wards.	Patient-staff conflict (PCC-SR), perceptions regarding violence prevention (VPC-14), fidelity, ward characteristics.	Conflict and containment incidents per shift fell by 23.0% and 12.0%, respectively. Violence prevention climate ratings did not change. Safewards was associated with significant improvements in all incidents of conflict and containment, including the most severe and restrictive types.
Digby et al. 2020	Qualitative descriptive design	To determine the impact on staff experience and the management of patient aggression, sexual harm, deliberate self-harm and absconding.	n = 24 staff from the multidisciplinary team including allied health, front-line nurses, senior nurses, managers, and medical staff who had worked in the two wards during the introduction of the Psy-BOC intervention.	Inpatient		The introduction of the Psy-BOC intervention in these two adult acute psychiatry inpatient wards was associated with reduction in restrictive interventions and staff harm; however, the front-line staff believed that this was not causal. Recognition that the ward environment played a role in behaviours of concern, no access to fresh air, no private communal

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						spaces for therapeutic interactions or reducing sensory overload or giving patients space from each other. Ward staff frustrated that they did not have time for building relationships, which they saw as key to de-escalation.
Douglas-Hall and Whicher 2015	Systematic review	To compare the effects of 'as required' medication regimens with regular patterns of medication for the treatment of psychotic symptoms or behavioural disturbance thought to be secondary to psychotic illness. These regimens may be given alone or in addition to any regular psychotropic medication for the long-term treatment of schizophrenia or schizophrenia-like illnesses.	No articles were found. Number of papers = 0	Inpatient	All relevant randomised controlled trials involving hospital inpatients with schizophrenia or schizophrenia-like illnesses, comparing any regimen of medication administered for the short-term relief of behavioural disturbance, or psychotic symptoms, to be given at the discretion of ward staff ('as required', 'prn')	No evidence from within randomised trials to support this common practice. Practice is common and has implications for medication risks and reduced choice and control.

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					with fixed non-discretionary patterns of drug administration of the same drug(s). This was in addition to regular psychotropic medication for the long-term treatment of schizophrenia or schizophrenia-like illnesses where prescribed.	
Du et al. 2017	Systematic review	To investigate the effects of de-escalation techniques in the short-term management of aggression or agitation thought or likely to be due to psychosis.	N/A	N/A	Review RCTs in de-escalation of aggressive behaviour.	Of the 345 citations that were identified using the search strategies, we found only one reference to be potentially suitable for further inspection. However, after viewing the full text, it was excluded as it was not a randomised controlled trial.
Duxbury et al. 2019	Non randomised CT	Aim to reduce by 40% the incidence of harm caused to users and staff as a result of physical restraint.	Staff and patients from 14 wards across 7 Trusts (N = patient population assoc	Complex psychosocial intervention in 7 acute psychiatric	Restraint reported using standardised indicator: events per 1000	Overall 1680 restraint events (range per ward was 68–492 events). Reduction for

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			with 291 beds). Analysed routine outcome data for all patients admitted; 1680 restraint events across the intervention period.	wards with 7 control wards (non-matched). Wards were from 7 independent organisations (Trusts) in one region of the UK.	occupied bed-days. Rate determined for three time points: baseline (av 13 months) implementation (av 5 months) and adoption (av 8 months).	restraint of 22% from baseline to adoption.
Duxbury et al. 2019	Embedded within a non-randomised CT of REsTRAIN TYOURSELF, a complex team-based intervention, qualitative interviews were conducted with 36 staff post intervention.	Topic guide designed to explore experiences of implementation and barriers to change.	n = 36 staff, purposively sampled across: role, shift work, ethnicity, gender and ward.	Staff from seven wards were actively involved in a CT of the REsTRAIN YOURSELF intervention, based on the Six Core Strategies©. Interviews conducted after several months of implementation.	The CT resulted in significant reduction (-22%) of restraint rates. However, the quality of intervention fidelity was modest and varied across sites.	Eight themes re impact intersect with the 6 core strategies: local impetus/leadership for change, increased use of data informing practice, meaningful activity and events, changing understandings of people/trauma, inconsistent use of reduction tools, some changes to event debriefing, sustainability challenges.
Fletcher et al. 2017	Before-and-after design	To assess the impact of implementing Safewards on seclusion in Victorian inpatient mental health services in Australia.	n = 44 wards (intervention n=13; comparator n=31).	Inpatient	Seclusion, fidelity	Seclusion rates were reduced by 36% in Safewards trial wards by the 12-month follow-up period (incidence rate ratios (IRR) = 0.64,) but in the comparison

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						wards seclusion rates did not differ from baseline to post-trial (IRR = 1.17) or to follow-up period (IRR = 1.35). Fidelity analysis revealed a trajectory of increased use of Safewards interventions after the trial phase to follow up.
Fletcher et al. 2019	Cross-sectional post-intervention	To understand the impact of Safewards from the perspectives of the staff.	n = 103 staff	Inpatient	Survey regarding the acceptability, applicability, and impact of the Safewards model. Questions regarding suitability, frequency, and sustainability of model.	Quantitative results from the survey indicate that staff believed there to be a reduction in physical and verbal aggression since the introduction of Safewards. Staff were more positive about being part of the ward and felt safer and more connected with consumers. Qualitative data highlight four key themes regarding the model and interventions: structured and relevant; conflict prevention and reducing restrictive practices; ward culture change; and promotes recovery principles.

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Fletcher et al. 2019	Post-intervention	To describe the impact of Safewards on consumer experiences of inpatient mental health services.	n = 72 consumers	Inpatient	Quantitative and qualitative questions regarding the acceptability, applicability and impact of the Safewards model.	Participants felt more positive about their experience of an inpatient unit, safer, and more connected with nursing staff. Participants reported that the impact of verbal and physical aggression had reduced because of Safewards. Participants reported increased respect, hope, sense of community, and safety and reduced feelings of isolation. Some participants raised concerns about the language and intention of some interventions being condescending.
Forsyth et al. 2018	Semi-structured interviews analysed for themes.	Further explore staff perspectives of how the sensory room enabled service users to manage their emotional distress and arousal within a male adult acute inpatient ward, and to explore the impact of the project on the staff team.	n = 6 mental health workers participated within the study which comprised a specialist occupational therapist, three registered mental health nurses, a ward activity worker, and the	Male inpatient ward	Effectiveness of the room in supporting self-soothing from emotional distress.	Staff were overall very positive about the use of the room.

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			clinical nurse manager for the acute wards in the hospital setting.			
Goulet et al. 2018	Participatory case study: Qual—interviews with 15 (3 patients, 12 staff). Quan—comparison SR use data 6 mths before (Oct 2013 – March 2014) and 6 mths post intervention (Dec 2014 — May 2015) (195 admissions) re rates and duration of SR events.	To develop and evaluate a "post-seclusion and/or restraint review" (PSRR) intervention implemented in an acute psychiatric care unit. Three questions were posed: (1) What was the perspective of patients and staff regarding the modalities and impact of the PSRR? (2) What were the facilitating factors and the obstacles to the implementation of PSRR? (3) Was the implementation of PSRR associated with a lower prevalence of SR application or with reduced time spent in these conditions?	n = 3 inpatients; n = 12 staff	Inpatient—acute adult psych care unit specialised in 1st episode psychosis, capacity = 27 patients.	Qual—perceived (patient and staff) experiences post intervention implemented post SR event. Quant—rates and durations of SR events.	PSRR with the patient: the majority of care staff readily adopted PSRR with patients and demonstrated a high degree of assimilation of its principles. Overall both staff and patients found it a positive experience. PSRR with the healthcare team: less integrated into practice as was considered relevant only with SR, was perceived as difficult + called into question the quality of relationships between staff members (interdisciplinarity problematic?). Also was less connected with patient experiences of SR. Quant—seclusion frequency and duration reduced post intervention; frequency and duration of restraint (NS) post

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						intervention (thought because restraint rarely used anyway it was difficult to observe sig difference in 6 mths).
Haddock et al. 2019	RCT	To determine whether cognitive–behavioural suicide prevention therapy (CBSP) was feasible and acceptable, compared with treatment as usual (TAU) for inpatients who are suicidal. Secondary aims were to assess the impact of CBSP on suicidal thinking, behaviours, functioning, quality of life, service use, cost-effectiveness and psychological factors associated with suicide.	n = 71 inpatient participants recruited from across eight psychiatric wards in one National Health Trust in the UK. From 18–65 years and able to provide informed consent. Had suicidal thoughts or behaviours within three months prior to their admission.	Acute inpatient psychiatric wards	The primary outcome was feasibility and acceptability of the intervention. This included uptake and attendance at therapy sessions (a minimum of ten sessions attended was anticipated to be an acceptable dose of therapy), attrition and therapeutic alliance Working Alliance Inventory, patient and therapist complete at week 4 and at the end of treatment. Secondary	Psychological therapy can be delivered safely to patients who are suicidal although modifications are required for this setting. Findings indicate a larger, definitive trial should be conducted. No significant difference was found between the intervention and control groups for any of the secondary outcomes, although some improvements were evident for the intervention group related to suicidal ideation, suicide probability, functioning, quality of life, some symptoms of psychosis and depression.

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					outcomes measures completed at baseline, 6 weeks and 6 months. Suicidal Behaviours Questionnaire, The Beck Scale for Suicidal Ideation, The Suicide Probability Scale, The Beck Hopelessness Scale, Positive and Negative Syndrome Scale (PANSS), The Psychotic Symptom Rating Scale (PSYRATS), The Calgary Depression Scale. Personal and Social Performance, Quality of Life, The Defeat Scale, The Entrapment Scale, The Self-Concept Questionnaire,	

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					Coping in Stressful Situations Scale, EQ-5D-5L, The Use of Services Inventory.	
Hall et al. 2019	Using a descriptive qualitative design, this study undertook a series of consumer and staff focus group discussions to explore the impact of a music group activity on consumers, staff and the ward atmosphere following its implementation on an AMHIU.	What are the therapeutic benefits for consumers participating in the music group activity? What is the broader impact of the music group activity on the staff, consumer nonparticipants and the unit overall?	Staff (n = 18), consumer participants (n = 9), consumer bystanders (n = 3), group facilitators (n = 4).	Inpatient	Impact of music on inpatients in inpatient unit.	Five themes emerged from the transcripts of the focus groups' discussions: effects on mood, relationships and engagement, social connectedness and inclusion, the ward atmosphere and noise/agitation. Positive effects were shown across these areas, suggesting that the music group activity we established was beneficial for consumers and staff, and enhanced the ward atmosphere.
Hayes et al. 2015	A retrospective descriptive study by review of 38 case notes, and qualitative interviews of 47 staff within the service and those referring to the service.	To describe the characteristics of referred patients, the interventions offered to patients and referring services, and to briefly describe outcomes of patients referred during the first eight months of ISST's operation.	n = 42 nursing staff	Inpatient	Referrals and patient outcomes.	38 patients referred to ISST during 1st 8 mths of service. Most diagnosed with schizophrenia, most duration of MH >5yrs, most previously detained under Depart Health, strong lifetime

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						and recent history of violence/aggression, majority of case referrals for challenging behaviour and aggression reasons; bulk of interventions were (a) liaison with services/agencies/units, and/or (b) assessment of patient, no further work since patient not suitable for ISST; in summary, over 3/4 of patients referred to ISST were transferred to lower security, discharged or remained on the referring units following intervention by the ISST team; majority of staff report very positive interaction/experience after involvement with ISST; some potential improvements offered—make ISST interaction with staff more regular fixed time, make time scale for taking up referrals more quickly, incorporate ISST involvement in

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						staff training. Qual interviews reveal ISST/referral site setting up problematic—many inappropriate referrals made, especially in early days, referring site teams not aware of service, unclear who had final decision making veto. Qual interviews reveal ISST team setting up problematic—recommend establishing clear objectives from outset, how team should function, management structure with predefined roles and responsibilities.
Higgins et al. 2018	Phenomenological approach	To explore nursing staff perceptions of the factors impacting on their capacity to establish Safewards in acute adult inpatient wards.	n = 15 nurses	Acute mental health wards	Interview questions based on the themes of framework of capability, motivation and opportunity.	Content analysis of interview transcripts highlighted a range of factors including failure to address the difficulties encountered by some staff in engaging with Safewards interventions, lack of support from management, poor use

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						of nurse educator time, the 'language' of Safewards, high acuity on the study wards, and staff and patient turnover.
Huber et al. 2016	Comparison study (no intervention/observational)	To investigate whether the probability of completed suicide, suicide attempts and absconding differs between LDP hospitals and ODP hospitals, and to examine whether different ward types (closed, partly closed, open, and day clinic) differ in the outcomes.	n = 271,128 cases locked door policy; n = 78,446 cases open door policy.	Locked, partly locked, open and day clinic wards in 21 psychiatric hospitals .	Completed suicide, suicide attempts, absconding with return and absconding without return through routinely collected data.	Results showed no difference between hospital with and without locked wards in self-injury, suicide attempts or suicides. Absconding was lower in hospitals without locked wards. Furthermore, consumers treated on an open ward were less likely to attempt suicide or abscond.
Insua-Summerhays et al. 2018	Thematic analysis of qualitative interviews	Insua-Summerhays et al. (2018) aimed to explore and integrate the perspectives of staff (varying levels of seniority and professional backgrounds) and consumers (with a range of diagnostic and risk profiles) on what factors facilitate or impede therapeutic engagement during one-to-one observation.	n = 31 inpatient staff and n = 28 inpatients.	Inpatient—acute adult mental health wards in two hospitals in the UK.	Thematic analysis revealed three key themes: physically together but emotionally apart; companionship and therapeutic engagement; and questioning the compatibility of	The first theme captured the key barriers to therapeutic engagement during observation. Staff difficulty in reflecting on their emotional and behavioural responses to consumers whom they perceived as challenging to engage with was revealed to be a key factor maintaining "negative reciprocal

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					one-to-one observation and therapeutic engagement.	interactions" (Insua-Summerhays et al. 2018, p.554). The second theme captured ways in which barriers to engagement could be overcome. Normalising conversations, building trust and rapport through acts of compassion were stated to be key and can enable these interactions to aid in risk reduction. The third theme focused on whether the risk management aims of one-to-one observation are compatible with therapeutic engagement.
James et al. 2017	Observational	Explore the quality of implementation of a complex intervention (Safewards) on mental health wards during a cluster randomised controlled trial.	n =31 wards (Safewards n = 16; comparator n = 15)	Acute psychiatric wards.	Observations to assess fidelity.	There was substantial variation in intervention delivery between wards. We observed modifications to the intervention which were both fidelity consistent and inconsistent, and could enhance or dilute the intervention effects.

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Jimu et al. 2019	Qualitative descriptive design with semi-structured interviews.	To explore the process of PRN medication administration by mental health nurses. Objectives (1) identify factors that influence nurses' decision making about administration of PRN medication, (2) identify what, if any, therapeutic interventions used prior to administration of PRN medication, (3) identify nurses' views about how practice around PRN medication can be improved.	n = 19 mental health nurses; most were less than 5 years qualified.	3 acute inpatient units in 1 mental health service (one a high-dependency unit)	Psychiatric nurses' experiences and perspectives of PRN medication administration	Majority of participants reported administration of PRN medication followed appropriate assessment but inappropriate use of PRN was noted at times (e.g. administration to try and deflect the potential for violence or to keep patients quiet). Poor practice of using PRN as a 1st line of intervention without consideration of alternatives was highlighted especially when patient couldn't sleep or was becoming agitated. There were some interdisciplinary sensitivities around instructions regarding the use of PRN medications between doctors who prescribed them and nurses who dispensed them (e.g. participants felt undermined in their professional autonomy by explicit instructions by doctors on charts re PRN administration /

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						not consulting with nurses re changes to PRN script).
Kalagi et al. 2018	Qualitative: semi-structured interviews.	Assessing the opinions and values of relevant stakeholders with regard to the requirements for implementing open wards in psychiatric hospitals.	N = 45, including 15 psychiatrists, 15 psychiatric nurses and 15 consumers.	Open and closed acute psychiatric wards.	Interviews were focused on thematic aspects, such as personal experience with the open door policy, challenges and barriers as well as suggestions for improvement.	
Kipping et al. 2018	Pre-post	To examine the effectiveness of implementing the Safewards model with an approach that embedded co-creation principles in the staff training.	n = 108 champions, n = 259 staff.	Forensic psychiatric hospital	Attendance, perception, fidelity, resource use.	Overall, results showed high staff engagement. The average rate of attendance at the classroom-based staff champion training (n¼108) was 79% (SD¼23). Additionally, online training modules were available to all staff and were completed by 238 of 259 forensic program staff (92%). Overall, staff perceived co-creation to be a positive strategy; staff liked being asked to be

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						involved in the planning, felt their voices were heard, and believed it contributed to the success of the Safewards implementation.
Kuivalainen et al. 2017	Retrospective investigation and content analysis.	Examine the reasons for seclusion and restraint, as well as whether any de-escalation techniques were used to help patients calm down.	n = 144 instances of seclusion and restraint, accessed via files retroactively.	Inpatient (use of files)	De-escalation techniques used and the reasons for intervention.	"In general, the same de-escalation techniques were used with most patients. Most episodes of seclusion or restraint were due to threats of violence or direct violence. Individual means of self-regulation and patient guidance on these techniques are needed. Additionally, staff should be educated on a diverse range of de-escalation techniques."
Lamanna et al. 2016	This study used an interpretive theoretical framework. Fourteen inpatients including some who were admitted voluntarily and others who were detained/involuntary. Data gathering method of semi-structured interviews.	Explore and compare inpatient and clinician perspectives on the factors affecting verbal and physical aggression by psychiatric inpatients.	n = 14 inpatients; n = 10/40 nurses	Inpatient psychiatric ward within a general hospital in Toronto, Canada.	Perspectives on what influences aggression in psychiatric settings. Themes were: major life stressors, experience of illness and	Aggression is perceived to have a wide range of origins spanning personal experiences and organisational policies, suggesting a wide range of prevention strategies are needed.

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					interpersonal connections (or not) with clinicians. Physical confinement, behavioural restrictions, lack of engagement by clinicians re treatment decisions.	
Langsrud et al. 2018	Observational study using various quantitative measures.	Explore if sleep duration or night-to-night variations in sleep duration correlated with aggressive behaviour and aggressive incidents the next day and through the whole admission.	n = 40 PICU patients (50 admissions).	PICU	Duration of sleep, night-to-night variation in sleep duration, aggressive behaviours, aggressive incidents. Measures used aggressive behaviour = The Brøset Violence Checklist (BVC) and aggressive incidents = The Staff Observation Aggression Scale-Revised (SOAS-R) and sleep	The key findings were that both short duration of sleep and greater night-to-night variations in sleep duration were associated with next-day aggressive behaviour and with aggressive incidents during the whole stay at the PICU.

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					documentation journal.	
Long et al. 2015	Pre–post matched pairs design.	Assess the effectiveness of interventions designed to minimise the use of seclusion in response to risk behaviours by comparing matched patients before and after change.	Women accessing inpatient treatment (n = 38), matched into 19 pairs based on age, diagnosis and source of admission. Pairs compared women admitted prior to change, versus admission after the change.	Medium secure mental health unit for women.	Number of seclusions, risk behaviour according to OAS, IIBS, attendance at treatment sessions, seclusion questionnaire.	A significant decline in both the number of seclusions and risk behaviour post-change was complemented by improved staff ratings of institutional behaviour, increased treatment engagement and a reduction in time spent in medium security.
Maguire et al. 2018	Pre–post	To evaluate the introduction of Safewards to a forensic mental health ward to determine suitability, and to explore if changes to conflict, containment, and ward atmosphere occurred.	n = 28 patients	Forensic psychiatric hospital.	Conflict and containment events, implementation fidelity, patient cohesion (EssenCES).	Results suggested there were fewer conflict events after Safewards was introduced; however, there did not appear to be any changes in the already low use of restrictive interventions. The Safewards interventions were implemented to a high degree of fidelity, and there was indication of an increase in a positive perception of ward atmosphere, supported by themes of positive change, enhanced

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						safety, and respectful relationships.
McCauley and Smith 2018	Pre–post measures	N/A	N/A	Acute psychiatric ward: moving from locked ward to newly built ward with unlocked doors.	Measures 6 month before and after transition including: absconding, violent incidents, total hours of seclusion.	Increased absconding, decreased rates in violent incidents, increase in total hours of seclusion.
Mistler et al. 2017	Uncontrolled intervention	To examine the feasibility, usability and acceptability of a brief mindfulness meditation mobile phone app intended to reduce anger and aggression in acute psychiatric inpatients with schizophrenia, schizoaffective disorder or bipolar disorder, and a history of violence.	Patients diagnosed with schizophrenia, schizoaffective disorder or bipolar disorder, aged 18–65 years, with a recent (within the 6 months before admission) history of aggression or violence were eligible for the study.	Inpatient	The participants completed a usability questionnaire and engaged in a qualitative interview upon completion of the 7 days. In addition, measures of mindfulness, state and trait anger, and cognitive ability were administered before and after the intervention.	Of the 13 enrolled participants, 10 used the app for the 7 days of the study and completed all measures. Two additional participants used the app for fewer than 7 days and completed all measures. All participants found the app to be engaging and easy to use. Most (10/12, 83%) felt comfortable using Headspace and 83% (10/12) would recommend it to others. All participants made some effort to try the app, with 6 participants (6/12, 50%) completing the first 10 10-minute

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						"foundation" guided meditations.
Nurenberg et al. 2015	RCT	Compare equine and canine forms of AAT with standard treatments for hospitalised psychiatric patients to determine AAT effects on violent behaviour and related measures.	n = 90 patients in inpatient setting	Long-term inpatient unit inclusive of forensic patients.	Effects on violent behaviour and related measures.	AAT, and perhaps EAP uniquely, may be an effective therapeutic modality for long-term psychiatric patients at risk of violence.
Price et al. 2015	Systematic review (included 23 uncontrolled cohort studies, 12 controlled cohort studies and 3 case control studies)	To conduct a systematic review of the learning, performance and clinical safety outcomes of de-escalation techniques training.	N/A	N/A	Learning, performance and clinical safety outcomes of de-escalation techniques training	It is assumed that de-escalation techniques training will improve staff's ability to de-escalate violent and aggressive behaviour and improve safety in practice. There is currently limited evidence that this training has these effects.
Price et al. 2016	Pre–post	To explore the effect of the Safewards intervention on rates of conflict and containment in six wards of a forensic medium secure mental health service.	n = 6 wards	Medium secure forensic unit.	Both between and within-ward analysis found no statistically significant benefit of Safewards.	The effect of Safewards in this setting cannot be determined without greater staff acceptance and adherence to the interventions.
Price et al. 2018	Qualitative, semi-structured interviews and Framework Analysis.	To obtain staff descriptions of de-escalation techniques currently used in mental health settings and explore factors perceived to influence their	n = 20 ward-based clinical staff.	Inpatient unit	Staff perceptions of de-escalation techniques and what influences staff to believe	Participants described 14 techniques used in response to escalated aggression applied on a continuum between support and control.

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		implementation and effectiveness.			they are effective.	Techniques along the support-control continuum could be classified in three groups: 'support' (e.g. problem-solving, distraction, reassurance) 'non-physical control' (e.g. reprimands, deterrents, instruction) and 'physical control' (e.g. physical restraint and seclusion). Charting the reasoning staff provided for technique selection against the described behavioural outcome enabled a preliminary understanding of staff, patient and environmental influences on de-escalation success or failure. Importantly, the more coercive 'non-physical control' techniques are currently conceptualised by staff as a feature of de-escalation techniques, yet there was evidence of a link

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						between these and increased aggression/use of restrictive practices.
Proudlock et al. 2020	Practice-based service development project non-randomised, exploratory pre-test post-test design.	Examine the efficacy of Eye Movement Desensitisation and Reprocessing (EMDR) Therapy delivered to patients experiencing an acute mental health crisis to explore if by treating their background trauma, improvements could be seen in their general psychopathology and if there was a resulting decrease in their desire for suicide.	n = 57 patients experiencing mental crisis and identified as having experienced trauma.	Inpatient or community crisis treatment.	Various psychometric tests and suicidal ideation.	Patients made significant improvements across all the psychometrics, including a reduction in suicidal ideation. The majority needed less than 10 sessions and needed no onward referral for further psychological therapy.
Robson et al. 2017	Quasi-Poisson generalised additive mixed model with interrupted time analysis.	To assess the effect of implementing a comprehensive smoke-free policy on rates of physical assaults in a large UK mental health organisation.	Number of participants unspecified, study used 4550 smoking-related assaults from online clinical database.	Inpatient	The primary outcome of this study was the total number of physical assaults per month. The two secondary outcomes were patient-toward-patient and patient-toward-staff assaults.	Following the introduction of the policy, when controlling for time, seasonality, and confounders of violence, there was a significant reduction in the number of physical assaults. The authors report that there was a larger decline in patient-toward-staff violence than patient-toward-patient violence.

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Schneeberger et al. 2017	Comparison study (no intervention/observational)	Studying the effects of open vs. locked door policies on aggressive incidents.	Locked door policy = 246,195 cases; Open door policy = 68,135 cases.	Locked, partly locked and open clinic wards in 21 psychiatric hospitals,	Aggressive behaviour only, bodily harm, damage to property, seclusion and restraint through routinely collected data.	No difference between hospital with and without locked wards in aggressive behaviours, but restraint and seclusion were less likely to occur in hospitals without locked wards. Consumers treated on an open ward were less likely to display aggression and the use of seclusion and restraint was significantly lower. Of note, the risk of damage to property and bodily harm was increased on partially locked wards.
Skoretz et al. 2016	Case study review	Describe a series of cases in which clozapine provided adequate control of psychosis in women suffering schizophrenia-spectrum disorders and methylphenidate was added to reduce residual impulsive aggression and violence.	n = 3 women incarcerated in a forensic inpatient unit.	Inpatient	Effect of stimulant medications on reducing impulsive violence that remains an issue post-clozapine.	Stimulant treatment appears worthy of consideration in carefully selected patients in whom psychotic signs and symptoms have been controlled as sources of violence.
Smith et al. 2015	Analysis of inpatient files—file audit	Examine use of seclusion and restraint in the Pennsylvania state hospital system from 2001 through to 2010. Examine	12,900 anonymised records involving 1801 unique civilly committed	9 civil hospitals located in Pennsylvania state hospital system.	Rates of S/R; association between S/R and assaults.	Sig reduction in total use of containment (physical restraint, mechanical restraint, seclusion) 2.65 events

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		correlation between declining use of containment procedures and assaults by patients on other patients and staff.	individuals who were physical or mechanically restrained and secluded in the 9 civil hospitals.			per 100 days in 2002 to 1.62 events per 1000 days in 2010; each containment method also declined sig. Weak positive assoc'n between declining use of all containment procedures and patient-to-patient assaults and patient-to-staff assaults. Data also showed 1st 90 days of hospital stay, patients at greater risk of committing assaultive behaviours requiring restraint; medications were not substituted (PRNs discontinued halfway thru study period while use of containment procedures continued to decline). No evidence that change in patient characteristics potential reason for decline.
Stensgaard et al. 2018	Pre–post	To investigate whether the implementation of the Safewards model reduced the frequency of coercive measures in adult psychiatric inpatient units in	n = 31 wards	Adult psychiatric inpatient unit.	Number of coercive measures, mechanical restraint, and forced sedation.	A 2% decrease per quarter in the frequency of coercive measures and an 11% decrease per quarter in the frequency of forced

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		the region of Southern Denmark.				sedation were found after the implementation of the Safewards model.
Timberlake et al. 2020	Literature review	This article reviews literature from 2007 to 2017 to address treatment and management strategies specific for nonsuicidal self-injury in the inpatient psychiatric setting.		Adolescent and adult acute inpatient psychiatry.	The guiding question for inclusion was: "Does this article help answer the question of how to manage NSSI in the inpatient psychiatric setting?" While the goal had been to find high-calibre research studies with controlled variables to point towards best practices, there is very little research specific to both NSSI and the inpatient psychiatric setting. Because of this, studies that did not meet the criteria of	NO best practice evidence was uncovered in this review. Research shows interventions are shifting away from punitive approaches to managing NSSI. Therapeutic approaches that show promise include cognitive behaviour therapy, dialectical behaviour therapy combined with group based mentalisation as well as medications that act on the serotonergic, dopaminergic and opioid systems. Effective models of care aim to enhance therapeutic relationships with staff, providers and, most important, to encourage the internal shift towards recovery within the patient.

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					randomised control trials were included when findings could clearly be extrapolated to the inpatient setting.	
Tolisano et al. 2017	Case study	To describe a Positive Behavioural Support (PBS) model to treat aggression in forensic settings.	n = 2 case studies	Maximum security psychiatric hospital.	Potential for PBS implementation in inpatient setting. The two case studies presented resulted in reduction of aggression and in one case self-harm.	PBS can offer a positive systemic impact in forensic inpatient settings, such as providing a nonpharmacologic means to address aggression, reducing the incidences of restraint and seclusion, enhancing staff proficiency in managing challenging patient presentations, and reducing recidivism when used as part of the bridge to community re-entry.
Tully et al. 2016	Pilot study	To assess the effect of a novel intervention strategy for reduction of long-term segregation on a high secure, high dependency forensic psychiatry ward in the UK.	n = 11 patients and staff.	Inpatient forensic unit	Instances of seclusion occurring during pilot program.	"Seclusion, short-term or long-term, is highly restrictive to patients and may interfere with provision of other types of care in forensic settings, such as occupational and

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						psychological engagement."
Ulrich et al. 2018	Conceptual model proposing that aggression in psychiatric facilities may be reduced by designing the physical environment with ten evidence-grounded stress-reducing features.	To test the hypothesis that the incidence of aggressive behavior would be lower in a psychiatric hospital with wards having several of the design features in the model compared to hospitals with few of the features.	Compulsory care patients in the same diagnostic categories in the three hospitals (schizophrenia or other psychosis, bipolar disorder, personality disorder, or high suicide risk)	A newer psychiatric hospital in Sweden having wards with nine of the ten features compared to the older hospital it replaced which had only one feature and a control hospital.	Data on two clinical markers of aggressive behavior, compulsory injections and physical restraints.	Injections for aggression were reduced in a new hospital with nine features compared to hospitals with one. Restraint use declined 50% in the new hospital compared to an older facility it replaced
Vandewalle et al. 2019	Qualitative grounded theory study	To uncover and understand the actions and aims of nurses in psychiatric hospitals during their interactions with patients experiencing suicidal ideation.	n = 26 nurses	12 wards in four psychiatric hospitals	Nurse–patient interaction, including use of suicide prevention and safety planning protocols and caring empathic contact	Three interconnected elements were identified: 'managing the risk of suicide'; 'guiding patients away from suicidal ideation'; and 'searching for balance in the minefield', which contributed to the core theme of 'promoting and preserving safety and a life-oriented perspective'. Analyses also indicated that, while some nurses adhere more to a controlling and

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						directing approach when performing actions, others manage to reconcile their actions with caring contact, connection and collaboration. Linked with this, nurses' perspectives reflected a conflict between upholding protection as a predominant aim and promoting and preserving patients' autonomy and self-determination.
Vermeulen et al. 2019	Grounded theory study	To gain a deeper understanding of the differences in patients and staff perspectives in response to aggression and to explore recommendations on prevention.	n = 31 staff and patients involved in an aggressive incident.	Inpatient	Similarities and differences in staff and patients experiences of aggressive behaviour.	Patients are often capable of evaluating aggression and give recommendations on prevention shortly after the incident. Patients and nurses differ in the perceived seriousness (PS) of aggression.
Wong et al. 2015	Literature review	Describe the role of seclusion, exploring which factors contribute to its use.	N/A	Psychiatric intensive care units—with higher staff levels than open wards, and other environmental aspects	N/A	Recommendations to reduce seclusion rates: re staff characteristics—increase in staff during day, shorter shifts, review patient-staff ratio at night, improve team bonding; re patient characteristics—

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				generally in place (e.g. locked entry/exit doors, restricted opening of windows, restricted kitchen access).		apply more robust strategies for correct treatments and meds, training for staff to improve communication with unwell people; re environment—reduce unit sizes, fewer shared rooms, increase visibility between inmates, improve comfort on wards.
Yakov et al. 2018	A multidisciplinary team using a pre–post evaluation method to evaluate a program of sensory interventions. The project began with failure mode and effect analysis to explore baseline high restraint use between 4:00 p.m. and 7:00 p.m. Observed patient/staff overstimulation contributed to behavioural escalations. The team implemented sensory improvements over a 5-month period.	Explore use of sensory reduction interventions on a high-acuity inpatient milieu to reduce high assault/restraint rates.	n =20 beds, patient number varied throughout the study.	Locked PICU	Reduction in assault and restraint rates: analysis was unpaired 6-month comparisons, 1-year pre- and post-intervention.	Restraint rates dropped immediately following light and sound reduction interventions and by 72% at 11 months post-implementation. Mann-Whitney statistics for unpaired 6-month comparisons, 1-year pre- and post-intervention showed significant reductions: Assault rates reduced by 83% (median pre = 1.37, post = 0.18, U = 4, p = .02); restraint rates (median pre = 0.50, post = 0.06, U = 0, p = .002).