THE SAFEWARDS MODEL
Safewards: a new model of conflict and containment on psychiatric wards

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Abstract

Conflict (aggression, self-harm, suicide, absconding, substance/alcohol use and medication refusal) and containment (as required medication, coerced intramuscular medication, seclusion, manual restraint, special observation etc.) place patients and staff at risk of serious harm. The frequency of these events varies between wards, but there are few explanations as to why this is so, and a coherent model is lacking. This paper proposes a comprehensive explanatory model of these differences, and sketches the implications for methods for reducing risk and coercion on inpatient wards. This Safewards Model depicts six domains of originating factors: the staff team, the physical environment, outside hospital, the patient community, patient characteristics and the regulatory framework. These domains give risk to flashpoints that have the capacity to trigger conflict and/or containment. Staff interventions can modify these processes by reducing the conflict originating factors; preventing flashpoints from arising; cutting the link between flashpoint and conflict; choosing not to use containment; and by ensuring that containment use does not lead to further conflict. We describe this model systematically and in detail, and show how this can be used to devise strategies for promoting the safety of patients and staff.
Safewards: a new model of conflict and containment on psychiatric wards

Introduction

Conflict (aggression, self-harm, suicide, absconding, substance/alcohol use and medication refusal) and containment (as required medication, coerced intramuscular medication, seclusion, manual restraint, special observation etc.) are important matters for hospital management and nursing practice. Violent incidents can lead to injuries, sometimes serious, to staff or patients (Langsrud et al., 2007). Suicides by definition involve the death of a patient, and absconding is associated with suicide risk (Appleby et al., 2006). Self-harm is also injurious and its management and prevention tax nursing skills, as well as self-harm being an indicator of increased suicide risk (James et al., 2012b). The use of force and coercion that can be involved in containment arouses staff ambivalence and can result in unintended injury to patients, or spoil cooperative staff-patient relationships. Reducing the frequency and severity of these events is clearly very important for wards, the patient who reside there and the staff who work there.

The idea that different events (aggression, self-harm, absconding etc.) can be grouped together as conflict, and different management methods (as required medication, seclusion, manual restraint, etc.) grouped together as containment, is supported by two main arguments. Firstly, patients that exhibit one sort of conflict behaviour are likely to exhibit others, i.e. these behaviours cluster within patients (Bowers et al., 2000, Bowers et al., 2003d). Secondly, different conflict and containment rates cluster within wards, i.e. wards that have high rates of aggression also have high rates of absconding, or wards that have high rates of coerced intramuscular medication of patients also have high rates of special observation use (Bowers, 2009). Studies of community samples of young people have also found evidence for a common factor between different problem behaviours (Kingston et al., 2011, Cooper et al., 2003). The implication of these commonalities is that the different events and actions have common causes, and that making an attempt to delineate these in a single model is a sensible thing to do.

Wards vary significantly in their rates of conflict and containment, sometimes by a tenfold margin (Bowers, 1998, Bowers et al., 1998, Bowers, 2009). Rates also vary internationally (Bowers et al., 2005a, Nijman et al., 2005), and containment methods used in some countries are not used in others (Bowers et al., 2007d). Explanations for these differences have not often been sought or described in a systematic way. Where they have been offered, they are restricted to specific types of conflict, most often aggression (Nijman et al., 1999). The Safewards model represents our attempt to fill this gap.

The Safewards Model in simple form

The most basic form of the Safewards Model is shown in Fig. 1, which summarises the factors influencing rates of conflict and containment on wards, and explains why some wards have much more conflict and containment than others. Terms in the model have the following meanings:
**Originating domains** are categories of aspects of psychiatric wards as social and physical locations, separate from patients normal residences for the provision of 24/7 mental health care on a basis of mixed voluntary and legal coercion, which to the degree they are present or absent can influence the frequency of conflict and/or containment.

**Staff modifiers** are features of the staff as individuals or teams, or ways in which the staff act in managing the patients or their environment, initiating or responding to interactions with patients, that have the capacity to influence the frequency of conflict and/or containment.

**Patient modifiers** are ways in which patients respond and behave towards each other that have the capacity to influence the frequency of conflict and/or containment, and which are susceptible to staff influence.

**Flashpoints** are social and psychological situations arising out of features of the originating domains, signalling and preceding imminent conflict behaviours.

**Conflict** collectively names all those patient behaviours that threaten their safety or the safety of others (violence, suicide, self-harm, absconding etc.).

**Containment** collectively names all the things staff do to prevent conflict events from occurring or seek to minimize the harmful outcomes (e.g. prn medication, special observation, seclusion, etc.).

Our model indicates that there are a set of conflict originating factors that can give rise to specific flashpoints which can then trigger a conflict incident leading to containment. The model also indicates that containment is in a dynamic reciprocal relationship with conflict, and that sometimes the use of containment can itself give rise to conflict rather than successfully prevent it. Finally, the model shows that staff can influence rates of conflict and containment on their wards at every level: by reducing or eradicating the conflict originating factors; by preventing flashpoints from arising out of them; by cutting the link between the flashpoint and conflict, i.e. the flashpoint occurs but does not lead to a conflict event; by influencing the patient modifiers of those same processes; by judiciously choosing not to use containment on occasions when it would be counterproductive; and by ensuring that containment use does not lead to further conflict when it is used.
The Safewards Model expanded

The full form of the Safewards Model can be found in Fig. 2. Six domains identify the key influences over conflict and containment rates: the patient community, patient characteristics, the regulatory framework, the staff team, the physical environment and outside hospital. The outermost ring summarises the key features within those domains that can give rise to conflict and containment events. The next ring indicates the patient modifiers, what patients can do together that influences the way in which the features of the six domains give or do not give rise to conflict and containment events. The next ring indicates the staff modifiers in a similar fashion. Where arrows exist between this ring and the outermost one, they indicate that staff also have the power to directly modify or alter the features of the domains so as to reduce the risk of conflict or containment events. The innermost ring identifies the flashpoints most closely related to the domains within which they sit, flashpoints being those events or social circumstances that are most likely to trigger a conflict or containment event in the very short term. Conflict and containment are in the centre of the model, linked by a bi-directional arrow representing the fact that while conflict can trigger containment, containment use can itself trigger conflict.

Figure 2. The Safewards Model (full form)
**Staff team domain**

The internal structure of the ward is asserted by the staff team, and is composed of the rules of patient conduct, the daily and weekly routine as to what happens when and where, and the overall ideology asserted by the staff either overtly or implicitly by their behaviour as to the purpose of the ward and what it offers to patients. Also included in internal structure are the efficacy and efficiency with which that ideology is put into practice as shown by the timely and responsive way the ward as an organisation for delivering inpatient care operates. One common and highly visible signifier of an efficient organisation is overall cleanliness and tidiness, hence its inclusion here. Finally, the custom and practice amongst the staff team as to what happens when patients behave in ways incompatible with or disruptive of the internal structure also forms part of this domain, as choice of containment method is highly locally determined and very variable between wards, hospitals and countries.

The staff modifiers of the internal structure include:

1. **Staff anxiety and frustration**, or rather the degree to which staff can regulate their normal emotional responses to the disruptive and behaviour of patients that threatens the internal structure of the ward. Staff anxiety accentuates patient anxiety and self-control ability, as well as hindering the nurses ability to respond in the most effective and socially skilled way. Staff frustration and anger has the capacity to amplify patient anger, or alternatively trigger catastrophic loss of self-esteem, either of which responses can trigger further or more extreme conflict behaviours.

2. **Moral commitments**, particularly to honesty (even when it was difficult or costly), bravery (being willing to confront patients and risk violence when necessary), equality (demonstrating through a variety of ways a lack of superiority), nonjudgmentalism (eschewing large scale moral valuation of the patient), universal humanity (expression of an inclusive picture of the human race and a valuing of people despite their diversity), and individual value (an appreciation of the value of the individual person).

3. **Psychological understanding**, meaning being able to deploy a range of alternative explanations for the difficult behaviour of patients, derived from psychological models, studies, or psychotherapeutic approaches, instead of judging patients to be morally bad and worthy of punishment. These psychological understandings thus generate different ways for staff to respond to such behaviours, as well as aiding with emotional self-regulation.

4. **Teamwork and consistency** refers to the way in which the staff support each other practically and psychologically so as to aid emotional regulation, specifically in allowing ventilation of emotions 'off stage' and in sharing the burden of face to face contact with challenging patients. In addition the team produces consistency in asserting and applying the internal structure to patients, consistency over time, between nurses and between patients. This aids in legitimising the internal structure in the eyes of patients, supporting self-control, and dampening any sense of injustice and therefore anger.

5. **Technical mastery** refers to the range, depth and quantity of social and interpersonal skills and responses available to the staff in order to deal with patient challenges to the internal structure, including bringing comfort to the distressed and the de-escalation of those becoming agitated, as well as skilled exercise of power and control.
6. Positive appreciation indicates the degree to which the staff like and enjoy being with patients, affording them respect, compassion and companionship.

7. The two way arrows (Fig. 2) indicate that in the case of the staff team domain, the internal structure itself is under the control of the staff, who determine the content of the rules and routines, or who operate efficaciously or not. Therefore the domain itself can be regarded as a staff modifier.

The flashpoints for internal structure are those moments where power and influence are exercised by staff, either when denying or refusing a patients request, asking a patient to do (or stop doing) something, communicating unwelcome news to a patient about a staff decision taken elsewhere, or when ignoring patients overt or implicit requests for assistance or support.

**Physical environment domain**

The features of the physical environment influencing conflict and containment rates include its quality (better quality environments evoke greater care, are more comfortable and express greater respect for patients) and complexity (more difficult to observe environments make supervision by the staff harder, and supervision suppresses suicidal impulses and enhances self-control). Other features of the physical environment relate more directly to containment, for example whether the door to the ward is locked to patients trying to exit, whether a seclusion room is available, or a psychiatric intensive care unit.

The staff modifiers of these features include the maintenance of the environment, such as speedy repairs, frequent redecorations, regular furniture replacement, including the staff’s own respect for the physical environment and caring attention to it, as well as keeping the environment clean and tidy so that it looks its best. Other staff modifiers reflect the degree to which the physical environment can be adjusted to patient choices regarding colour and decoration, from choices of bed coverings and curtains through to the availability of posters and the potential for personalising bedrooms or bed spaces. A further element of staff modifiers are the ways in which staff adjust the way they operate so as to provide good patient supervision, from the use of checking routines through to being caringly vigilant and inquisitive. This refers to the staff taking an interest in patients, observing them, responding to indications of distress, and/or noticing their absence; being inquisitive to the degree that they will respond to unusual noises or unsatisfactory responses, and inquire into what is going on in an assertive manner.

Flashpoints include patient secrecy or solitude, spaces and times in which the lack of staff supervision allows the surfacing and acting upon of suicidal or self-harming instincts, or which allow abuse or bullying between patients. The degree of admission shock experienced by patients is also likely to be increased if the ward is in a deteriorated and unkempt condition. The point at which the exit is discovered to be locked may prompt either anger/resistance, or a slump in self-esteem and potential self-harm.
Outside hospital domain

Stressors from outside hospital largely relate to the patients friends, family or home. Contact with friends and family, if hostile, argumentative or upsetting in other ways (for example the patients absence from important events, or an expressed need for support from the patient that cannot be provided, or the conveying of bad news of some sort such as illness, death or other loss) can give rise to distress and conflict behaviours. Some relationships with family members may be toxic or extremely stressful for patients, for example demanding parents who show no understanding of the effects of mental illness, or a major relationship with a partner which is breaking down, financial and childcare agreements after divorce, or childcare difficulties, poor bonding or even abuse and the involvement of social services. Contact with friends and family can occur via phone, email, social networking channels, letters or during visits. Other stressors from outside hospital relate to home and accommodation, for example there might be requirements for home care that that patient has difficulty in coping with while in hospital, such as bills, repairs, maintenance, as well as worries about burglary during their absence. Alternatively moves of accommodation are common during an admission, and if that move is to a less desirable place in the eyes of the patient, as discharge approaches, stress and conflict behaviour is more likely.

Staff modifiers relate to acquiring and developing a fully rounded knowledge of the patients friends and family network, coupled with an appreciation of the meaning, nature and significance for the patient of his or her relationships with them. Such full knowledge allows either the effective involvement of friend and relatives in care provision, or a fully therapeutic approach to dealing with any problems or issues, potentially involving a range of different therapeutic approaches, from parenting training, through marital or couple therapy, through to family therapy provision. Active patient support in these relationships by the staff, assisting them to manage and regulate them, offers further possibilities for modification of their potential to lead to conflict behaviour on the ward.

Flashpoints include the occurrence of an argument with a friend or family member, receipt of bad news from outside hospital, a loss or disappointment on the part of the patient, a home crisis of some sort (fire, burglary, actual or threatened loss of tenure, major reminders of bills and indebtedness).

Patient community domain

Conflict arising from the patient community has its roots in contagion or discord. Contagion arises either because patients copy the disruptive or risky behaviour of each other, or because such behaviour on the part of other patients arouses anxiety and uncertainty, triggering certain conflict behaviours as coping mechanisms or defences. Alternatively the anxiety aroused may lead to more frequent or intense psychiatric symptoms which themselves give rise to further conflict behaviours. The other origin of conflict in the patient community is discord between patients, who are essentially living in close proximity with others they did not choose, and whose behaviour can be difficult, unpredictable, irritating or obnoxious.

In this case there are patient modifiers which influence whether contagion or discord actually give rise to conflict behaviour, and these parallel the staff modifiers relating
to internal structure. For example a patient's ability to regulate their own normal emotional responses of anxiety and frustration towards the behaviour of their fellow patients, their psychological understanding of such behaviour in order to avert judgement and condemnation, their technical; mastery of social skills and repertoire of graceful social responses, their moral commitments to honesty, equality, and the degree to which the patients on the ward, as a group, offer each other mutual support in tolerating the difficult behaviours of those who at any one time are extremely disruptive.

The staff modifiers are thus largely about how the staff support and help patients respond positively to each other. Role modelling of equanimity and of skilled responses to challenging behaviour potentially equips those patients who witness it with greater skills. Giving explanations about behaviour and information of psychiatric symptoms and conditions (including formal education packages) fosters patients' psychological understanding of each other. In addition, the possibility of copycat events can sometimes be prevented by the immediate removal of the means to carry them out, for example removal from the ward of all plastic bags following patient's attempted suicide using one. The presence of staff and their good relationships with patients (presence+) allows intervention at an early stage of potential arguments, with diplomatic negotiation or other action averting irritations that may otherwise later turn into violence.

As the origins of conflict in this domain are contagion and discord, flashpoints include any occasion on which patients are brought into close proximity with each other, so any assembly, joint activity or crowding on the ward prompts interactions that can be difficult, induce misunderstandings between patients, or foster the witnessing by other patients of conflict. Those misunderstandings may be further fosters if communication between patients is made more challenging by the stress of queuing or waiting, or by a high level of noise making hearing more difficult. Bullying, stealing and property damage between patients are also incendiary and likely to lead to conflict if not managed or dealt with. Finally staff and patient turnover increases anxiety and uncertainty in the patient community, making conflict more likely.

**Patient characteristics domain**

A large variety of patient characteristics can give rise to conflict behaviour, and these fall into three groups:

1. Symptoms, for example paranoia resulting in defensive aggression or absconding, specific delusions motivating irrational behaviours, auditory hallucinations such as voices instructing the patient to behave in certain ways, depression leading to suicide attempts or irritability, or use of alcohol or drugs resulting in irritability or disinhibition.
2. Personality traits, perhaps especially features of antisocial personality disorder leading to instrumental aggression, or borderline personality disorder linked to self-harm.
3. Demographic features, particularly being younger and male.

The staff modifiers of this are therefore the delivery of the most effective and efficient treatments, which may involve pharmacotherapy and/or psychotherapy. The speedy resolution of symptoms means reduced risks of conflict behaviour. One specific
version of psychotherapy would be the functional analysis of conflict behaviours the patient does exhibit, coupled with the appropriate behaviour treatments to extinguish them (Carthy, Spring 2012). Finally general nursing support and intervention in terms of responding to patient symptoms, providing reassurance, minimising the impact of those symptoms of patients’ behaviour, all provide opportunities to reduce the risk of conflict behaviours occurring.

Relevant flashpoints in this domain include exacerbations or sudden increases or expressions of severe symptoms or illness, or any occasions on which patient freedom, liberty and independence are curtailed - issues of particular salience to young men and sensitive for those with personality disorder traits. In this way the flashpoints of the patient characteristics domain link to those already described under the staff team domain.

**Regulatory framework domain**

The external structure of the ward includes those constraints on patient behaviour dictated largely from outside the ward itself. These range from the operations of the mental health act and the coerced detention of patients in hospital against their will (resulting in patient hostility, anger, aggression and absconding), through national policy on mental health care as it impinges upon patients' journey through the psychiatric system (what is or is not provided and under what conditions, treatment, accommodation, financial benefits.), to hospital policies around complaints, appeals and prosecutions of patients for assaults or other criminal behaviour.

With the exception of hospital policy, which may be influenced by the staff delivering direct care on the wards, the rest of these things are not under staff control. However the way in which they are executed can be modified by the staff. Respect for patient rights, attention to due process, the provision of accurate information particularly in relation to appeals and advocacy, expressions of hope and positive planning for the future, support in utilising the complaints process, all enhance the patient perceived legitimacy of the external structure, reducing the frustration and hopelessness that can lead to conflict behaviours. Increasing the liberty or choices of patients in areas where this is still possible may also compensate for restrictions have to be applied.

Flashpoints in this domain are those moments in which power is exercised by the psychiatric system, potentially resulting in aggressive rebellion or collapse of self-esteem and depression on the part of patients. These include the refusal to allow a patient to leave the hospital, the enforcement of treatment, and the failure of a complaint or appeal. These moments being the patient’s situation into sharp relief and can trigger conflict behaviours.

**Original contributions by the Safewards Model**

The Safewards Model seeks to explain all conflict behaviours and all containment methods collectively. The model is thus more comprehensive than separate models for aggression, absconding, etc. and acknowledges the now strongly empirically substantiated relationships between them. By depicting the bi-directional link between conflict and containment, the model shows that use of containment motivated by the
The obvious implication is that any intervention that brings about change to psychological understanding, moral commitments, emotional regulation, technical mastery, and teamwork skill, building positive appreciation and effective ward structure, is likely to contribute towards reducing the rates of conflict and containment. Two clear routes to bringing about such change are education/training, and clinical supervision of frontline workers. However these are not the only possibilities. Ward managers and qualified nurses can project these values, model these skills, informally instruct their fellow staff members, challenge each other, review the care of patients in the light of these principles. In addition, it may be possible to nudge a ward in the right direction by devising a number of tasks, protocols for doing things, or implement small procedures that edge people towards change.
An alternative approach is to focus on the identified flashpoints, finding better ways to manage them. The flashpoints are the social locations on the ward that are most likely to trigger conflict; the staff patient interactions where the ward structure is established, re-affirmed, demonstrated and instantiated. It is not that hard to find ways that nurses can clarify the structure with the patient group, perhaps reduce the number of rules, be more consistent in their application. The ways in which nurses interact with patients over these issues can be changed. To take a simple example, instead of waiting for patients to knock at the office door, requests can be pre-empted by nurses going around the ward and asking patients what they need and want in advance. Similar small changes to routines and usual practices have the capacity to make large impacts on rates of conflict and thus containment.

The connection between structure and containment is clearly mediated by aggression. Limit setting or patient requests that are denied do not by themselves lead to containment. But if a confused, frustrated and belittled patient responds with anger that is met by a combination of anxiety and irritation by the staff, use of containment may well be the eventual result. Cutting this cycle and others like it may pay a serious dividend.

**Physical environment**

That the physical environment has a part to play demonstrates that the hospital, its managers, resources and organisation are all likely to have some effect on conflict and containment rates. Ward physical environment quality, including its cleanliness, are all products of current or past managerial action. Whether the ward door is permanently locked or not is also likely to be a pan hospital managerial and policy decision, and as we have already noted, this may have gains (decreased absconding) and losses (increased aggression and self-harm).

However the staff can also act to modify the way in which the environment interacts with patient behaviour. Increased checking routines and the use of intermittent observation can compensate for ward complexity, and monitoring patients through being caringly vigilant and inquisitive can prevent suicides (Bowers et al., 2011a). Prompt requests for repairs, attention to décor, supervision of and attention to cleaning services, keeping the ward tidy, can all contribute to a better quality environment that enhances patients' self-esteem, expresses respect and can reduce absconding. If the ward is locked, staff could increase alternative choices for patients, or act in ways that enhance self-esteem or minimise the impact of the locked door.

**Outside hospital**

In order to influence the capacity of external factors to trigger safety threatening incidents on the ward, staff need to be aware of and involved in more than the patient’s life in hospital. Their financial circumstances are important and they may need help and support with the benefits system, money management, debts, or simply help with accessing resources they already have. The importance of family problems means that carers cannot be held at arms length from the ward while the patient is treated, but may need to be engaged with services and supported to resolve problems during the admission. If they are supportive and helpful, the patient might need assistance with keeping in contact with their family and friends, and discussion might
need to take place over what they perceive to be their family responsibilities. If they are worried about their accommodation, this can maybe be checked on by my community workers, or leave visits could be facilitated. Inpatient care has a tendency to focus attention, thinking and action mainly on the patient with their problems in the ward, seeing everything else as a task for community services. However such a focus neglects the important factors outside the ward that are influencing the patient behaviour on the ward, potentially in very negative ways. Thus the distal effects of what goes on outside the hospital for patients can be events that inpatient staff have to urgently deal with, and prevention can entail grappling with those initial causes, even if they lie outside the ward and hospital.

**Patient community**

The management of patient-patient interactions may be as important as the management of staff-patient interactions. Significant effort here on patient education (in technical mastery and psychological understanding), conflict resolution, role modelling and staff presence might reduce rates of conflict. Awareness of the risks of contagion could mean that preventative actions can be taken, or pre-emptive reassurance or explanations given to the patient community. In some ways the evidence on the importance of the patient community reaffirms the potential value of a modified therapeutic community approach on inpatient wards.

Management of the level and fluctuation of activity on the ward might also be a means to produce a calmer, quieter environment, with less chance to patients to be put in close contact in potentially tense and ambiguous social situations.

**Patient characteristics**

The consistent links to younger age and male gender indicate that much conflict and ensuing containment is about rebelliousness, independence and power, all of which are highly salient issues for men and for younger people. This hints that finding ways to enhance patients’ choices, freedom, and control over their circumstances might help reduce conflict and battles with the staff. Efforts to achieve a mutually respectful partnership might do much to avert conflict arising from these issues. Both point towards the potential value of a modified therapeutic community on the wards (Haigh, 2002, Mistral et al., 2002), and also indicate that any hint of authoritarianism on the part of the staff will be counterproductive and incendiary. The additional fact that a significant proportion of conflict and containment events are accounted for by a smaller proportion of patients indicates the possible efficacy of (i) staff changing their responses to patients after the first event to avoid subsequent ones, and (ii) targeted therapeutic interventions directed towards the most difficult patients.

The link of conflict and containment to illness and symptoms also carries many lessons. First and foremost amongst these is that effective and speedy treatment will reduce symptoms and conflict and containment. However treatment for psychoses does not have to mean drugs only. It can also include elements of cognitive behavioural therapy, functional analysis; social skills training and other psychotherapeutic treatments. However it does have to be admitted that few of these have been adapted for acutely ill inpatients, or have been tested for their efficacy.
amongst acute ward populations. Much more research is needed here. This being so, the origins on conflict in psychiatric symptoms still does not imply there is nothing that nurses can do. Symptoms are not expressed or even experienced in a vacuum, but in the social context of the ward. Nurses have choices over how to respond, and some responses may be better than others, some may help enhance the patients coping strategies, whereas others might increase the patients stress and hence elicit yet more symptoms (Zubin and Spring, 1977). Nurses can also influence how patients respond to each other’s symptomatic behaviour, modelling efficacy, respect, dignity-giving and de-escalatory approaches, or even directly teaching or advising other patients on what to do. They may do the same for the patient’s friends and family when they visit. In doing so they can draw upon their experience and traditional psychiatric nursing practice. That psychiatric nursing practice, expertise, creativity and skills in symptom management does exists, but would benefit from further systematic collection, codification and publication (Bowers et al., 2009b).

This is not the end of the implications of the link between symptoms and conflict and containment. In addition this means that all nurses should have expert knowledge of and be able to recognise psychotic symptoms. And this should be beyond just delusions and hallucinations, incorporating detailed understanding of a range of thought disorders (Brumbles and Meister, 2013) and their implications for care, and in depth knowledge and understanding of the cognitive difficulties experienced by psychotic patients (Zarea et al., 2013). Furthermore, recent research is establishing more and more that psychoses are the result of genetic inheritance plus childhood adversity, deprivation and abuse (Morgan et al., 2008). This makes approaches such as trauma informed care (Bloom, 1997) worthy of significant consideration.

**Regulatory framework**

On a national basis, this would seem to imply that a more liberal mental health legislation that give more rights to patients, and provides more scope for challenge and appeal, would contribute to more peaceful wards. It implies that attention to procedural justice, patient rights, information giving and the facilitation of appeals, factors more under the control of local staff, would all increase the legitimacy of the psychiatric ward, support greater patient self-esteem, dissipate and diminish anger at detention, and contribute thereby to lower conflict and containment rates. An effective, unbiased, objective, neutral and speedy complaints process for patients might also contribute towards the same ends. In addition, policy targeted at reductions in specific containment use, mandating such things as reviews, time limits for reviews and more careful authorisation procedures might have a significant impact.

In the operation of any mental health legislation, listening to patients’ points of view, hearing them out, negotiating with them, being generous, flexible and willing to compromise might also contribute to reducing conflict and containment. In a complementary way, giving autonomy to patients in other areas might compensate for the restrictions necessary for detention. Choices could be increased around on ward activities, meals, snacks, décor, furnishings, timings, all of which might address detained patients’ needs for respect and freedom. Staff may also intervene to address hopelessness and self-stigmatisation due to hospitalisation in a variety of informal and organised ways.
As an organisation, structure may be facilitated by clear and consistent policies on what patients are and are not allowed to do; and effective communication of those policies to all patients and staff. Moreover, the organisation can helpfully articulate clearly the purpose of the wards, the value base of care, and the general unpinning philosophy; all of which will enhance structure. There might be additional management activities that can ensure that the organisation supports the purpose of the wards and effectively and efficiently provides the services required for that care to be delivered on the ward, for example fast turnaround of any necessary investigations, speedy processing of referrals to additional disciplines with fast response times, administrative support, high quality continuous cleaning services, Collectively these endeavours might enhance structure and reduce conflict and containment, absent they result in an inconsistent and disrespectful service to patients.

In relation to containment, the evidence is fairly clear that usage can be restricted by policy without adverse outcome.

**Conclusion**

We have described a new model that explains the differences found between wards in their conflict and containment rates. The model introduces new concepts and describes new domains as part of the causal explanation offered. Most valuably, the Safewards Model allows the generation of a number of different interventions in order to reduce rates of conflict and containment on wards.

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Safewards: the empirical basis of the model and a critical appraisal

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Abstract

In a previous paper we described a proposed model explaining differences in rates of conflict (aggression, absconding, self-harm etc.) and containment (seclusion, special observation, manual restraint etc.). This Safewards Model identified six originating domains as sources of conflict and containment: the patient community, patient characteristics, the regulatory framework, the staff team, the physical environment and outside hospital. In this paper we assemble the evidence underpinning the inclusion of these six domains, drawing upon a wide ranging review of the literature across all conflict and containment items; our own programme of research; and reasoned thinking. There is good evidence that the six domains are important in conflict and containment generation. Specific claims about single items within those domains are more difficult to support with convincing evidence, although the weight of evidence does vary between items and between different types of conflict behaviour or containment method. The Safewards Model is supported by the evidence, but that evidence is not particularly strong. There is a dearth of rigorous outcome studies and trials in this area, and an excess of descriptive studies. The model allows the generation of a number of different interventions in order to reduce rates of conflict and containment, and properly conducted trials are now needed to test its validity.
Safewards: the empirical basis of the model and a critical appraisal

Background

In a previous paper we describe in detail a new model of conflict and containment on psychiatric wards (the Safewards Model). By conflict we mean events that threaten staff or patient safety, including verbal abuse, physical aggression to others, self-harm, suicide, absconding etc., and by containment we mean those things staff do in order to prevent these events from occurring or minimising the harmful outcomes, including the use of extra sedating medication, special observation, manual restraint, seclusion etc. Wards vary up to tenfold or more in their rates of conflict and containment. Understanding the reasons for these differences offers the opportunity of devising ways to reduce the frequency of risky and harmful events, therefore keeping patients and staff safer.

The Safewards Model identifies six originating domains which are the key influences over conflict and containment rates: the patient community, patient characteristics, the regulatory framework, the staff team, the physical environment and outside hospital. These domains naturally give rise to flashpoints which can trigger conflict and/or containment. The model describes both patient and staff modifiers that can influence the originating domains, their capacity to give rise to flashpoints, the connection between flashpoints and conflict, and the connection between conflict and containment. In this paper we describe the evidence underpinning the Safewards Model. The model applies primarily to acute psychiatric wards providing time limited care to admissions of severely and acutely mentally ill people from the community. The sources of evidence drawn upon in devising this model related primarily to this type of ward and this client group. However the model may also be applicable to some degree to forensic inpatient wards, rehabilitation wards, adolescent wards, and with some modifications to wards for children and wards for older people.

Our sources of evidence are threefold. Firstly, we draw upon a large cross topic literature review we conducted on all conflict and containment items. Previous literature reviews on conflict and containment have focused on single items, for example violence only, or absconding only. Instead we review empirical research literature across all types of conflict and containment in inpatient psychiatric settings. Given the paucity of relevant RCTs, this review encompassed all empirical research literature on inpatients, mainly in English, and published from 1960 onwards. This task was so enormous it spanned many years before completion, running from 2005-2012 and in total, 1,181 papers were included in the review. The second major source of our thinking was our own research programme into conflict and containment. This programme commenced in 1996 and continues to date. More recently it has included several very large scale studies, and has resulted in over one hundred peer reviewed publications. The third source was reasoned thinking and integrative gestalt. Given the research findings available, their diversity, age, and the methodologies used, there are very few certainties in the field. Many more studies, especially of interventions and with controls will be required before findings converge. Thus the Safewards Model seeks to integrate the most likely causes and extrapolate slightly from them.
into to produce a cohesive and comprehensive picture. The model is therefore speculative and is a tentative proposal rather than a final, comprehensive, solid, established evidence-based conclusion.

Evidence for the Safewards Model by originating domain

Staff team

Our own programme of research has consistently demonstrated the importance of structure (routine and rules for patient conduct) as an important determinant of conflict and containment rates. The City-128 study, a large scale multivariate cross sectional study, found that structure was more firmly and consistently related to conflict and containment rates than was the positive appreciation of patients (Bowers, 2009). Further analysis showed that while structure was most influenced by teamwork, attitudes to patients were influenced by structure, rather than both varying together or the reverse (Bowers et al., 2007c). The Tompkins Acute Ward (TAWS) longitudinal study also affirmed the importance of structure, as structure predicted subsequent conflict rates on wards (Bowers et al., 2007b). A study of prison officers in a specialist unit for personality disordered inmates showed that a consistent ideology and purpose had a strong influence over positive staff attitudes (Bowers et al., 2003b). During the TAWS study, a new measure of ward structure was trialled. While this did not prove to be successful, factor analysis of the questionnaires revealed dimensions relating to the cleanliness and tidiness of the ward, and to the efficient operation of the ward as a care delivering organisational unit (Bowers, 2007). The measures of structure used during the City-128 and TAWS studies were the Ward Atmosphere Scale (Moos, 1974) subscores of 'order and organisation' and 'programme clarity'. These went beyond rules and routines and included elements of ideology and of efficient organisation, and their association with conflict and containment rates (Bowers et al., 2009a, Bowers et al., 2012b) also support a broadening of the concept of structure beyond rules and routines.

There is also clear evidence that choice of containment methods for the management of conflict behaviours was culturally local: some hospitals in the UK not using seclusion (Bowers et al., 2010b, Bowers et al., 2012a); hospitals in other countries using mechanical restraint (Bowers et al., 2007d). This evidence indicated that containment choice was perhaps a matter of custom and practice, tradition, at particular locations. That body of staff 'custom and practice' could also be included under the umbrella term 'internal structure', now including: rules; routines; efficient organisation; cleanliness and tidiness; ideology/direction; and custom and practice. The way in which that internal structure produces calmer wards was identified as: the production of internal psychological clarity for patients; a greater sense of safety in relations to threatening and frightening other patients; a greater sense of predictability of the environment, reducing anxiety and defensive aggression; a greater sense of purpose in being on the ward; and greater ward stability allowing more therapeutic activities to take place (Bowers, 2002).

Support for structure as important in the generation of violence is strong in the wider literature. Three common circumstances acting as antecedents to patient violence were consistently found in the literature: denial of a patient request by the staff; staff
demand that the patient act in some way; staff request that the patient desist from some action. More than half of all papers reporting quantitative evidence on antecedents to violent behaviour cited these as a factor, and meta analysis suggested that patient-staff interaction contributes to 39% of patient violence (Bowers et al., 2011b). The same review covered quantitative and qualitative staff and patient perceptions on the nature, function and consequences of violent behaviour on the ward. That review provided strong confirmatory evidence on limit setting, staff demand and request denial as antecedents. It also showed that in the perception of staff aggression was linked to:

- Poor staff patient communication, lack of interaction skills
- Disrespectful, rude and/or authoritarian staff behaviour
- Boredom and lack of meaningful activity

Limit setting, staff demand and request denial also act as antecedents to self-harm by patients (James et al., 2012a). These factors clearly reflect the structure in terms of rules, routines and ideology (meaningful activity), moreover they show that it is the way in which staff implement and impose the ward structure that can have a critical impact on the generation or avoidance of aggressive behaviour.

Interviews of patients and staff about the causes of patient violence gave strong support to the importance of positive appreciation, emotional regulation, teamwork skill, technical mastery, moral commitments and effective structure in avoiding violent incidents (Lowe, 1992, Spokes et al., 2004, Bond and Brimblecombe, 2004, Finnema et al., 1994, Bensley et al., 1995). Ethnographic studies combining interviews and observation told a similar story, supporting the importance of positive appreciation, emotional regulation, technical mastery and effective structure. In a particularly important study, participant observation coupled with interviews of 131 staff (mainly psychiatrists and doctors) collected over 38 months on four acute and two chronic wards (Katz and Kirkland, 1990), led to the conclusion that violence was more common in wards with unclear staff functions, and activities/events or other patient-staff interactions were unpredictable. Violence was less frequent in wards with strong psychiatric leadership, clear staff roles, and events which were standardised and predictable (effective structure). Staff on peaceful wards were able to remain calm and help patients manage their own behaviour (emotional regulation). These findings were the result of an in depth ethnographic study by a research anthropologist, including working on the wards, recording observations, shadowing of psychiatrists and managers, interviews, attendance at meetings, etc.

Staff surveys, some coupled with correlations on violent incident rates, also supported the causal role of positive appreciation, emotional regulation, effective structure and technical mastery (Bowers et al., 2011b). Our own large cross sectional multivariate study (Bowers et al., 2009a) on 136 acute wards found an inverse association between structure and the incidence of physical assault (but not aggression to objects or verbal abuse). There are a number of intervention studies on violence prevention in the literature, however the design of the majority of these was weak, being before and after studies without controls, with short outcome periods and on small numbers of wards. Interventions were often complex packages and not fully described. It can be said that those interventions incorporating elements of positive appreciation, emotional regulation and effective structure tended to be successful, however most published studies had a positive outcome and publication bias must be suspected. Only two RCTs are reported in the literature, one based on risk assessment followed
by nursing action (from de-escalatory activities through to severe containment, with a positive outcome (Abderhalden et al., 2008), the other in which the intervention was a reporting system, found increases in violence in the experimental group (Arnetz and Arnetz, 2000).

Some support was also found in a literature review on ward rules (Alexander and Bowers, 2004). Although most studies had small sample sizes, several provided supporting evidence that patients were calmer and less disruptive on wards with clear rules, consistent rules and clear roles for staff (another way of stating ward ideology). Several other studies made the case that nurses interactions with patients could trigger difficult behaviour when the rule imposed was arbitrary, or the mode of imposition was threatening, insulting or critical. Other studies made a link between nurses response to rule breaking and their judgements of patients' moral responsibility, with more punitive responses evident when patients were judged to be in control of their behaviour rather than the behaviour being symptomatic of their illness, thus indicating links between nurses moral commitments and patient behaviour around rules. Alexander's subsequent PhD (Alexander, 2005) reported a detailed study of two wards and their practices, based on ethnographic observation coupled with interviews of patients and staff. She found that rule clarity, consistency and flexibility were important in producing a calm ward. Barriers to this were reported to be particularly threatening and intimidating patients; ambivalence on the part of staff to the exercise of power; poor nurse practices around rule communication and enforcement (arbitrary, unpredictable and humiliating for patients).

Review of the literature on absconding yielded no evidence supporting the importance of structure and the way that nurses instantiate it (Bowers and Stewart, 2010). In our own research, interviews of absconded patients did cite boredom and lack of meaningful activity as a reason for the abscond (Bowers et al., 1999), however most reasons for absconding were unrelated to structure. Reviews of substance and alcohol use by inpatients found no evidence relating to internal structure (Bowers and Jeffery, 2008), as did the review of inpatient suicide (Bowers et al., 2009c). A review of medication refusal also found no evidence additional to our own study showing a statistical association between good ward structure and lower rates of medication refusal, controlling for all other variables (Baker et al., 2009). Review of the literature on self-harm (James et al., 2011) did locate evidence for the importance of structure. As already stated, demands, limit setting and denials of requests were found to provoke self-harm as well as violence. In addition, several studies supported the significance of interaction skill (technical mastery), teamwork, and emotional regulation in efforts to reduce the frequency of self-harm. Our own research (City-128) has found that a larger number of patient activities, contributing to routine and ideology/purpose, were associated with lower rates of self-harm on wards (Bowers et al., 2008).

In reviews of containment, the literature on special observation (Stewart et al., 2010) yielded no evidence, as did that on mechanical restraint (Van Bogaert et al., 2012). The review of manual restraint (Stewart et al., 2009) also yielded no evidence, but our own research (City-128) showed structure was associated with lower restraint use (Bowers et al., 2012b). Similarly, the literature on PICU care (Hahn et al., 2012) provided no direct evidence, although our own research indicated that greater anxiety on the part of acute ward nurses resulted in more transfers to PICU being seen as
appropriate (Bowers et al., 2003c), thus evidencing the importance of emotional regulation. In addition our most recent analysis of the City-128 data showed the availability of a PICU, or transfers to it, had no impact on conflict rates on associated acute wards (Janssen et al., 2012). One study of seclusion found that nurses moral judgements of patients ability to control their behaviour, and therefore nurses psychological understanding of that behaviour, influenced nurses decisions to use it (Leggett and Silvester, 2003). This is evidence for the ways that nurses implement structure, particularly the moral commitments and psychological understandings that underpin their choice of response, being important factors. Three other seclusion studies indicated that nurses' anxiety and fear increased their propensity to use seclusion, thus providing evidence that nurses’ emotional regulation impacts upon their implementation of structure and the management of disturbed behaviour (Fisher, 1995, Daffern et al., 2003, Parkes, 2003). The seclusion review (Van Der Merwe et al., 2009) also located numerous studies that provided supporting evidence that staff training in interaction skill (technical mastery) could contribute to significantly reducing rates, again supporting the idea that the way in which nurses implement the structure is critically important. The evidence on teamwork and cohesiveness was more mixed, with evidence supporting both a positive and negative impact on seclusion rates. Only two studies identified by the seclusion review provided evidence specifically on ward rules, however evidence was again divided: in one the studies clarity around ward rules and expectations was part of an intervention package that led to reduced seclusion (Mistral et al., 2002), in another a similar intervention as part of another package resulted in increased seclusion (Morrison et al., 2002).

Physical environment

Different and distinct features of the physical environment of wards have a bearing on the frequency of various conflict and containment behaviours.

Having the ward permanently locked is associated with decreased absconding, showing physical security measures are important (Nijman et al., 2011); but increased aggression (Bowers et al., 2009a), self-harm (Bowers et al., 2008) and medication refusal (Baker et al., 2009) controlling for all other factors. The nature of the connection between the locked doors and conflict behaviours has been demonstrated to be the sense of imprisonment and confinement, the identification of the ward as a prison by patients, increased resentment fuelling non-cooperation, and plummeting self-esteem through social exclusion and stigmatisation (Muir-Cochrane and Bowers, 2011). A better quality physical environment is associated with decreased absconding (Nijman et al., 2011), possibly because it is more pleasant and/or expresses respect for patients and builds self-esteem.

The complexity of the ward layout also has some effect, although the evidence for this is indirect. It is known that suicides are more likely to be attempted in the private areas of the ward, such as bedrooms, bathrooms and toilets (Bowers et al., 2010a), thus the more such areas there are, the higher the risk. Higher rates of intermittent observation are associated with lower rates of self-harm (Bowers et al., 2008), a number of suicide attempts are prevented from being completed by discovery during intermittent observation (Bowers et al., 2011a), and rates of intermittent observation are in a dynamic relationship with other features affecting the capacity to observe
patients (Stewart and Bowers, 2012). Together these findings indicate a negative effect for a complex ward environment.

Finally, the physical environment can either provide for certain conflict and containment events, or make them much less available as options for patients of staff. In relation to suicide, many UK wards have significantly reduced the availability of ligature points. Inpatient suicides are most likely to be by hanging (Bowers et al., 2010a), and it is known that reducing the availability of the means of suicide is an effective strategy. The numbers of inpatient suicides have reduced in England and Wales as ligature points have been removed (Appleby et al., 2006). There is greater certainty that the availability of different types of containment has a big impact on their usage. The relative availability of seclusion rooms (Bowers et al., 2010b) and Psychiatric Intensive Care (Janssen et al., 2012) is strongly associated with how frequently they are used. Extrapolating from this, we may assume that the use of extra care/intensive care areas on the wards depends strongly on the provision of purpose designed ward rooms, and that the availability of comfort, or sensory, or de-escalation or quiet rooms might similarly shape the usage of such strategies to managed disturbed and agitated patients.

**Outside hospital**

Events and relationships outside hospital also have an impact on ward conflict and containment rates. Evidence for this exists for multiple types of conflict and containment. A range of external issues are linked to violence, including lack of access to money, unresolved family problems, distressing news from outside the hospital, visits from family members or friends, accounting for approximately 3% of violent incidents (Bowers et al., 2011b). Suicide whilst on leave has also been linked to unresolved family problems (Bowers et al., 2010a), while absconding can be motivated by the desire to see family and friends, to meet family responsibilities, to check on home accommodation (Bowers et al., 1999). A successful absconding reduction intervention incorporated action on some of these issues (Bowers et al., 2003a). Prospective discharge may also be linked to inpatient suicide, where the patient concerned is leaving for less valued accommodation (Bowers et al., 2010a). For others the prospect of being discharged represents a loss of supportive friendships from staff and patients, plus demands on their self-care skills which may have become atrophied during a hospital stay, also known as institutionalisation (Jones et al., 2008). Access to substances and or alcohol while a patient is on leave or absconded are often blamed for intoxication on the ward, and its accompanying conflict and containment sequelae (Bowers et al., 2011b). Ward security policies seek to prevent patients from importing any items with which they might harm themselves or others (Bowers et al., 2002), although there is little research evidence on their efficacy. Evidence for the influence of factors outside the hospital is sparse, and restricted to conflict; nevertheless it is persuasive.

Our self-harm review also found evidence for the impact of factors outside of hospital. One paper found that ‘external factors’ were reasons for 19.77% (n=207) incidents of self-harm, this included anniversaries of traumatic life events and seasonal events (Beasley, 1999). Another study found that family matters featured in 3.2% (n=10) of incidents, and the loss of a friend or relative in 3.2% (n=10) of incidents (Mannion, 2009). The ‘permeability’ of acute wards to influences from
outside have been identified in ethnographic research (Quirk et al., 2004, Quirk and Leliott, 2002).

**Patient community**

The role of patients and interactions within the patient community in the generation of conflict and containment has not so far received the attention it deserves. One large marker of how important this is comes from our meta-analysis of the violence literature. A quarter of violent incidents amongst inpatients are preceded by patient-patient interaction (Bowers et al., 2011b), including: physical contact; intrusion into personal psychological or physical space; reaction to sexual approach; miscommunication; victim doing something patient wanted stopped; competition; retaliation; and teased. Common amongst these situations are bullying between patients (Ireland, 2006) and stealing of each other’s property or property damage (Jones et al., 2008). Moreover, there is significant evidence for contagion between patients, with the conflict behaviour of one eliciting conflict from another. At its simplest this would be defensive aggression from a patient who is under attack from a fellow patient. However this also includes:

- Copycat activity in relations to suicide, where several case studies of repetition by fellow patients using the same method are documented in the literature (Bowers et al., 2009c).
- Absconds triggered by fear of fellow patients (Bowers et al., 1999)
- Drug or alcohol consumption from substances passed or sold from patient to patient (Phillips, 2006)

General evidence for contagion is provided by several studies, including one large study of officially reported adverse incidents showing that the occurrence of one on a ward makes another more likely within the same week (Bowers et al., 2007a, Weaver et al., 1978). In addition, many studies of the timing of violent incidents during the day or by day of the week suggest that peaks occur during activities or at times of the day when patients have to interact, for example during mealtimes (Bowers et al., 2011b). Several studies also show an association between admissions to the ward and conflict (Bowers et al., 2007a, Bowers et al., 2009a, Nijman et al., 2011). While this might reflect the disturbed behaviour of newly admitted severely ill patients, an additional mechanism might be the anxiety caused to other patients by the introduction of a new and therefore unpredictable person into the patient community.

It is not a large step to extrapolate from the staff related findings that similar factors determine the degree to which patient community factors are likely to generate conflict. For example the psychological understanding of patients for each others' behaviour, their ability to control; their own anxiety and irritation, their moral commitments and values as human beings, and their technical mastery of social interaction. In addition we know that mutual support is extremely important to inpatients (Jones et al., 2008), and this may be an additional mediator of the capacity for patient-patient interactions to give rise to conflict. Personal clinical experience suggests that patients frequently intervene as third parties to de-escalate disputes between each other or to prevent other harm arising through simply managing each other’s behaviour.

Taking this one step further still, staff can have a significant impact on how patients interact with each other. They can do so by role modelling de-escalating interventions,
making interpretations of patient’s behaviour to other patients to help expand their psychological understanding, and give information and explanations about psychiatric symptoms. What is more, the capacity for patients to copy each other’s conflict behaviours can sometimes be prevented by removal of the means to do so, and staff presence means that all these mechanisms can be deployed at the earliest stages of any arguments between patients.

**Patient characteristics**

These emerged as a consistent theme in the reviews. Several demographic features were fairly consistently associated with conflict behaviour and being subject to containment. Table 1 displays the main patient characteristics exhibiting some degree of consistent association with conflict and containment. In the table, 'no information' indicates an absence of evidence, 'insufficient information' indicates too few studies and possibly contradictory findings, and 'mixed' indicates plainly contradictory findings across a number of studies. Identifying links with diagnosis was particularly challenging, due to the different systems used and variations in the way information was repeated. However it is clear that schizophrenia is associated with conflict and containment, and to a lesser degree so are manic states. In the 'other diagnosis' category, the most frequently evidenced was personality disorder, although the evidence was, overall, weak. Apart from self-harm and suicide, where the link was positive, depressive symptoms were inversely associated with conflict or containment, when this was reported. It is also clear from the table that conflict and containment are fairly consistently associated with younger age, male gender, a diagnosis of schizophrenia, and formal detention (these factors were supported by meta analysis in the case of aggression). Indicative evidence suggests that such events are also associated with being unmarried, unemployed, and previously admitted to psychiatric hospital. Ethnic minority status was not systematically associated with conflict or containment. There was insufficient evidence to determine any pattern of associations with accommodation type outside hospital, physical health problems or disabilities, specific medications or medication types, previous criminal convictions or legal involvement.
Our specific literature review on violence and aggression showed a strong meta-analytic finding that patient symptoms were antecedents in 28% of violent incidents, indicating the importance of patients’ illness generically, rather than in relation to specific diagnoses. (Bowers et al., 2011b). The same review covered quantitative and qualitative studies of staff perceptions of the causes of aggression, also highlighting the role of patients illness and their symptoms in the generation of aggressive behaviour. Severity and duration of illness were also found to be important causal factors in a review of inpatient suicide research (Bowers et al., 2009c).

Where it is available, evidence on repeaters (patients who engage in the same conflict behaviour or who are subject to the same containment method more than once during their admission) identifies similar demographic features distinguishing them from the 'once only' patients. In comparison to once only absconders, repeaters tended to be young, male and formally detained (Bowers and Stewart, 2010). Repetitive violence was associated with male gender (Bowers et al., 2011b). However for self-harm, repetition was associated with female gender and diagnosis of personality disorder (James et al., 2011). While our literature review highlighted the importance of repeaters in contributing to rates on wards, few studies reported specific information identifying this group. Where there was evidence, findings affirmed the validity of the associations between these demographic features and conflict and containment.

**Regulatory framework**

In the systematic literature reviews, formal detention was statistically associated with violence, absconding, self-harm, coerced medication, mechanical restraint, manual restraint, psychiatric intensive care, seclusion and special observation. There were mixed results for medication refusal, no link with suicide, insufficient evidence on PRN medication, and no information on its relationship to substance/alcohol use (see Table 1). Qualitative studies revealed other connections, with absconding sometimes being prompted by refused leave, refused discharge, or a failed appeal against formal detention (Bowers et al., 1999). In addition, a locked ward door carried profound

<table>
<thead>
<tr>
<th>Conflict of containment item</th>
<th>Younger age</th>
<th>Male gender</th>
<th>Ethnic minority</th>
<th>Unmarried</th>
<th>Employment &amp; education</th>
<th>Schizophrenia</th>
<th>Affective disorder</th>
<th>Other diagnosis</th>
<th>Formal detention</th>
<th>Previous admissions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Violence</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No (education); insufficient information; unemployment</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Substance use</td>
<td>Yes</td>
<td>Yes</td>
<td>Mixed</td>
<td>No</td>
<td>No (unemployment)</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Absconding</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>Yes (unemployment)</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>No information</td>
</tr>
<tr>
<td>Medication refusal</td>
<td>Mixed</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>Yes (unemployment)</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>Mixed</td>
</tr>
<tr>
<td>Self harm</td>
<td>Yes</td>
<td>Mixed</td>
<td>No</td>
<td>Insufficient information</td>
<td>No (attempted suicide)</td>
<td>Yes</td>
<td>Yes (mania)</td>
<td>No</td>
<td>Yes</td>
<td>Insufficient evidence</td>
</tr>
<tr>
<td>Suicide</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No information</td>
</tr>
<tr>
<td>PRN medication</td>
<td>Mixed</td>
<td>Mixed</td>
<td>Yes</td>
<td>Insufficient evidence</td>
<td>No (unemployment)</td>
<td>Yes</td>
<td>Yes (mania)</td>
<td>No</td>
<td>No</td>
<td>Mixed</td>
</tr>
<tr>
<td>Coerced medication</td>
<td>Insufficient evidence</td>
<td>Insufficient evidence</td>
<td>No</td>
<td>No</td>
<td>No (unemployment)</td>
<td>Mixed</td>
<td>Insufficient information</td>
<td>Yes</td>
<td>No</td>
<td>Insufficient evidence</td>
</tr>
<tr>
<td>Mechanical Restraint</td>
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<td>No</td>
<td>No</td>
<td>Insufficient evidence</td>
<td>No (unemployment)</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>No information</td>
</tr>
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<td>Manual restraint</td>
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<td>Yes</td>
<td>No</td>
<td>No (unemployment)</td>
<td>No (unemployment)</td>
<td>Mixed</td>
<td>Insufficient information</td>
<td>Yes</td>
<td>No</td>
<td>No information</td>
</tr>
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<td>Psychiatric Intensive Care</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes (mania)</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>Insufficient evidence</td>
</tr>
<tr>
<td>Seclusion</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>Mixed</td>
<td>Mixed</td>
<td>Yes (mania)</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Mixed</td>
</tr>
<tr>
<td>Special observation</td>
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<td>Opposite (females more likely)</td>
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<td>No</td>
<td>No</td>
<td>Mixed</td>
<td>Mixed</td>
<td>Insufficient information</td>
<td>Yes</td>
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</tr>
</tbody>
</table>

Table 1 Literature review findings on conflict/containment and patient features
symbolism of detention, strengthening stigma, low self-esteem, depression, anger, frustration and perception of the ward as a prison and nurses as guards. The locked door is associated with higher rates of aggression, self-harm and medication refusal (Nijman et al., 2011), as are rates of total conflict and containment (Bowers, 2009), reaffirming the impact of formal detention. While it is known that detention rates vary considerably by country, we do lack any information on relationships between legislative systems, their features, and conflict and containment rates on wards. A few studies of aggression on Italian wards – a country with perhaps the most liberal mental health legislation of all – do show significantly lower rates; however none of these studies have sampled widely enough to support any generalisation (Bowers et al., 2005a, Grassi et al., 2006, Grassi et al., 2001).

National policies have been shown to influence containment use. Two studies have demonstrated that national policy can lead to reduction in seclusion use (Templeton et al., 1998, Smith et al., 2005). Changes in PRN prescription policies have also been shown to produce significant change (Thapa et al., 2003, Stein-Parbuty et al., 2008). Evidence on mechanical restraint is less secure, with one study suggesting policy driven reduction (Currier and Farlet-Toombs, 2002), and another showing no impact (Keski et al., 2007).

Structure has been shown by our own research programme to be associated with lower rates of conflict and containment (Bowers, 2009, Bowers et al., 2007b). Our concept of structure initially included rules for patient conduct and routines of ward life to which patients were expected to adhere (Bowers, 2002, Alexander, 2005, Alexander and Bowers, 2004). However on the basis of subsequent research, this later expanded to include the efficiency of the ward as an organisation, its cleanliness and tidiness (Bowers, 2007), and the existence of a consistent ideology, direction and purpose to the ward (Bowers et al., 2003b, Bowers, 2005, Bowers et al., 2005b). Although these things are, to a degree, in the hands of the ward staff themselves, a significant amount is determined by the hospital's procedures, policies and operational management. The formal complaints system and its effective operation, as well as the hospital policy over prosecution for assaults and property damage, may also be seen as part of the external (to the ward) regulatory framework for patient behaviour. These factors perhaps partly underpin variations in conflict and containment rates by hospitals and organisations (Bowers, 2000).

The direction of causality is contentious for both detention and structure. Detention is undoubtedly a response to risk, acute illness and unwillingness to accept treatment. However it seems likely, especially given the way that patient say they respond to the locked door (Muir-Cochrane et al., 2012) and to detention (Katsakou and Priebe, 2006) with combined feelings of anger and hopelessness, that causality runs also in the opposite direction. This is more certain with structure, where cyclical relationships with conflict over time have been found (Bowers et al., 2007b). In other words, these relationships are bi-directional.

Limitations

Despite the scale and scope of the literature review, the vast majority of studies were descriptive and the numbers of controlled trials very small indeed. This severely limited the strength of conclusions that can be drawn from it. Where trials or natural
experiments were reported, these tended to report single conflict or containment outcomes, and to be relatively untheoretical or not explicit about their underlying theory. The small numbers and lack of theory testing meant that there has been few or no confirmatory studies or accumulation of useful knowledge.

In constructing the Safewards Model, we may have overvalued our own findings and downplayed those of others. This is difficult to disentangle as the research we have done was generated in response to previously published research and targeted at evaluating previously made proposals or extending them. Our research programme was thus deliberately designed to respond to the published corpus of other research and cannot be entirely disentangled from it so that it can be neutrally evaluated on an equal footing. The reader will have to determine whether we have done a fair job.

Our reasoning may also be subject to criticism. Our largest leap was to move from knowledge of what generated conflict in interactions between staff and patients to a supposition that similar interaction issues between patients also generated conflict. We did discover from the literature review that patient-patient interaction was important, however the features of that interaction were not established by research, and we have extrapolated these from what we know of staff-patient interaction. This may be an error, as may other lesser steps in our logical reasoning.

A further criticism might be that we have been over inclusive, incorporating into our model every possible factor that may relate to higher rates of conflict and/or containment. This may indeed be so. However the evidence for most things is so poor that it is difficult to discriminate between one weakly supported factor and another in order to rule one out. We have therefore probably erred on the side of including too much, however consider that to be appropriate at this stage given the evidence available.

Others may argue that although there is empirical support for the concepts of conflict and containment, more specific causal models may be superior. It is likely, for example, that the causal elements contributing to inpatient suicide are different in certain important respects from those contributing to aggression or to drug/alcohol use; or that the balance of contributory factors (patient characteristics, regulatory framework, etc.) may be differently weighted for seclusion versus as required medication. We would accept that these arguments have some weight and validity; however our focus has been on the totality and the identification of common contributory causes. Others may seek to research specific behaviours.

However this hints at another point the Safewards Model leaves unstated, that is what is the relative strength of contribution of the different domains to rates of conflict and containment? Is the physical environment more important than influences from outside hospital, for example? We can only answer that the current state of the evidence does not allow a reply.

**Conclusion**

There is good evidence that the six domains are important in conflict and containment generation. Specific claims about single items within those domains are more difficult
to support with convincing evidence, although the weight of evidence does vary between items, and indeed between different types of conflict behaviour or containment method. The Safewards Model is supported by the evidence, but that evidence is not particularly strong. There is a dearth of rigorous outcome studies and trials in this area, and an excess of descriptive studies, but that is not unusual. Descriptive studies are both easier and much cheaper to undertake.

The Safewards Model allows the generation of a number of different interventions in order to reduce rates of conflict and containment. It is clear from the model that no single intervention or even package of interventions is going to provide a final answer. The situation is complex and varying rates of conflict/containment between wards are determined by a multitude of factors. Nevertheless, future trials should focus on utilising the identified *staff modifiers* to induce changes and reduce risk. As always, such trials need to be conducted rigorously with adequate sample sizes and the use of control groups and placebo interventions. We hope to report the outcome of such a trial in the near future.

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