

# Reducing aggressive behaviour and staff injuries: a multi-strategy approach

Tom Meehan, Kevin Fjeldsoe, Terry Stedman and Vasanthi Duraiappah

## Abstract

**Objective:** To evaluate the impact of a multi-strategy approach on the management of patient aggression and staff injury rates at a stand-alone mental health facility.

**Methods:** A multi-strategy aggression management program was developed and introduced over a 2-year period. The program had four components; staff education/training, a staff support program, risk assessment tools, and a computerised incident monitoring system. Aggressive incidents by patients, staff injuries due to patient aggression and compensation payments to staff for the 2-year period before implementation of the aggression management program were compared with the 3-year period following implementation of the program.

**Results:** There was a significant decrease in the number of staff injuries reported in the 3-year period following the implementation of the aggression management program. Although the number of aggressive incidents reported did decrease over the study period, the decrease was not statistically significant.

**Conclusions:** Despite the increasing acuity of the clients at the study facility, there was a significant decrease in staff injuries due to aggressive behaviour. The strategies implemented seem to offset the potential for violence. It is likely that the combined impact of the strategies is greater than

## What is known about the topic?

Training health care staff in the management of violent behaviour is likely to improve confidence in the management of violent individuals. Other strategies such as conducting risk assessments on potentially violent individuals and providing peer support to staff following aggressive incidents have also been found to reduce violent behaviour.

## What does this study add?

This study evaluates the combined impact of four separate but related approaches for the management of violent behaviour. It suggests that staff training on its own may have a limited role in reducing aggressive behaviour, and that the effective management of aggressive behaviour requires a comprehensive approach.

## What are the implications for practice?

There is potential benefit for health care facilities that experience aggressive behaviour by patients in taking a comprehensive approach to managing and reducing the behaviour and its impact on staff. ♦

the impact of individual strategies implemented consecutively.

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A SIGNIFICANT COMPONENT of the mental health reform agenda in Australia involves the closure or downsizing of stand alone psychiatric hospitals and the decentralisation of services to regions of identified need. Large numbers of patients (and staff) have been relocated from psychiatric hospitals to enable beds and programs to be closed. Many patients with severe disability moved to supported living arrangements in the community or to smaller residential facilities designed to meet their ongoing rehabilitation and clinical needs. Psychiatric hospitals, although reduced in size, continue to provide extended rehabilitation and clinical services for a defined population. However, a negative consequence of hospital downsiz-

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ing is the increase in aggressive behaviour in those clients who remain behind.<sup>1-3</sup>

It is clear that the downsizing of psychiatric hospitals and changes to mental health legislation have restricted access to inpatient care to the most difficult and disturbed patients in the system,<sup>4</sup> with the resultant loss of higher functioning patients, who may act as buffers for the more disturbed patients. The effects of substance misuse and non-adherence to prescribed medications add to the risk of violence in this group.<sup>5</sup> Aggressive behaviour continues to be a leading source of stress and personal injury for staff (and patients) in inpatient facilities.<sup>6-8</sup> At the organisation level, aggressive behaviour can lead to lost productivity and increases in workers compensation costs, insurance costs, and refurbishment costs when repairs to the environment become necessary.<sup>9</sup>

The prevention of such violence involves a complex interaction between the client, their social structure and their environment. Nonetheless, a large literature on the management of aggressive behaviour identifies a number of possible aggression reduction strategies. The focus of most studies has been on training staff to more effectively manage aggressive behaviour.<sup>10,11</sup> While the training of mental health staff has produced mixed outcomes,<sup>12</sup> it does seem to improve job satisfaction<sup>13</sup> and confidence in the management of violent individuals.<sup>14</sup>

Providing support to victims of patient assault through a program of peer support has also been found to reduce the frequency of violence in mental health facilities.<sup>15,16</sup> Peer support typically involves immediate and ongoing support for a staff member who has been traumatised as a result of assault.<sup>17</sup> These peer support programs have been shown to aid return to work<sup>18</sup> and decrease the symptoms associated with post-traumatic stress syndrome.<sup>19</sup>

The use of structured assessment tools to monitor the risk of violence among inpatients has also been promoted as a means of reducing aggressive behaviour.<sup>20,21</sup> The assessment of risk allows staff to make judgements about the probability of an event occurring with potentially harmful outcomes for self and others.<sup>22</sup> The identification

and monitoring of risk factors assists clinicians with treatment planning, monitoring progress, and limiting legal liability.<sup>21</sup>

Finally, the use of computerised surveillance methods to capture key information related to aggressive behaviour has also been suggested.<sup>23,24</sup> Summary reports enable managers to identify high risk clients (and units) and monitor the effectiveness of violence-reduction strategies.

Mindful of these factors, managers of one facility undergoing significant downsizing and reform implemented a number of aggression-reduction strategies. The aim of this study was to evaluate the impact of these strategies on patient aggression, staff injuries due to patient aggression and workers compensation payments. While many of the strategies described in the literature have been well validated, the efficacy of employing these approaches in combination has received little attention. This paper describes the combined impact of four strategies on the management of aggressive behaviour in a hospital undergoing significant downsizing and redevelopment.

## Methods

### **Sample and setting**

The study was carried out over a 7-year period (Jan 1999 to Dec 2005) at a stand-alone psychiatric facility in Queensland. When data collection commenced in 1999, the hospital had a total population of 335 patients. By the end of the reform process in June 2002, patient numbers had decreased significantly to 147 (a decrease of 56%). The hospital retained five clinical programs: rehabilitation (decrease in beds from 136 to 51); high security (increase in beds from 46 to 61); medium secure (increase in beds from 26 to 34); dual diagnosis (decrease in beds from 48 to 31); and adolescent (unchanged at 15 beds). The psychogeriatric program at the facility (88 beds) was completely closed when the residents were relocated to community-based facilities.<sup>25</sup> While the rehabilitation program retained a large proportion of adults with severe disability, clients in the secure programs tended to be younger and

many had schizophrenia complicated by substance abuse. The number of aggressive incidents had been increasing during the 2 years before the implementation of the intervention program. Facilities were redeveloped during the reform process.

### **Study design**

The study used a prospective, pre-test/post-test, single group design. Baseline data (aggression rates, staff injuries and workers compensation payments) were collected for the 2-year period before the implementation of the program (Jan 1999 – Dec 2000). The aggression reduction measures were implemented over the next 2-year period (Jan 2001 – Dec 2002) and a follow-up evaluation carried out over the final 3 years (Jan 2003 – Dec 2005). The study was approved by the West Moreton Health Service District Research Ethics Committee.

### **Interventions**

In mid 2000, a group of senior clinicians and researchers came together to form the Clinical Risk Management Committee. Over the next 6 months a plan, based on clinical experience and evidence from the literature, was developed to address the potential for violence as the downsizing and redevelopment process got under way. The plan focused on four primary aggression reduction strategies: staff training, peer support, risk assessment, and incident monitoring and reporting. These are briefly described below.

#### **Staff training**

One of the primary interventions to reduce aggressive behaviour involved training all staff at the facility. The training program had two components. The first involved compulsory staff attendance at a 3-day workshop on aggression-management techniques. The workshop was based on the Professional Assault Response Training (PART) program developed in the US.<sup>26</sup> The PART program involves techniques for de-escalating dangerous incidents through verbal interventions, decreasing the risk of physical injury through evasion, and decreasing injury through

manual restraint. While the hospital was already training staff in the management of aggressive behaviour before the current project, the PART program added more structure to the training. All staff were required to undertake refresher training on a regular basis.

The second component required staff to attend a series of workshops and lectures on issues related to the management of violence (eg, psychopharmacology, managing risk, legislation, symptom management, and clinical leadership). Staff were invited to assess their knowledge and confidence in each of the topics covered by the lectures and nominate the lecture or lectures they wished to attend. It was clear that many staff already had an adequate working knowledge and understanding of issues surrounding the management of aggressive behaviour. Subjecting these staff to additional classroom learning was considered unnecessary given the costs and time involved.

#### **Peer support**

Peer support is a system of providing help using the principles of respect, shared responsibility and mutual agreement on what is helpful.<sup>27</sup> The peer support program was developed from earlier work in the field of psychological debriefing.<sup>15,28</sup> The program, which was made available to all staff who experienced trauma through patient assault, was managed by a small team of staff volunteers. These volunteers were required to attend a 2-day training program in peer support principles and stress debriefing techniques in preparation for the role. Victims of assault were followed up by a member of the peer support team on three occasions: on the day of the incident, on the third post-incident day and on the tenth post-incident day. Those staff members exhibiting symptoms of post-traumatic stress disorder on the tenth day were referred to the Employee Support Service for more in-depth assessment and counselling.

#### **Risk assessment checklist**

While risk assessment has always been part of good clinical practice, the use of a standardised

risk assessment tool has been promoted in the literature as an important adjunct to the process of risk assessment and subsequent risk management<sup>21</sup> The risk assessment tool was developed by a group of senior clinicians following the method outlined by the Sainsbury Centre in the United Kingdom.<sup>22</sup> The tool contains a list of client and environmental factors that have been found in clinical practice and in the literature to be associated with aggressive behaviour. Having considered the risk factors, the clinician provides an overall rating of risk for the client. The checklist was used by staff to assess the potential for aggression in new clients admitted to the hospital or to assess the ongoing risk of aggression in clients who had been recently involved in an incident.

### ***Incident monitoring and reporting***

Monthly reports on key indicators such as aggression levels, seclusion (frequency and duration), staff sick leave and one-to-one nursing time were provided in summary form to senior staff in each unit. While this process had been in place at the hospital since 1995, data reporting techniques were enhanced during the study period. Electronic copies of summary reports replaced the previous paper versions, enabling the reports to be made available to a wider audience. Staff were encouraged to discuss the summary reports in clinical review meetings and to identify strategies to address negative trends such as increasing aggression levels.

### ***Data collection and analysis***

Data related to aggressive behaviour were collected through the incident report form completed by staff following an incident. The person completing the report provided a brief written account of the incident and then ticked a box on the form to indicate that the incident falls in the “aggressive” category. Thus, the staff present at the time determine if an incident constitutes aggressive behaviour. Carbon copies of each incident report were sent to the Service Evaluation Unit at the hospital where relevant information was entered onto a computerised database. Data related to aggressive incidents were extracted

from this computerised database and used in the evaluation. Information relating to staff injuries and workcover claims was obtained from the District Workplace Health and Safety Unit.

All data were analysed using Statistical Package for the Social Sciences (SPSS) version 10 (SPSS Inc, Chicago, Ill, USA) for Windows. We controlled for the significant decrease in patient numbers between the pre- and post-intervention periods by converting the raw figures to a ratio of occupancy. This was achieved by dividing the number of incidents each month by the average number of occupied beds in the facility for that month as suggested by Bowers.<sup>29</sup> One-way analysis of variance (ANOVA) was used to compare monthly data across the three phases of the evaluation (pre-intervention, intervention, and post-intervention).

## **RESULTS**

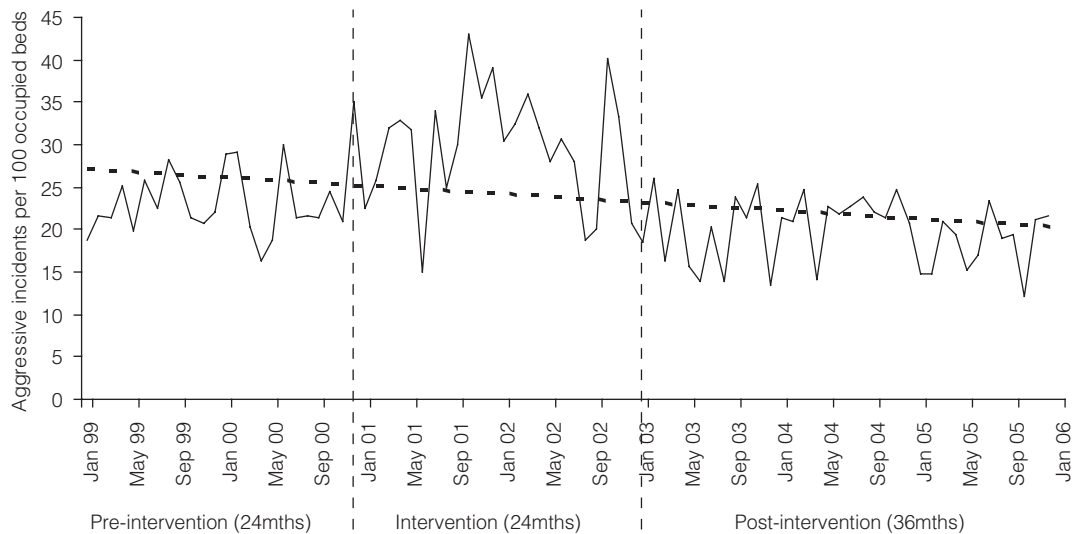
### ***Changes in aggressive behaviour by clients***

The absolute number of aggressive incidents reported over the study period decreased from 60.4 per month (SD = 15.96) in the pre-intervention period to 32.83 per month (SD = 7.83) in the post-intervention period. However, the decrease was not statistically significant when adjusted for occupied beds. While there was a decrease in incidents from a mean of 22.49/month per 100 occupied beds in the pre-intervention period to a mean of 20.43/month per 100 occupied beds in the post-intervention period, this was not significant as indicated by post hoc tests (Box 1). There was a significant increase in incidents during the intervention period (mean = 29.38 per month;  $F(2,82) = 18.99$ ;  $P < 0.0001$ ) from the levels reported during both pre-intervention (mean = 22.49 per month) and post-intervention (mean = 20.43 per month) periods.

### ***Changes in staff injuries due to aggressive behaviour***

Injuries to staff decreased from a mean of 10.70 per month (SD = 4.76) in the pre-intervention period to 3.17 (SD = 1.90) in the post intervention period. Injury rates per 100 occupied beds

### I Patient aggressive incidents per 100 occupied beds before, during and following the introduction of aggression-management strategies



(Box 2) decreased from a mean of 4.02 (SD= 1.79) in the pre-intervention period to a mean of 2.37 (SD= 1.13) in the post-intervention period ( $F(2,82) = 10.52$ ;  $P < 0.001$ ). Injury levels in the intervention period (mean= 4.31; SD= 2.38) were also significantly higher than those in the post-intervention period ( $P < 0.0001$ ).

#### **Changes in workers compensation due to aggressive behaviour**

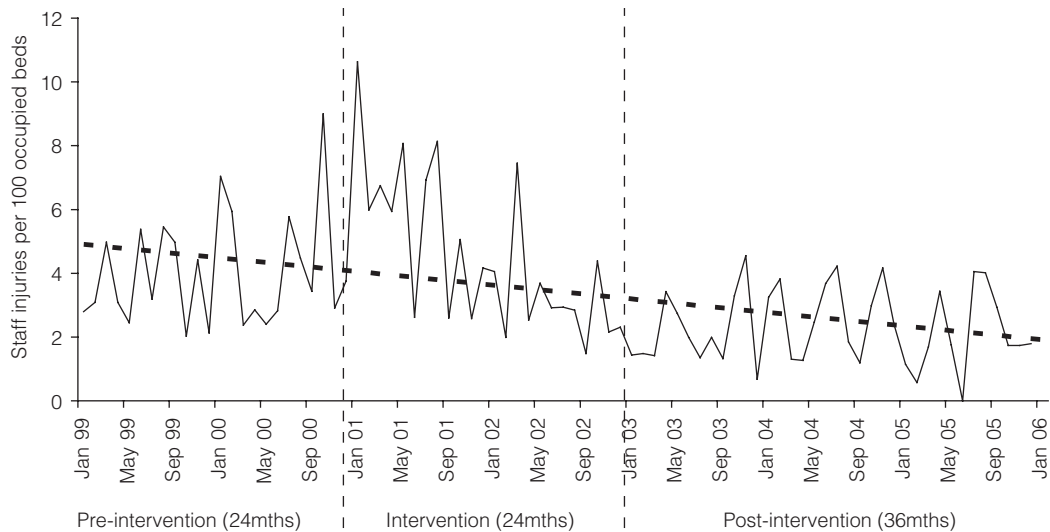
The amount of compensation paid to staff for injuries received as a result of aggressive patient behaviour was also considered. Again, payment in workers compensation was standardised to patient occupancy rates. In the pre-intervention period, A\$270 per patient was paid in workers compensation. Although this increased to A\$438 per patient during the intervention period, it decreased to A\$205 per patient in the post-intervention period.

#### **Discussion**

The present study was designed to evaluate the impact of implementing a suite of aggression-

management strategies at a large mental health facility as it underwent significant reform. The findings support previous research in that there was a significant increase in aggressive behaviour as the relocation of patients began.<sup>1,2</sup> Although aggressive behaviour rates decreased following the intervention (which coincided with the relocation process), the decrease was not significant. However, the decrease in the rate of injuries to staff pre- and post-intervention was significant. The finding suggests that the program succeeded in helping staff to reduce injuries as a consequence of aggressive behaviour. It should also be noted that while staff training had been in place before the implementation of the program, it had failed to control staff injuries (as indicated by the increasing number of injuries in the 24 months before the implementation of the program). This seems to suggest that staff training on its own may have a limited role in reducing aggressive behaviour. Although staff training must be included in any aggression-management program, it should be considered as only one of a number of possible strategies.

## 2 Staff injuries due to patient aggression per 100 occupied beds before, during and following the introduction of the aggression-management strategies.



One could argue that the significant increase in aggressive behaviour observed during the intervention phase was an artefact of the education program rather than any real increase in aggressive behaviour. Making staff more aware of what constitutes aggressive behaviour through training has been found to increase reporting of such behaviour in the period post training.<sup>30,31</sup> It could also be argued that as the effects of the training dissipated staff reported fewer incidents, and that these factors resulted in the significant decrease in aggressive behaviour in the post-intervention phase. This is unlikely, since all staff were required to undertake refresher training on a regular basis. Moreover, the increase in workers compensation suggests that the increase in aggressive behaviour was real and not a response to the increased focus on aggressive behaviour. However, workers compensation is likely to be a poor measure of aggression-management effectiveness. Payments made in the current year are usually associated with injuries sustained some years previously, and one or two large payments in a given year can significantly inflate the data for that year.

The relocation of more than half the clients from the facility is testimony to the significant

reform carried out. Before discharge, all patients underwent a rigorous assessment of functioning, and only those deemed capable of living in less supportive community-based programs were discharged. Measures of patient functioning and disability completed as part of the assessment process indicated that the most disabled clients remained at the facility. Treating larger groups of disabled clients without higher functioning patients to act as buffers may have led to the significant increase in aggressive behaviour observed in the lead up to, and during, the intervention phase of this study.<sup>1</sup> It is likely that in the absence of the intervention program the upward trend in aggressive behaviour within the facility would have continued.

Although the evaluation was divided into three separate phases (pre-intervention, intervention and post-intervention), this separation was difficult to identify in practice. For example, while the peer support program was introduced during the intervention phase, demand for the program remained low up to and into the post-intervention period. Moreover, while there was a significant decrease in aggressive behaviour in the post-intervention period, it is difficult to determine if

the full impact of the program has been realised or if this is yet to materialise. The ongoing monitoring of aggressive behaviour over the next 12 to 18 months will help to clarify this.

Finally, in the absence of a control group one needs to exercise a degree of caution in attributing the identified outcomes to the program. Outcomes such as a reduction in aggressive behaviour found in this study could be a consequence of a number of other possible factors such as improved living arrangements for patients or improvements in staff attitudes as a consequence of moving to a new environment. We could have more confidence in the findings if the study had not coincided with the downsizing of the facility. However, it was the downsizing and associated increasing levels of aggression that stimulated interest in the project and the evaluation. Our ongoing evaluation of the program may help to isolate the more effective strategies.

## Conclusion

The results of this study seem to indicate that the strategies implemented at the facility offset the potential for the increased aggression likely to arise during hospital downsizing. The fact that a number of interventions were implemented over the same period of time reduces our ability to analyse the impact of any one intervention. Staff training on its own may have a limited role in reducing aggressive behaviour. The effective management of aggressive behaviour in any health care facility, mental health or otherwise, requires an overall plan of action that includes a number of different strategies implemented simultaneously.

## Competing interests

The authors declare that they have no competing interests.

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