

Invisabeam Post Implementation Audit results

Background

Bed exit alarms are recognised as an integral tool in falls assessment and prevention programmes. They are one of many tools utilised by health professionals to assist in minimising the risk of falls and injury to patients in hospital. In 2009 a request was made by the Director of Nursing to investigate the use of bed exit alarms at MidCentral Health. As a result of the investigation a business case was developed and in August 2009 Capex funding was approved to purchase 5 Invisabeam Bed Exit Alarms to assist in falls prevention. Total funding required was \$12,625 + GST (\$2 525 per unit + GST). In addition 3 bed monitors and 2 pagers were also subsequently purchased.

From September 2009 these alarms were made available for use in the adult in patient wards. Resources were developed to support staff in the use of the equipment. In service education was also completed for nursing and allied health staff. As part of the business case a post implementation audit was conducted. Post event criteria identified were:

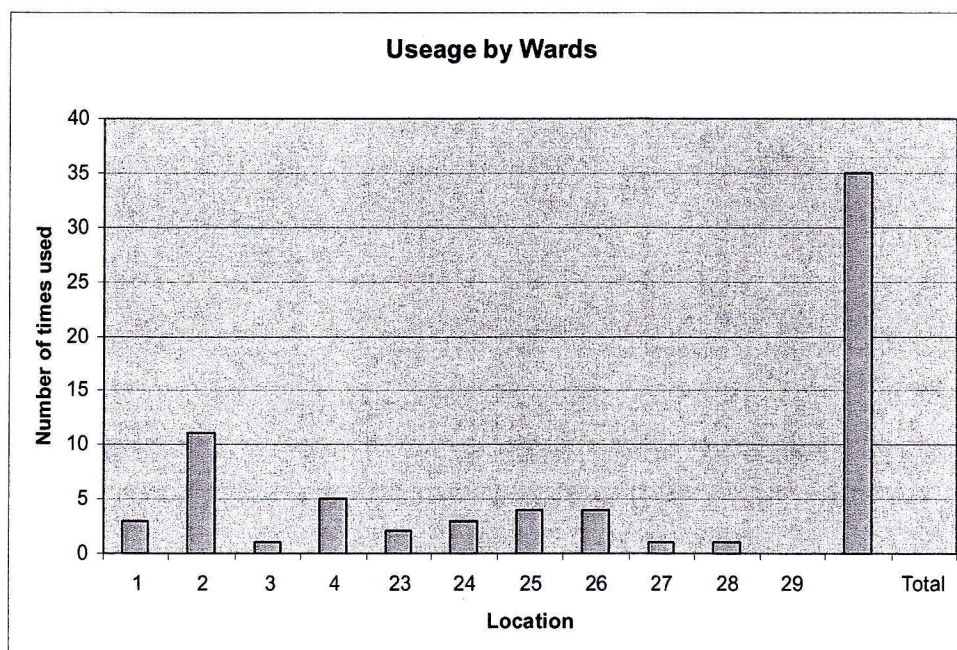
- Determine if 5 alarms are sufficient to meet demand
- Reduction in constant observations
- Reduction in clinical risk to patients

Results

In September 2010 a post implementation audit of Invisabeam usage over the past year was conducted. (See audit tool Appendix 1)

Factor 1: Determine if 5 alarms are sufficient to meet demand

An equipment request form was developed. This was attached to the MDHB procedure on the use of Invisabeam that staff fill in to request the equipment. A patient ID label is attached to the form, which allows tracking of equipment location and identification of the patient it was used for. This allowed the post implementation audit to be conducted more easily.



There were 35 requests for Invisabeam received from the period of 01 September 2009 – 30 September 2010.

On 4 occasions the requests were recorded as declined due to lack of available equipment. It has not been determined what harm occurred as a result of Invisabeam not being available. The auditors are also aware that the equipment has been taken from one patient and used on another without the

formal request process being completed that would have allowed for accurate tracking of usage. It is also noted that not all request forms were used at the beginning of the implementation of the equipment as well.

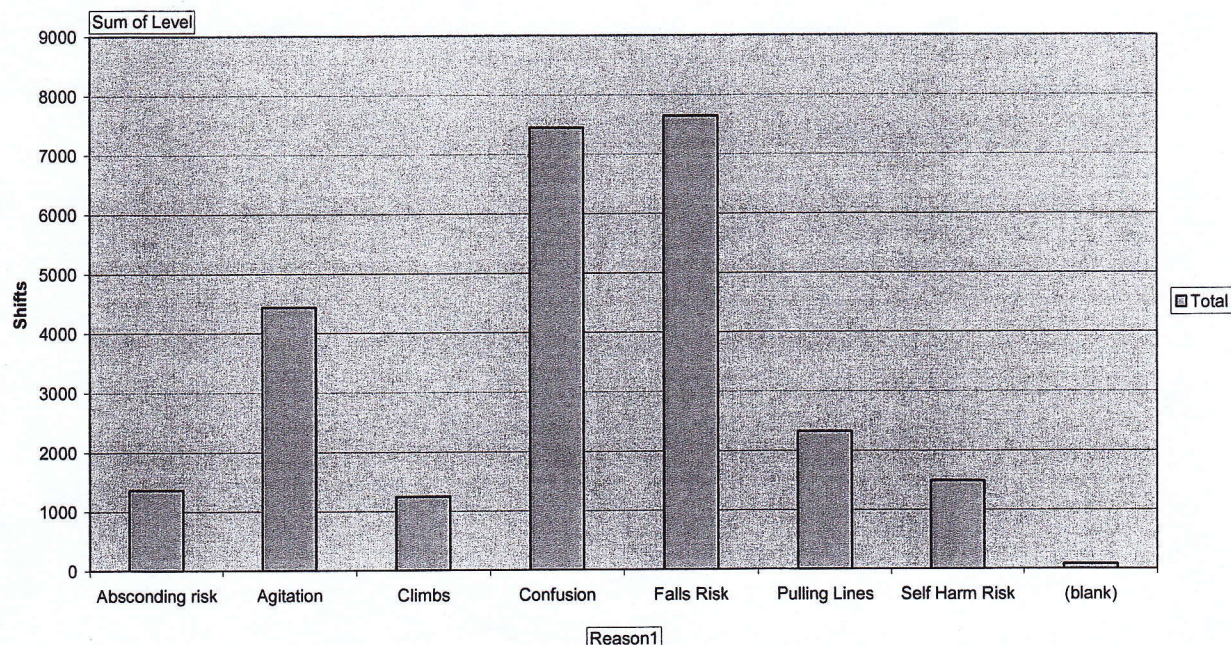
The Chair monitor was not well used initially. Feedback was that this is related to the environmental space restrictions leading to the alarm being triggered by staff. In the AT&R Wards and Ward 27 it has been successfully used with patients displaying impetuous behaviours. The chair monitor alerts the staff to a patient leaving the chair or room when they are safe to mobilise within the room, but not considered safe outside of the room. This may be due to confusion or inappropriate interactions with other patients or staff.

Factor 2: Reduction in constant observations

For the period prior to implementation of Invisabeam there were multiple requests for constant observation recorded in the trendcare database, with the 2 main reasons being cited as high falls risk and confusion.

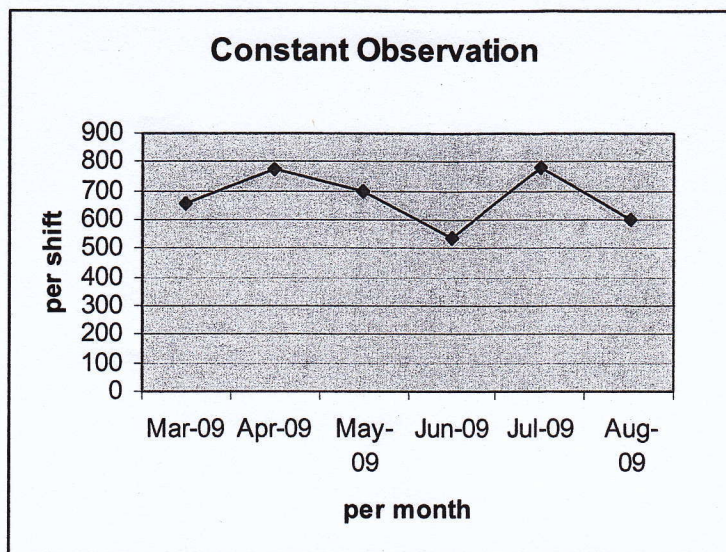
Level (All)

Reasons for Behavioural obs 2008 to 2010

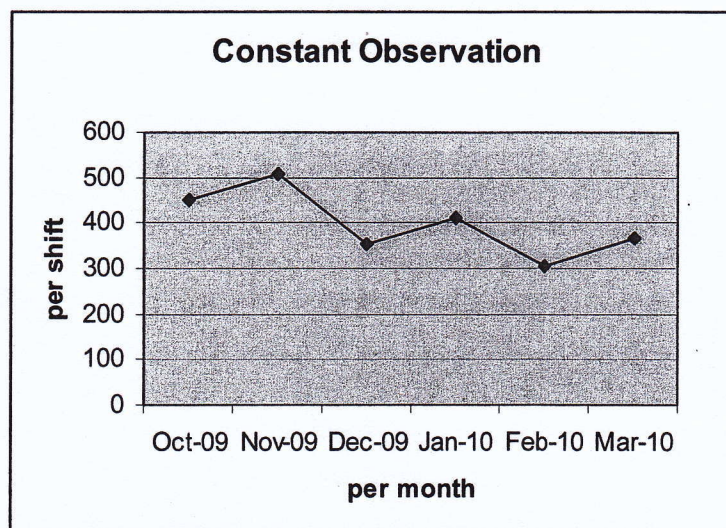


The total spent on constant observation in the year prior to implementation is currently unavailable.

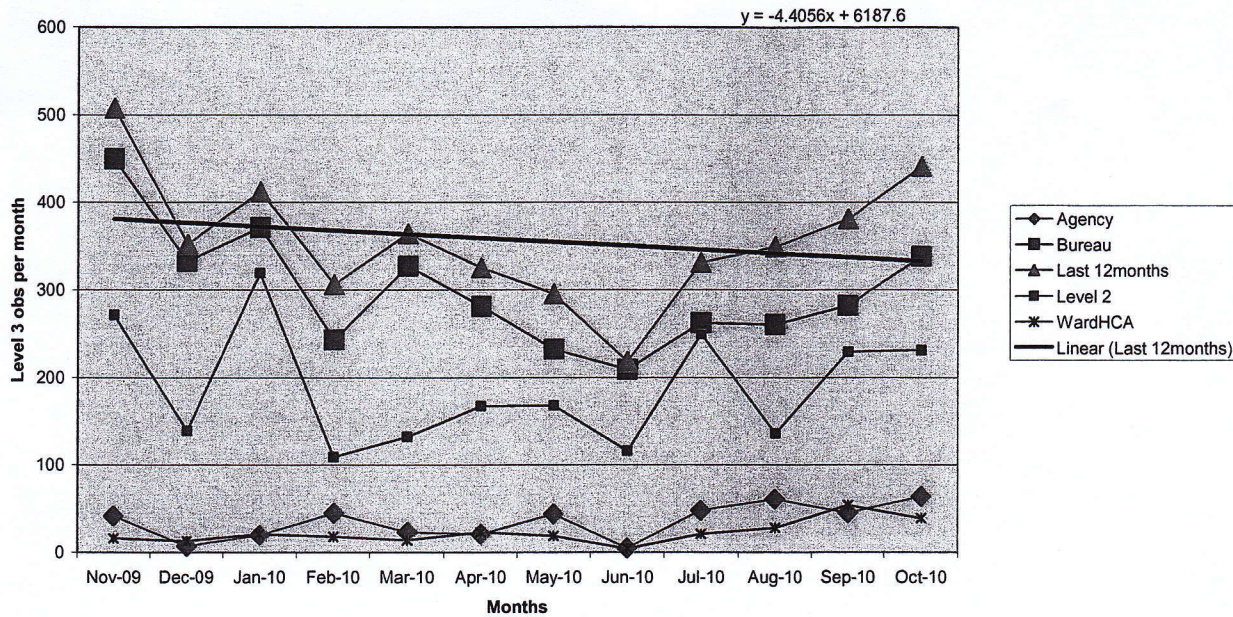
For the 6 months prior to Invisabeam being implemented a total of 4049 shift requests for constant observation were supplied.



For the 6 months post implementation of Invisabeam a total of 2394 requests for constant observation were supplied.



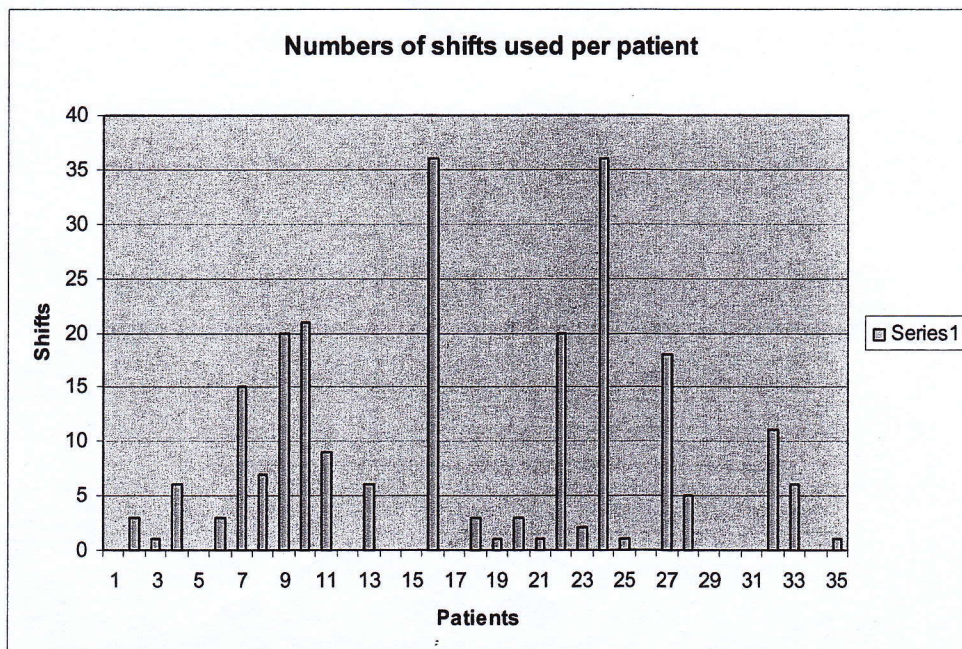
Constant Observation last 12months



The post implementation period data available demonstrates a trend towards a reduction in requests for constant observation being received.

Constant observation was only recommenced in 5 of the 35 cases that were using Invisabeam. Reasons given were change in condition for 4 cases, with 1 case stating lack of faith in equipment.

The minimum estimated cost for a safety companion providing constant observation is \$200.00 per shift. Invisabeam was used for a total of 235 shifts in the first year of implementation. It has been identified that if Invisabeam was not available constant observation would have been likely to continue for these patients. On this basis there has been a potential saving of \$ 47,000.00 in staff costs with using Invisabeam during the period audited post implementation.



Factor 3: Clinical risk to patients is reduced

There have been no recorded falls for patients that have had Invisabeam equipment insitu. All patients were assessed as having a high risk of falling and this did not occur whilst Invisabeam was in situ. The cost of a preventable injury due to a patient falling is not able to be calculated.

The use of Invisabeam has raised awareness around the importance of active interventions to ameliorate falls risk in the inpatient areas.

Recommendations

- Consider the purchase of 2 more bed exit alarms. The second model has the potential to swivel on it's base to allow for more accurate positioning of the beam that is broken when the patient mobilises unaided and sounds the alarm.
- An additional alarm could be permanently housed in the AT&R Wards where it is indicated there is a greater demand. Consideration could be given to also permanently housing one in the cohort room in Ward 25.
- Further education to embed usage by nursing staff in areas where there is a resistant to usage of the equipment.
- Further education to ensure staff are recording the use of the equipment and any discussions held with patient and family/whanau about the equipment.
- Purchase of extension cords for the call bell system to allow for easier modification of the environment eg: relocating the bed to a corner of the patients room.

Barbara Smith Nurse

Educator AT&R Inpatient Wards

MidCentral Health DHB

EQUIP 4 Criterion: 1.5.4 The incidence of falls and falls injuries is minimised through a falls management programme.

Scope: In patients allocated Invisabeam equipment as part of falls prevention programme.

Purpose: To determine if 5 alarms are sufficient to meet demand, a reduction in constant observations has occurred and if clinical risk to patients is reduced.

Indicators	Yes/No	Comments
Indicator: Falls & falls injury prevention equipment is accessible for patients following appropriate education for use.		
Equipment and environment modifications explained to patient		
Was the Bed monitor used		
Was the Chair monitor used		
Was the Pager used		
Where delivered to		
Was the environment manipulated		
Any declined requests as equipment unavailable		
Indicator: A validated risk assessment is used to identify patients at risk of falls		
Prior to use		
Falls risk factor assessment score		
Number of falls prior to using invisabeam		
Any near misses recorded		
Indicator: An individual falls management plan addresses the falls risk factors identified in the assessment.		
Whilst in use		
Nursing interventions reflect assessed risks		
Number of falls whilst invisabeam in situ		
Number of attempts to mobilise unaided		
Total of number of shifts used for		
• Day		
• Afternoon		
• Night		
Was behavioural observation(B.O.)used prior to invisabeam use		
If Yes at what level		
If Yes for how many shifts		
Was B.O. continued with the use of Invisabeam		
If Yes at what of observation		
Was constant observation re commenced		