Patient Safety in Hospitals – Can our patients engage in their own safety program?

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Epidemiology

- 86% falls unwatched (WA) Hill et al, 2009
- 80% falls unwatched, call bell used by only 3% prior to fall Hitchco et al, 2004
- US Hospital data 2011 (>165,000 falls) 85.5% of falls unassisted Stagg et al, 2014

Background

- Falls in Rehabilitation wards – higher rates than acute or surgical wards1-4
- Multi-factorial interventions reduce falls in patients with longer lengths of stay - no recommendations regarding components of programs RR 0.69, (95% CI 0.49- 0.96) Cameron et al, 2012 (Cochrane systematic review)

Locus of control

Key influences on risk taking
Risk compensation ability, Willingness to ask / delayed provision of help, Desire to test physical boundaries, Communication failure Haines et al, 2012
Health Behaviour Change

Opportunity (Physical and Social) to engage in desired actions

- Capability
- Motivation
- Opportunity
- Behaviour

Adapted from Michie et al 2011:6:42
http://www.implementationscience.com/contents/6/1/42

Unaware of the risk of falls in hospital…

I think I will fall over at some point while I am here in hospital (n=1206)
- Agree / Strongly Agree = 13%
- Disagree / Strongly Disagree = 75%

When I leave hospital (n=333)
- Older people could fall over = 261 (78%)
- I could fall over = 129 (39%)

n=125 participants 21(17%) felt that they were at risk of falling during their hospitalisation. 28 (22%) felt that they would injure themselves if they were to fall.

Haines, Hill et al 2010; Hill et al 2011; Haines and McPhail 2011

Not capable of reducing their risk...

Patients’ Belief and Perception
- Think staff will tell them
- Think staff were too busy to talk about falls prevention
- Did not think they would fall in hospital
- Falls were an accident …not preventable

Staff input
- Information provided by health professionals rarely evidence based
- Strategies with strong evidence base of effectiveness (e.g. strength and balance exercise) infrequently promoted

Lee D C A et al, Health Education Research 2013

Not capable of reducing their risk...

- N=333 at discharge
- Only 3% of strategies evidence based

Not motivated to reduce their risk...

- Discharged older patients - more likely to be engaging in exercise if they perceived they were at serious risk of injury from a fall (OR 6.1; 95% CI 4.8 – 7.8; P < .001)
- “Better for others than for me” response to 25% and 34% of strategies presented - because they did not think they were at risk of falls
- National survey - 2,498 responders, 62.7% not interested in any of 5 suggested formats to find out about falls


Patient education using the HBM

- Examine the effect of providing falls prevention education in addition to usual care for older people in hospital compared to providing usual care (n=100)


Multimedia education form

- Knowledge about falls and nature of falls
  - Multimedia increased knowledge about nature of in-hospital falls (frequency, where, when) (p<0.001)
  - DVD vs Workbook: Self perceived risk of falls
  - DVD significantly increased self-perceived risk of falls (p=0.04), Workbook did not (0.18)
  - DVD vs Workbook: Engagement in preventive strategies
  - More Confident (p=0.03) and Motivated to attempt strategies (p=0.04)

Patient Education

- Patient education – evidence of benefit when used as part of multifactorial intervention (Haines et al 2004; Ang et al, Dykes et al, 2010)
- Patient education – meta-analysis (19 studies) evidence of benefit solely or as part of multifactorial intervention (RR 0.77, 95%CI 0.69-0.87) Lee et al, HEJ 2014
Patient education for prevention of falls in hospital

Single intervention RCT (n=1206)
Complete program did not reduce falls rates but significantly reduced falls in cognitively intact sub-group

Citation: Haines T, Hill AM, Hill K, McPhail S, Oliver D, Brauer S, Hoffmann C, Beer C. Patient education to prevent falls amongst older hospital inpatients: a randomized controlled trial. Archives of Internal Medicine. 2011;171:516-524

Evaluation of Intervention

- Feedback from patients who received full program (n=401)
- RCT design: not a ward level program

Interaction Effect

- Significant interaction between intervention and participant cognition

Patient education – Ward level program

Fall rates in hospital rehabilitation units after individualised patient and staff education programmes: a pragmatic, stepped-wedge, cluster-randomised controlled trial

AM Hill, SM McPhail, N Waldron, C Etherton-Beer, K Ingram, L Flicker, M Bulsara, TP Haines
The Lancet Online: 09 April 2015, DOI: http://dx.doi.org/10.1016/S0140-6736(14)61945-0

SHRAC WA Health
Aims

- Evaluate the effectiveness of providing individualised falls prevention patient education with staff training to support the program in addition to usual care, on rates of falls in hospital rehabilitation units
- Evaluate the economic efficiency (incremental cost-effectiveness) of providing individualised patient education in this clinical context


Participants and Setting

- Diagnoses – post fracture, falls, medical and surgical diagnoses
- Multidisciplinary teams, 24 hour care
- FRAMP – falls risk assessment and management, tailored plans

Aged Care Rehabilitation Units

- Armadale, Bentley, Fremantle, Kaleeya, Osborne Park, Royal Perth, Sir Charles Gairdner, Swan Districts
- n=267 beds
- Varying size and composition

Stepped-Wedge Cluster RCT

Sites 1 and 2
Sites 3 and 4
Sites 5 and 6
Sites 7 and 8

Intervention period

Control period

8 Rehabilitation Units
Education content

- Individualised Patient Education
- Principles of Health Behaviour Change
- Principles of Adult learning

Delivered by Trained Physiotherapists who received an Online Training Program


Intervention delivery

- Educator visits x2 weekly
- Educator follow up

Feedback to staff, barriers and opportunities

Feedback to patient, barriers and opportunities

Intervention education – develop action plan

Problem Solve, Knowledge Written Action Plan Cues to act

Address barriers, Review goals

Falls, Injurious Falls
- Patients who became Fallers
- LOS
- Multimodal collection
  - Hospital Incident Reporting System
  - Medical record audit (blinded RAs)

Outcomes

- Statistical analysis
  - Generalised linear models (negative binomial, logistic, linear) with robust variance estimates
  - A priori sub-group analysis – patients cognitive impaired vs intact
  - Economic evaluation
  - Process outcomes

Hill AM et al, 2010; Silver et al, 2009
### Results

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<tr>
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<th>n=1623 Intervention</th>
<th>n=1983 Control</th>
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<tbody>
<tr>
<td>Higher Cognition group</td>
<td>914 (56.3%)</td>
<td>1016 (51.2%)</td>
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<tr>
<td>Age</td>
<td>81.4±9.3</td>
<td>82.1±8.3</td>
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<tr>
<td>Gender, female</td>
<td>999 (61.6%)</td>
<td>1211 (61.1%)</td>
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<tr>
<td>LOS rehabilitation, days</td>
<td>12 (7-21)</td>
<td>11 (6-20)</td>
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<tr>
<td>Admission FIM, mean±SD</td>
<td>Cognition 25.2±7.4</td>
<td>24.3±7.6</td>
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<tr>
<td></td>
<td>Motor 49.5±17.4</td>
<td>51.7±17.6</td>
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#### Falls Rates

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<th>Unadjusted ratio (robust 95% CI)</th>
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<td>Falls / Injurious falls / Fallers</td>
<td>Falls / 1000 Patient Days (95% CI)</td>
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<td>Falls / Injurious falls / Fractures</td>
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<td>Falls, % group</td>
<td>Adjusted ratio, (robust 95% CI), p-value</td>
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*Data clustered by site, LOS as exposure variable, analyses adjusted for step time period in trial, age, gender, admission FIM, number of comorbidities, historical monthly site-specific falls rates from previous year.
Misunderstanding between patient and staff is likely to result in fall

Mutual understanding between patient and staff is likely to prevent a fall

Training to deliver program

- FTE part-time – median time 45m per patient
- Online webinars, pdf workbooks – freely accessible
- Requires approximately 6 hours training
- Health professionals with training in gerontology and falls prevention in general to facilitate effective delivery
- Ward process – being developed

For resources - Go to Safe Recovery training program on page below

Case example – Mobility consistency

Patient – Educated about use of walking frame, sets plan
Staff – Consistent update and adherence to care plan
Agreed level of assistance – Affirm patient
Aid in reach especially if patient is independent

Barriers
- Noted at 1 site some nurses felt that they “did it already” – we educate patients at every shift and not sure why they would need any more…..
- Nurse attitude to independence – clashes with patients
- Conflicts between staff – confuses patients, patient needs to be part of team

“…Now when I update a chart I explain my thinking… discuss it with the patient…”
“…Always ask for help from nurse without feeling embarrassed…”
“…Use my frame even for transferring and ask the physio why I need…”
“...good to have a dedicated person…”
Discussion

- Reduction in injurious falls
- Effective for whole unit – earlier trial effective in subgroup
- Ward level delivery effective means of provision – provided in units where structured falls program in place
- Tested in clinical setting and training program established – fidelity of intervention

Conclusion

- Individualised patient education provided as part of ward clinical care reduces falls and injurious falls in older patients undergoing rehabilitation
- Hospitals should incorporate this type of education into falls prevention programs that are delivered in rehabilitation units

References