Exercise Interventions - a key strategy to prevent falls in a long stay mental health facility

Prepared and presented by
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Macquarie Hospital

- 180 bed psychiatric teaching hospital in the Northern Sydney Local Health District (NSLHD)

- Chronic and acute care in a range of facilities from closed to open ward environments and onsite independent group cottages

- Recovery and rehabilitation services for a range of people with mental illness from geriatric to drug and alcohol dual diagnosis

- On and off ward programs catering for a wide range of activities, skills and training, vocational, educational, recreational and physical health

- Length of stay varies from long term residential to short stay recovery
Falls at Macquarie Hospital

<table>
<thead>
<tr>
<th>Year</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
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<tr>
<td></td>
<td>159</td>
<td>172</td>
<td>173</td>
<td>178</td>
<td>207</td>
<td>171</td>
<td>191</td>
<td>156</td>
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</tbody>
</table>

2013 figures

Long Term Recovery Units: (n=130) 83%

- Unit 1 n=78
- Unit 2 n=23
- Unit 3 n=22
- Unit 4 n=7
Unit 2

- 20 beds

- Closed ward – some patients attend day program area, leave is usually escorted

- Primary diagnosis is Schizophrenia or schizoaffective disorder - chronic and treatment resistant.

- Co-morbidities – obesity, diabetes, epilepsy, autism, cerebral palsy

- Illness and side effects of medications cause lethargy, sedation low motivation

- Patients are sedentary ++++, poor activity tolerance
Exercise Interventions as a key strategy to prevent falls in a long stay mental health facility

Multi-disciplinary Project

• Accredited Exercise Physiologist.

• Exercise Physiology Students on clinical placement from University of Sydney

• 3 x nurses (EN’s)
A program for staff who work with less active and frailer older adults with an increased risk of falls.

TO ORDER
Healthy Lifestyle
Northern Sydney Local Health District
Health Promotion Service
(02) 8877 5321
Cost $40 for DVD and Manual + postage
(Additional Staying Active Staying Safe DVD $17)
Participants

21 patients received a baseline assessment

11 completed all 3 assessments (Baseline, 16 weeks, 32 weeks)

Reasons for drop out - moving wards, refused, poor mental health status
Assessments

- Timed up and go – Dynamic balance and agility
- Tandem stance – Static balance
- Sit to stand 5 reps – lower limb strength and balance
- Alternate step – lateral stability
Sessions
3 x week

Monday
Wednesday
Friday
Seated or standing
Upper and lower body
Exercise to music
Equipment
Stretches
## Assessment Results

### Table 1: Descriptive statistics for the 5 rep Sit to Stand test over time (in seconds)

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time 1 Sit to Stand</td>
<td>11</td>
<td>17.99</td>
<td>6.61</td>
</tr>
<tr>
<td>Time 2 Sit to Stand</td>
<td>11</td>
<td>14.42</td>
<td>5.60</td>
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<tr>
<td>Time 3 Sit to Stand</td>
<td>11</td>
<td>13.02</td>
<td>5.44</td>
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</tbody>
</table>

### Table 2: Descriptive statistics for the Timed up and Go test over time (in seconds)

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time 1 Timed Up &amp; Go</td>
<td>11</td>
<td>12.50</td>
<td>5.43</td>
</tr>
<tr>
<td>Time 2 Timed Up &amp; Go</td>
<td>11</td>
<td>10.66</td>
<td>5.09</td>
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<tr>
<td>Time 3 Timed Up &amp; Go</td>
<td>11</td>
<td>9.22</td>
<td>4.77</td>
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Assessment Results

Table 3: Descriptive statistics for the Alternate step test test over time (in seconds)

<table>
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<th>N</th>
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<th>Std. Deviation</th>
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</thead>
<tbody>
<tr>
<td>Time 1 Alternate Step</td>
<td>9</td>
<td>14.89</td>
<td>4.10</td>
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<tr>
<td>Time 2 Alternate Step</td>
<td>9</td>
<td>9.38</td>
<td>2.50</td>
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<tr>
<td>Time 3 Alternate Step</td>
<td>9</td>
<td>11.56</td>
<td>.91</td>
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</table>

Table 4: Frequencies for tandem stance

<table>
<thead>
<tr>
<th></th>
<th>Time 1</th>
<th></th>
<th>Time 2</th>
<th></th>
<th>Time 3</th>
<th></th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>Percent</td>
<td>Frequency</td>
<td>Percent</td>
<td>Frequency</td>
<td>Percent</td>
</tr>
<tr>
<td>Yes</td>
<td>5</td>
<td>45.5</td>
<td>9</td>
<td>81.8</td>
<td>9</td>
<td>81.8</td>
</tr>
<tr>
<td>No</td>
<td>6</td>
<td>54.5</td>
<td>2</td>
<td>18.2</td>
<td>2</td>
<td>18.2</td>
</tr>
<tr>
<td>Total</td>
<td>11</td>
<td>100</td>
<td>11</td>
<td>100</td>
<td>11</td>
<td>100</td>
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</tbody>
</table>
The number of Falls by reason for 2013

- Epilepsy/Seizure: 10
- Poor Balance: 4
- Psychotic Episode: 2
- Unknown: 6

REASON FOR FALLS 2013

CAUSE

# OF FALLS
Falls 2012 -2014

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
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<tbody>
<tr>
<td>Falls 2012</td>
<td>11</td>
<td>1.00</td>
<td>1.84</td>
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<tr>
<td>Falls 2013</td>
<td>11</td>
<td>1.00</td>
<td>1.55</td>
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<tr>
<td>Falls 2014</td>
<td>11</td>
<td>0.45</td>
<td>0.69</td>
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Where to....

• Project commenced on 2 other long term recovery wards in June
• Approx another 30 participants
• Trained another 10 staff in Basic Steps
• Long term goal for formal research project within NSLHD.
Acknowledgements

- Wellbeing Unit at Macquarie Hospital
- Nursing staff at Unit 2
- Sydney University Exercise Physiology students
- Basic Steps program – NSLHD Health Promotion Dept.
- Research Centre Macquarie Hospital
- Macquarie Hospital Falls Committee