Implementing a Structured Cognitive Orientation Program on an Inpatient Rehabilitation Unit: A Pilot Project

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Royal Park Campus
Inpatient Rehabilitation Unit
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- Literature Review
- Development of Program
- Pilot Program
  - Logistics
  - Patient demographics
  - Outcome data
- Reflections
- Where to next?
- Questions?
Background

• Program previously running at Kingston Centre – Monash Health
• Orientation frequently used as measurement of impairment/recovery
• Clinical Guidelines for Stroke Management
• This makes sense!
Literature Review

• Search Question: Does providing a structured orientation program improve patient orientation post-ABI on an inpatient rehabilitation ward?

• Databases: Medline, CINAHL, PsychINFO
### Search Terms:

<table>
<thead>
<tr>
<th>Orientation</th>
<th>ABI</th>
<th>Neurorehabilitation</th>
<th>Inpatient</th>
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<tbody>
<tr>
<td>Awareness</td>
<td>TBI</td>
<td>Rehabilitation</td>
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<tr>
<td>Recognition (psychological)</td>
<td>Stroke</td>
<td>Cognitive rehabilitation</td>
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<tr>
<td>Brain injury</td>
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<td>Neuropsychological rehabilitation</td>
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<tr>
<td>Cerebrovascular accident</td>
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</table>
• Search results:
  – Yielded 122 articles
  – Titles & abstracts read – excluded 92 articles (not relevant to search question)
  – 30 articles included for review, however due to inability to obtain 1 article via library database, only 29 reviewed.
  – Further 2 articles identified from reference lists of obtained articles – total 31 articles for review.
  – Further 26 articles excluded following reading full text due to irrelevance to search question.
  – Leaving 5 articles for review.
• Cognitive impairments post-stroke have been found to be highly correlated with poorer inpatient rehabilitation outcomes – including:
  – Reduced participation in ADLs
  – Impaired social functioning
  – Institutionalization
  – Higher levels of disability (both immediately and 1-year post-discharge)
  – Longer hospital admissions
  – Higher chance of placement in residential care vs. home
Summary of Results

• Orientation status in particular has been found to predict poorer rehabilitation outcomes:
  – Reduced participation in ADLs
  – Higher level of disability on discharge
  – Poorer health status 1-year post discharge
  – Longer IPR admission
Summary of Results

• Despite these findings, few studies have investigated whether targeting orientation in a structured way improves orientation and/or rehabilitation outcomes.

• One study reported the findings of a single case study which suggested that a meta-cognitive strategy training technique was effective in an inpatient rehabilitation setting, and improved rehabilitation engagement. (Skidmore et al, 2011)
What next?

- Anecdotally, impaired orientation was observed to negatively impact on patient participation and rehabilitation outcomes on IPR ward at RMH.

- Based on this, the evidence found in the literature review, and recommendations from the Clinical Guidelines for Stroke Management, we felt that a structured approach to improving orientation was indicated on IPR.
Program Development
Call for expressions of interest from the multidisciplinary IPR team to join a working party to develop a pilot program.

Representatives from: SP, OT, neuropsychology, dietetics, nursing, and medical.

Working party met roughly monthly to develop program.
Aims

• to improve orientation to place, time, and daily schedule for cognitively impaired patients;
• to improve engagement in an intensive rehabilitation program;
• to improve rehabilitation outcomes…?
Outcome Measures

• Orientation:
  – The Orientation Log (O-Log) (UAB Spain Rehabilitation Centre) (Jackson & Novack, 1994)
# The Orientation Log (O-Log)

**Key:**
- 1: Multiple choice, phonemic cuing
- 2: Logical cuing
- 3: Spontaneous/free recall
- 4: Unable, incorrect, inappropriate

<table>
<thead>
<tr>
<th>Patient Name:</th>
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<tr>
<td><strong>Date</strong></td>
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<td><strong>Time</strong></td>
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<td><strong>City</strong></td>
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<td><strong>Kind of Place</strong></td>
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<td><strong>Name of Hospital</strong></td>
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<td><strong>Month</strong></td>
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<td><strong>Year</strong></td>
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<td><strong>Day of Week</strong></td>
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<tr>
<td><strong>Clock Time</strong></td>
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<tr>
<td><strong>Etiology/Event</strong></td>
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<td><strong>Pathology Deficits</strong></td>
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<th>20</th>
<th>15</th>
<th>10</th>
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</table>
Outcome Measures

• Engagement in a rehabilitation program:
  – Pittsburgh Rehabilitation Participation Scale (PRPS) (Lenze et al, 2004)
<table>
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<tr>
<th>Session Number</th>
<th>Date</th>
<th>Therapist Initials</th>
<th>None</th>
<th>Poor</th>
<th>Fair</th>
<th>Good</th>
<th>Very good</th>
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**NOTE.** Available as an electronic file from the corresponding author by request.  
*This version is specifically for PT. For the OT form, “exercises” should be replaced by “activities.”
Outcome Measures

• Other measures:
  – Staff survey
  – Program coordinator reflections
Logistics

• Who would run the program?
• Who would be responsible for coordinating referrals?
• How often/what time would it be run?
• Who would identify which strategies were appropriate for each patient?
• What would be the criteria for discharge from the program?
• How many patients feasible to have in program at one time?
Resources

• Calendar
• Clock (on wall in all rooms)
• ‘Your Team’ profile
• Picture based/day to a page timetable
• Location sign
• Whiteboard
• Diary
• iPad/iPhone
## Calendar
### 2015

<table>
<thead>
<tr>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
<th>Saturday</th>
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<td>30</td>
<td>31</td>
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</table>
### ‘Your Team’ profile

**Your Team**

| Nurse: __________________________ |

<table>
<thead>
<tr>
<th>Doctors</th>
<th>Speech Pathologist</th>
<th>Physiotherapist</th>
<th>Occupational Therapist</th>
<th>Social Worker</th>
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<tbody>
<tr>
<td><img src="image1.png" alt="Louisa" /></td>
<td><img src="image2.png" alt="Jean" /></td>
<td><img src="image3.png" alt="Nicole" /></td>
<td><img src="image4.png" alt="Tessa" /></td>
<td><img src="image5.png" alt="Amy" /></td>
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<tr>
<td><img src="image6.png" alt="Michaela" /></td>
<td><img src="image7.png" alt="Jon-Paul" /></td>
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</tbody>
</table>

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The Royal Melbourne Hospital

*Passion for Caring - Achieving the Extraordinary*
# Simple Timetable

**Monday 19\(^{th}\) January**

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
<th>Image</th>
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</thead>
<tbody>
<tr>
<td>8:00-8:30</td>
<td>Daily Orientation</td>
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<td>8:30-9:00</td>
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<tr>
<td>9:00-10:00</td>
<td>Physiotherapy Balance Group</td>
<td></td>
</tr>
<tr>
<td>10:00-11:00</td>
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<td>11:00-12:00</td>
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<tr>
<td>12:00-1:00</td>
<td>Lunch</td>
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<td>1:00-2:00</td>
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<tr>
<td>2:00-3:00</td>
<td>Activity Arcade</td>
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</tr>
<tr>
<td>3:00-4:00</td>
<td>Occupational Therapy</td>
<td></td>
</tr>
</tbody>
</table>
Location Sign

You are at:
The Royal Melbourne Hospital

Royal Park Campus

You are in the
Inpatient Rehabilitation Unit

Bed:
# Referrals

**Orientation Program**

**Referral Form**

Name: ____________________________  UR: _______________________

Diagnosis: ________________________  EDD: _______________________

Team: ____________________________  Referring Therapist: _____________

**Members of Therapy Team:**

PT: ____________________________  OT: ____________________________

OT: ____________________________  Speech: _______________________

SP: ____________________________  Neuropsych: ___________________

PT: ____________________________  Social Work: __________________

**Patient has impairments in:**

Orientation: Time □  Person □  Place □

Memory □  Language □

Behavior □  Other □

Attention □  All of the above □

**Communication skills:**

Language: _______________________

Reading/Writing: _______________________

Speech: _______________________

Hearing: Impaired/Unimpaired  Hearing Aids: yes/no

Vision: Impaired/Unimpaired  Glasses: yes/no

**Mobility status:**

______________________________

**Patient would benefit from the following strategies:**

Calendar □  Clock/Watch □

Easy-to-read/picture-based timetable □  ‘Your Team’ pictures □

Diary □  iPad/iPhone reminders □

Location sign □

Other: _______________________

[Logo and text: Melbourne Health, Royal Melbourne Hospital, VIDRE, Passion for Caring - Achieving the Extraordinary]
Pilot Program
Logistics

• 4 week program
• Daily orientation sessions
• Pre- and post- program and weekly probe measurements taken (O-Log and PRPS)
• Patients recruited from neurorehabilitation teams only
• Discharged from program when either: full marks on O-Log, discharge from hospital, or end of 4x week pilot (however note no patients participated for full 4x week pilot)
## Patient Demographics

<table>
<thead>
<tr>
<th>Name</th>
<th>Age</th>
<th>Diagnosis</th>
<th>Length of IPR admission</th>
<th># days in orientation program</th>
<th>Reason for Discharge</th>
</tr>
</thead>
<tbody>
<tr>
<td>LM</td>
<td>90</td>
<td>L) PCA territory infarct</td>
<td>23 days</td>
<td>7</td>
<td>Discharged home</td>
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<tr>
<td>GB</td>
<td>66</td>
<td>bilateral frontal contusions with bilateral temporal bone fractures, SAH and SDH sustained on 18/12/14 post-fall.</td>
<td>16 days</td>
<td>4</td>
<td>Fully oriented. Independent with strategy use</td>
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<tr>
<td>JT</td>
<td>72</td>
<td>R) MCA territory infarct</td>
<td>54 days</td>
<td>12</td>
<td>Discharged to residential care</td>
</tr>
</tbody>
</table>
Patient LM
(90y.o female, L) PCA infarct)

- **Primary impairment/s**: memory, orientation to place, time

- **Strategies used**: calendar, clock, location sign, ‘your team’ profile, picture-based timetable

- **Complicating factors**: significant R) homonymous hemianopia (+/- inattention), anxiety
Patient GB
(66y.o male, bilateral frontal contusions, SAH & SDH post-fall)

- **Primary impairment/s:** attention, orientation to time and place

- **Strategies used:** calendar, clock, location sign, ‘your team’ pictures, regular (week to a page) timetable.

- **Complicating factors:** aphasia, ?PTA
Patient JT
(72y.o male, R) MCA infarct)

• **Primary impairment/s:** memory, attention, orientation to time/place

• **Strategies used:** calendar, clock, location sign

• **Complicating factors:** severe L) visual neglect
Results – O-Log

Pre-Program

Post-Program

LM
GB
JT
## Results – PRPS

### PARTICIPATION:

<table>
<thead>
<tr>
<th>Session Number</th>
<th>Date</th>
<th>Therapist Initials</th>
<th>None</th>
<th>Poor</th>
<th>Fair</th>
<th>Good</th>
<th>Very good</th>
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Results – PRPS
LM
Results – PRPS JT
Results – PRPS GB
Results – Staff Survey

• On completion of pilot program, a survey was sent to all nursing, medical and allied health staff in the neurorehabilitation teams, as well as the AHA involved in assisting to run program

• Received 9 responses
Results – Staff Survey

• 44.4% (4/9) of respondents reported observing an improvement in their patients’ participation in therapy during or after the pilot program.
  – “Patients expressed an interest in their daily schedule, and were very responsive to improving their outcomes. Mostly I noticed the patients’ willingness to participate in the daily orientation, and how positive they felt after the task.”
  – “Pt demonstrated improved sustained attention, enabling him to be more engaged in therapy sessions”
Results – Staff Survey

• 44.4% (4/9) of respondents reported observing an improvement in their patients’ orientation during or after the pilot program.
  – “One patient in particular would remind me each afternoon that she will see me in the morning. Another patient would look at the wall clock before I commenced the orientation. This showed me that they understood what was going on. A very positive sign.”
  – “Demonstrated improved orientation to time, place, and situation.”
37.5% (3/9) of respondents reported observing changes in any aspect of their patients’ functioning during or after the pilot program.

- “Generally they would ask about the scheduled therapies and would remind staff of the session times so that they were not late. This indicated their awareness of scheduled appointments.”
- “Pt demonstrated overall improved executive function”
Results – Staff Survey

• 62.5% (5/9) of respondents found the referral system easy to use. (3/9 responded N/A)
• 15.5% (1/9) of respondents found the outcome measures easy to administer. (7/9 responded N/A)
• 100% of respondents who participated in running the sessions found these easy to run (note only 1 other person aside from project coordinator)
• 37.5% (3/9) of respondents reported they were aware of the orientation strategies their patients were using (2/9 responded N/A).
Results – Staff Survey

• 87.5% (7/9) of respondents reported that based on the pilot program, they felt the orientation program was beneficial for the IPR ward (1/9 responded N/A)
  – “Any program which aims to improve cognition and increase therapy time should be encouraged”
  – “I had limited interaction with patients involved in the process, but observed that it helped facilitate patient centred discussions in weekly case conferences”
Results – Staff Survey

- Further comments or recommended changes:
  - “I think the signage used would be beneficial for everyone in terms of having their bed/room number within their view in case friends/family want to visit, and to remind them of their primary therapists and nurse, as it's easy to forget that sometimes.”
Program Coordinator: Reflections

- Referrals
- Resources
- Logistics
Program Coordinator: Subjective Impressions

- Limited findings based on outcome measures
- Likely reason for lack of prior research
- Subjective/perceived improvements not reflected in outcome data
- Other benefits to patients
- Encouragement/prompt to staff
Summary

- Evidence suggests that impaired orientation is highly correlated with poorer rehabilitation outcomes.
- Limited research into impact of directly targeting orientation on rehabilitation outcomes.
- Outcome data from pilot program don’t show any clear benefits or negatives.
- Subjective impressions from staff are that the program did benefit patients, and generally improved orientation and participation in rehabilitation program.
Summary

• Staff on the IPR ward feel that it is worth continuing to run the orientation program.
• Further consideration regarding program logistics, referrals and resources will be required prior to implementing ongoing program.
Where to next?

- More research!
- Further research into literature behind approaches to treatment of disorientation/cognitive impairment
- Funding?
Questions?

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References


References

