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Outcomes of rehabilitation for reconditioning: falls, frailty, care service requirements - what does the national data tell us?

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Publication Details

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Abstract
Presentation Outline

• What is AROC?

• AROC data collection

• AROC reconditioning impairment specific data:

• Question -> does the data show any association between level of frailty, falls or weight loss and outcomes (LOS, function, services required)?

Keywords
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Outcomes of rehabilitation for reconditioning: falls, frailty, care service requirements - what does the national data tell us?
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Presentation Outline

- What is AROC?
- AROC data collection
- AROC reconditioning impairment specific data:
- Question -> does the data show any association between level of frailty, falls or weight loss and outcomes (LOS, function, services required)?
What is AROC?

Australasian Rehabilitation Outcomes Centre

- National rehabilitation clinical registry
  - Established 2002
  - Australian and New Zealand

- Almost 100% coverage inpatient rehab units (219 units in Aus, 41 in NZ)

- Receives data describing more than 100,000 episodes of rehab per year

- Database now holds nearly 1 million records – a rich source of data
What does AROC do?

- Established and manages national benchmarking system whose objective is to improve clinical rehabilitation outcomes for patients
- Produces information on the efficacy of interventions through the systematic collection of outcomes information in both the inpatient and ambulatory settings
- Provides annual reports that summarise the Australasian data
AROC Dataset

• De-identified dataset ... part of routine clinical data collection

• Core data items:
  ➢ Demographic items eg age, gender
  ➢ Process items
  ➢ Outcomes eg LOS, FIM, discharge destination

• Impairment specific data items
Reconditioning specific data items

- Rockwood Frailty Score (pre-morbid)
- Ability to participate in therapy from Day 1?
- Fallen in past 12 months?
- Lost > 10% of body weight in past 12 months?
Data

• Financial Year 2013/2014 (AUS)
• All reconditioning episodes, age 65+
• AROC reconditioning codes:
  ➢ 16.1 Reconditioning following surgery
  ➢ 16.2 Reconditioning following medical illness
  ➢ 16.3 Cancer rehabilitation
Reconditioning: proportion of AROC episodes FY2010-2014

![Graph showing the proportion of reconditioning episodes from FY2010 to FY2014 with data points for each year. The trend line indicates an increase in the proportion over the years.]
Reconditioning episodes by code: FY2010-2014

Financial year | Number of episodes
---|---
2010 (n=13,520) | 8,000
2011 (n=15,456) | 8,000
2012 (n=17,235) | 10,000
2013 (n=20,253) | 12,000
2014 (n=22,815) | 14,000

16.1 | 16.2 | 16.3
Average age by gender and impairment code

FY2104

Average age (years) vs Impairment

<table>
<thead>
<tr>
<th>Impairment</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>16.1</td>
<td>(Male=2,712)</td>
<td>(Female=3,368)</td>
</tr>
<tr>
<td>16.2</td>
<td>(Male=6,496)</td>
<td>(Female=9,393)</td>
</tr>
<tr>
<td>16.3</td>
<td>(Male=418)</td>
<td>(Female=425)</td>
</tr>
</tbody>
</table>

(Male=2,712) | (Female=3,368) | (Male=6,496)  | (Female=9,393)  | (Male=418)    | (Female=425)    |
Weight loss, falls, ability to participate from Day 1?

Proportion of episodes

- Weight Loss (n=2,822)
- Fallen (n=8,132)
- Participate (n=15,920)
Weight loss, falls, unable to participate

None
n=7,024
37.8%

Fallen
n=6,291
33.8%

Weight loss
n=1,157
6.2%

Unable to participate
n=2,166
11.7%
The CSHA Clinical Frailty Scale

1. Very Fit – robust, active, energetic, well motivated and fit; these people commonly exercise regularly and are in the most fit group for their age

2. Well – without active disease, but less fit than people in category 1

3. Well, with treated comorbid disease – disease symptoms are well controlled compared with those in category 4

4. Apparently vulnerable – although not frankly dependent, these people commonly complain of being “slowed up” or have disease symptoms

5. Mildly frail – with limited dependence on others for instrumental activities of daily living

6. Moderately frail – help is needed with both instrumental and non-instrumental activities of daily living

7. Severely frail – completely dependent on others for the activities of daily living

8. Terminally ill

Note:
1. Canadian Study on Health and Aging
Impairment code by frailty

Proportion of episodes within impairment

- Very fit
- Well, without active disease
- Well, with treated comorbid disease
- Apparently vulnerable
- Mildly frail
- Moderately frail
- Severely frail
- Terminally ill

Impairment

16.1 (n=6,081) 16.2 (n=15,891) 16.3 (n=843)
Falls by frailty

Proportion of episodes that have fallen

Frailty

0% 10% 20% 30% 40% 50% 60% 70% 80%

Very fit (n=26)  Well, without active disease (n=364)  Well, with treated comorbid disease (n=1,258)  Apparently vulnerable (n=1,069)  Mildly frail (n=2,014)  Moderately frail (n=2,254)  Severely frail (n=565)  Terminally ill (n=48)
Able to participate from Day 1 by frailty and impairment code

Proportion of episodes that participated from day 1

Frailty

- Very fit (n=107)
- Well, without active disease (n=1,314)
- Well, with treated comorbid disease (n=3,565)
- Apparently vulnerable (n=1,983)
- Mildly frail (n=3,695)
- Moderately frail (n=3,480)
- Severely frail (n=639)
- Terminally ill (n=78)
AROC Dataset

- Functional Independence Measure (FIM)
  - 18 items (minimum data set)
  - 13 physical and 5 cognitive items
  - Ordinal scale 1 – 7
    - 1 = Total Assistance
    - 7 = Total Independence
- Summed score of 18 - 126
Average admission FIM by frailty

Average FIM score

Frailty

Very fit (n=106)
Well, without active disease (n=1,269)
Well, with treated comorbid disease (n=3,387)
Apparently vulnerable (n=1,810)
Mildly frail (n=3,437)
Moderately frail (n=3,113)
Severely frail (n=549)
Terminally ill (n=58)
Average discharge FIM by frailty

Average FIM score by frailty category:
- Very fit (n=106)
- Well, without active disease (n=1,269)
- Well, with treated comorbid disease (n=3,387)
- Apparently vulnerable (n=1,810)
- Mildly frail (n=3,437)
- Moderately frail (n=3,113)
- Severely frail (n=549)
- Terminally ill (n=58)
Average admission FIM by falls, weight loss & inability to participate from Day 1

- **Fallen**
  - Yes: 7,000 (56.9%)
  - No: 9,238 (43.1%)

- **Weight Loss**
  - Yes: 2,265 (85.9%)
  - No: 13,786 (14.1%)

- **Participation**
  - Yes: 2,164 (86.7%)
  - No: 14,048 (13.3%)
Average discharge FIM by falls, weight loss & inability to participate from Day 1

- **Fallen**
  - Yes: 43.1% (n=7,000)
  - No: 56.9% (n=9,238)

- **Weight Loss**
  - Yes: 14.1% (n=2,265)
  - No: 85.9% (n=13,786)

- **Participation**
  - Yes: 13.3% (n=2,164)
  - No: 86.7% (n=14,048)
Average LOS by frailty

Average LOS (days)

<table>
<thead>
<tr>
<th>Frailty</th>
<th>Average LOS (days)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very fit (n=106)</td>
<td>14.5</td>
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<tr>
<td>Well, without active disease (n=1,269)</td>
<td>10.5</td>
</tr>
<tr>
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</tr>
<tr>
<td>Severely frail (n=549)</td>
<td>23.5</td>
</tr>
<tr>
<td>Terminally ill (n=58)</td>
<td>20.5</td>
</tr>
</tbody>
</table>
Average LOS by falls, weight loss & inability to participate from Day 1

- Fallen (Yes=7,000, No=9,238):
  - Yes: 43.1% (Average LOS: 16 days)
  - No: 56.9% (Average LOS: 12 days)

- Weight Loss (Yes=2,265, No=13,786):
  - Yes: 14.1% (Average LOS: 18 days)
  - No: 85.9% (Average LOS: 14 days)

- Participation (Yes=2,164, No=14,048):
  - Yes: 13.3% (Average LOS: 18 days)
  - No: 86.7% (Average LOS: 14 days)
Services prior by frailty

Proportion of episodes

Frailty

Very fit (n=107)
Well, without active disease (n=1,314)
Well, with treated comorbid disease (n=3,565)
Apparentely vulnerable (n=1,983)
Mildly frail (n=3,695)
Moderately frail (n=3,480)
Severely frail (n=639)
Terminally ill (n=78)

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

4+ 3 2 1 0
Services post by frailty

Proportion of episodes

Frailty

- Very fit (n=107)
- Well, without active disease (n=1,314)
- Well, with treated comorbid disease (n=3,565)
- Apparently vulnerable (n=1,983)
- Mildly frail (n=3,695)
- Moderately frail (n=3,480)
- Severely frail (n=639)
- Terminally ill (n=78)
Services prior by falls, weight loss & participation

Proportion of episodes

Fallen-Yes (n=8,132)  Fallen-No (n=10,544)  Weight Loss-Yes (n=2,822)  Weight Loss-No (n=15,641)  Participation-Not able (n=2,729)  Participation-Able (n=15,920)
Services post by falls, weight loss & participation

Proportion of episodes

<table>
<thead>
<tr>
<th></th>
<th>0%</th>
<th>10%</th>
<th>20%</th>
<th>30%</th>
<th>40%</th>
<th>50%</th>
<th>60%</th>
<th>70%</th>
<th>80%</th>
<th>90%</th>
<th>100%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fallen-Yes</td>
<td>100%</td>
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<tr>
<td>Fallen-No</td>
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<td>100%</td>
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<td>Weight Loss-Yes</td>
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<td>Participation-Not able</td>
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<td>100%</td>
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<td>Participation-Able</td>
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</tbody>
</table>

Fallen-Yes (n=7,011)  Fallen-No (n=9,253)  Weight Loss-Yes (n=2,270)  Weight Loss-No (n=13,806)  Participation-Not able (n=2,172)  Participation-Able (n=14,066)
Service type

<table>
<thead>
<tr>
<th>Service Type</th>
<th>Number of episodes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Domestic assistance</td>
<td>8,000</td>
</tr>
<tr>
<td>Social support</td>
<td>1,000</td>
</tr>
<tr>
<td>Nursing care</td>
<td>2,000</td>
</tr>
<tr>
<td>Allied health care</td>
<td>3,000</td>
</tr>
<tr>
<td>Personal care</td>
<td>4,000</td>
</tr>
<tr>
<td>Meals</td>
<td>5,000</td>
</tr>
<tr>
<td>Provision of goods &amp; equipment</td>
<td>6,000</td>
</tr>
<tr>
<td>Transport services</td>
<td>7,000</td>
</tr>
<tr>
<td>Case management</td>
<td>8,000</td>
</tr>
</tbody>
</table>

Services Prior vs Services Post
Summary FIM, ALOS
weight loss, falls, unable to participate

- **None**
  - FIM adm=91
  - FIM change=16
  - ALOS=15

- **Fallen**
  - FIM adm=83
  - FIM change=16
  - ALOS=18

- **Weight loss**
  - FIM adm=87
  - FIM change=17
  - ALOS=18

- **Unable to participate**
  - FIM adm=93
  - FIM change=15
  - ALOS=17
Summary

• Reconditioning impairment specific data items are part of the routine AROC data collection

• The FY 2013/14 data indicates that increasing frailty, falls and weight loss generally associated with:
  ➢ reduced average admission FIM score
  ➢ increased average LOS

• Increasing frailty and falls generally associated with:
  ➢ Increased service needs
AROC Contact Details

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