Benchmarking Outcomes in Rehabilitation – the AROC Story

Innovation in Rehabilitation Conference

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What is AROC?

- AROC began as a joint initiative of the whole Australian rehabilitation sector (providers, payers, regulators and consumers)
- Established 1 July 2002 as a not-for-profit Centre
- The Australasian Faculty of Rehabilitation Medicine (AFRM) is the auspice body and data custodian
- The Centre for Health Service Development (CHSD) at the University of Wollongong is the data manager and responsible for AROC’s day to day operations
Purpose and Aims of AROC

The basic purpose and aims of AROC were established as, and continue to be:

• To provide a national benchmarking system to improve clinical rehabilitation outcomes.
• To produce information on the efficacy of interventions through the systematic collection of outcomes information in both the inpatient and ambulatory settings.
• To provide annual reports that summarise the Australasian data.
AROC has 5 roles

1. A national data bureau that receives and manages data on rehabilitation services in Australia
2. The national benchmarking centre providing for rehabilitation services
3. The national certification centre for the Functional Independence Measures (FIM)
4. An education and training and research centre for the FIM and other rehabilitation outcome measures
5. A research and development centre that develops research and development proposals and seeks external funding for its research agenda
AROC Coverage

- There are approximately 140 rehabilitation units in Australia, 80 public sector and 60 private sector units.

- 123 submitted data to AROC in the 2005 calendar year (66 public sector units, 57 private sector units).

- In 2005 data describing some 45,000 episodes was submitted to AROC.

- AROC provides analysis of each individual member facilities data for that member, and also compares that data to analysis of the overall sector (public or private), and to the national data.
AROC Reports

• A benchmarking report is prepared for individual facilities and payer organisations each 6 months
• Facility’s data presented and compared with their sector (public or private) and national data
• Facility LOS and FIM change adjusted for casemix to compare with sector data
• Outcome measure figures presented for facilities top three impairments – difference from the benchmark group (public or private)
• New format of reports implemented 2006
The AROC database now contains data describing more than 275,000 episodes of rehabilitation, and is therefore a rich source of information.

Member facilities contribute data quarterly describing all inpatient episodes of rehabilitation. Data is submitted to an audit process prior to acceptance into the database.

The 2005 dataset includes 45,650 episodes:
- 17,981 from the public sector
- 27,607 from the private sector
Episodes by impairment group, 2005

- Stroke
- Brain
- Neuro
- Spine
- Amputee
- Arthritis
- Pain
- Ortho
- Cardiac
- Pulmonary
- Burns
- Congenital
- Other
- MultiTrauma
- Developmental
- Debility
Episodes by impairment group, by sector, 2005
<table>
<thead>
<tr>
<th>Impairment group</th>
<th>Episodes</th>
<th>Length of stay Mean (95%CI)</th>
<th>FIM change Mean (95%CI)</th>
<th>FIM gain/week</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stroke</td>
<td>4,631</td>
<td>27.0 (26.4–27.5)</td>
<td>19.4 (19.0–19.9)</td>
<td>5.0</td>
</tr>
<tr>
<td>Brain</td>
<td>1,308</td>
<td>28.6 (27.4–29.8)</td>
<td>20.5 (19.3–21.7)</td>
<td>5.0</td>
</tr>
<tr>
<td>Neurological</td>
<td>2,021</td>
<td>20.1 (19.4–20.7)</td>
<td>13.5 (12.9–14.1)</td>
<td>4.7</td>
</tr>
<tr>
<td>Spinal cord</td>
<td>725</td>
<td>33.8 (31.8–35.9)</td>
<td>15.7 (14.5–16.9)</td>
<td>3.2</td>
</tr>
<tr>
<td>Amputee</td>
<td>990</td>
<td>32.0 (30.6–33.3)</td>
<td>11.9 (11.2–12.7)</td>
<td>2.6</td>
</tr>
<tr>
<td>Arthritis</td>
<td>598</td>
<td>14.0 (13.3–14.7)</td>
<td>11.7 (11.0–12.5)</td>
<td>5.9</td>
</tr>
<tr>
<td>Pain</td>
<td>1,526</td>
<td>15.6 (15.1–16.1)</td>
<td>12.1 (11.5–12.7)</td>
<td>5.4</td>
</tr>
<tr>
<td>Orthopaedic</td>
<td>19,823</td>
<td>17.0 (16.8–17.1)</td>
<td>16.5 (16.3–16.6)</td>
<td>6.8</td>
</tr>
<tr>
<td>Cardiac</td>
<td>2,207</td>
<td>14.1 (13.7–14.4)</td>
<td>13.7 (13.2–14.2)</td>
<td>6.8</td>
</tr>
<tr>
<td>Pulmonary</td>
<td>1,277</td>
<td>16.4 (15.7–17.0)</td>
<td>12.6 (11.9–13.3)</td>
<td>5.4</td>
</tr>
<tr>
<td>Burns</td>
<td>32</td>
<td>29.2 (22.8–35.5)</td>
<td>16.2 (11.5–20.9)</td>
<td>3.9</td>
</tr>
<tr>
<td>Congenital deformity</td>
<td>8</td>
<td>31.3 (13.2–49.3)</td>
<td>10.6 (2.6–18.6)</td>
<td>2.4</td>
</tr>
<tr>
<td>Other disabling imp.</td>
<td>3,524</td>
<td>18.1 (17.7–18.5)</td>
<td>13.9 (13.4–14.4)</td>
<td>5.4</td>
</tr>
<tr>
<td>Multiple trauma</td>
<td>331</td>
<td>30.4 (28.0–32.9)</td>
<td>26.6 (24.4–28.9)</td>
<td>6.1</td>
</tr>
<tr>
<td>Developmental disability</td>
<td>168</td>
<td>14.6 (13.3–15.9)</td>
<td>11.6 (10.0–13.2)</td>
<td>5.6</td>
</tr>
<tr>
<td>Debility</td>
<td>4,892</td>
<td>17.5 (17.2–17.9)</td>
<td>13.7 (13.3–14.0)</td>
<td>5.5</td>
</tr>
<tr>
<td>Missing or excluded</td>
<td>1,589</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>All episodes</strong></td>
<td><strong>45,650</strong></td>
<td><strong>19.1 (19.0–19.3)</strong></td>
<td><strong>15.7 (15.6–15.9)</strong></td>
<td><strong>5.8</strong></td>
</tr>
</tbody>
</table>
Outcomes in Rehabilitation

- Outcomes in rehabilitation cannot be measured by any single measure. It is the combination of elements that tell the story
  - Admission FIM
  - FIM change
  - LOS
  - Discharge destination
  - Age and co-morbidities also add context.

- Rehabilitation episodes are categorised by the AROC impairment code

- Episodes can also be categorised by AN-SNAP class, the sub-acute sector’s version of casemix
Overall Rehabilitation Outcomes
Summary - change in measures 2000-2005

Difference from 2000 data

-8.0 -6.0 -4.0 -2.0 0.0 2.0 4.0 6.0 8.0 10.0

2005

Disch to community (%)
FIM efficiency (per week)
FIM change (adm to disch)
FIM discharge score
FIM admission score
Length of stay (days)
Age (years)

87.1
5.7
15.8
105.1
89.3
19.2
73.6

Lower than 2000 data
Higher than 2000 data
Orthopaedic Rehabilitation Outcomes
Summary - change in measures 2000-2005

Difference from 2000 data

-8.0  -6.0  -4.0  -2.0  0.0  2.0  4.0  6.0  8.0  10.0

Disch to community (%)
FIM efficiency (per week)
FIM change (adm to disch)
FIM discharge score
FIM admission score
Length of stay (days)
Age (years)

2005

91.5
6.8
16.5
108.4
91.9
17.0
74.9

Lower than 2000 data  Higher than 2000 data
Stroke Rehabilitation Outcomes
Summary - change in measures 2000-2005

- Disch to community (%): 81.7
- FIM efficiency (per week): 5.1
- FIM change (adm to disch): 19.5
- FIM discharge score: 97.0
- FIM admission score: 77.4
- Length of stay (days): 26.9
- Age (years): 73.0

Difference from 2000 data

Lower than 2000 data  Higher than 2000 data
Debility Rehabilitation Outcomes Summary change in measures 2000-2005

Difference from 2000 data

-8.0 -6.0 -4.0 -2.0 0.0 2.0 4.0 6.0 8.0 10.0

2005

Disch to community (%)
FIM efficiency (per week)
FIM change (adm to disch)
FIM discharge score
FIM admission score
Length of stay (days)
Age (years)

Lower than 2000 data  Higher than 2000 data

84.9  5.5  13.6  102.2  88.5  17.5  79.1
Summary of Outcomes Achieved by Sector 2000 - 2005

• Overall it’s a good news story !!
• LOS is decreasing
• Functional gain achieved during a programme is increasing …
• … and its being achieved more efficiently !!
• A greater percentage of patients are being discharged back to the community
• Average age of patients hasn’t changed dramatically over the 5 years
AROC – Projects and Products

• Expansion to include New Zealand units
• Rehabilitation clinical indicator review
• Inaugural annual State of the Rehabilitation Nation report
• Development of version 3 of the AROC data set, with implementation expected 1 July 2007, in line with SNAP classification review
• AROC Impairment Code review
• Development of AROC ambulatory dataset, with implementation expected 1 July 2007
• DVA research project on models of rehabilitation care
• Impairment specific benchmarking workshops
• Process and outcome improvement workshops for individual facilities
• Ad hoc reports, as commissioned
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