Rehabilitation at RHSC Edinburgh

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Rehabilitation

Conceptual definition:
‘Process of active change by which a person who has become disabled acquires knowledge and skills needed for optimal physical, psychological and social function’

Service definition:
‘Use of all means to minimise impact of disabling conditions and to assist disabled people to achieve desired level of autonomy and participation in community’
Rehabilitation (2)

- A primary goal of inpatient rehab is to improve basic self care skills including bathing/dressing/dressing and feeding.
- Multidisciplinary approach recommended (including family)
- Few well defined models of care and evidence to support
Stages/Levels of Rehab

» Begins acutely in PICU
  • Interventions to reduce impairment and prevent 2° complications e.g. contractures

» Intensive inpatient
  • Transition from hospital → community
  • Addresses mobility/independence
  • Interventions – reduce disability

» (Day – patient)
Stages/Levels rehab cont

- Community/outpatient
  - Maximise ability to function in own environment
  - Emphasis on extended ADL’s, return to education and social integration
  - Intervention focus – enhanced participation, psychological adjustment, ↑ QoL and carer stress.
Effective Rehab

- Child must have some ability to respond to environment/stimuli

- Rehab goals
  - Collaborative, family-centred, measurable, objective and time limited.

- Challenge of carry-over and generalization of new learning
  - Involve caregivers
Brain injury

Health Condition (disorder/disease)

Body function & structure

Activities

Participation

Environmental Factors

Personal Factors

Walking
Talking
Thinking
ADLs
Writing

Diffuse axonal injury

Home School Community Groups
Rehabilitation in RHSC

- Inpatient rehab on ward 7 (ward 2)
- Multidisciplinary and multi-agency.
- Focus on return to home community and education
- Family centred
- Goal directed
Rehab Team

- Nursing - Specialist Neurology Nurse
- Medical Input
- Therapy – Physio, OT, SALT, Play
- Social Work
- Neuropsychology/ Psychology
- Hospital Teacher
- Discharge Liaison Nurse
Rehab at RHSC cont

- Assessment of child/family by MDT
- Educate family re ABI
- Regular MDTs
- Frequent updates to family
- Discharge planning
- **Severe Brain injury**
  - Paediatric Coma Score or GCS ≤ 8/15 at stabilisation
  - LOC 1 hour or more
  - Abnormal coma score at Day 7

- **Post Traumatic Amnesia**
  - >24 hours is severe and >7 days is very severe
  - Dysautonomia
  - Brain lesions – diffuse and or deep, DAI, focal lesions, raised ICP, hypoxia, involvement of CC, Basal ganglia or thalamus
Severity of Brain Injury

Post Traumatic Amnesia
- State of confusion
- Continuous new memory

<table>
<thead>
<tr>
<th>Duration</th>
<th>Severity</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 5 mins</td>
<td>Very mild</td>
</tr>
<tr>
<td>5-60 mins</td>
<td>Mild</td>
</tr>
<tr>
<td>1-23 hours</td>
<td>Moderate</td>
</tr>
<tr>
<td>1-7 days</td>
<td>Severe</td>
</tr>
<tr>
<td>1-4 weeks</td>
<td>Very severe</td>
</tr>
<tr>
<td>&gt;4 weeks</td>
<td>Extremely severe</td>
</tr>
</tbody>
</table>
Westmead PTA test
- Orientation and
- Continuous new memories
- Prospective evaluation
- 12 item instrument
- 3 days with 12/12

COAT
- Children's orientation and amnesia test
- 16-item instrument evaluating general orientation, temporal orientation, and memory (recall).
- 2 days in normal range for age
**WESTMEAD P.T.A. SCALE**

P.T.A. may be deemed to be over on the first of 3 consecutive days of a recall of 12

<table>
<thead>
<tr>
<th>Title</th>
<th>Family Name</th>
<th>M.R.N.</th>
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</thead>
<tbody>
<tr>
<td>Given Names</td>
<td>C.M.O.</td>
<td></td>
</tr>
<tr>
<td>Address</td>
<td>Street</td>
<td>Age</td>
</tr>
<tr>
<td>Suburb</td>
<td>Postcode</td>
<td>Adm. date</td>
</tr>
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</table>

**A = Answer**

<table>
<thead>
<tr>
<th>DATE</th>
<th>S = Score (1 or 0)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. How old are you?</td>
<td>AS</td>
</tr>
<tr>
<td>2. What is your date of birth?</td>
<td>ASA</td>
</tr>
<tr>
<td>3. What month are we in?</td>
<td>ASA</td>
</tr>
<tr>
<td>4. What time of day is it? (morning, afternoon or night)</td>
<td>ASA</td>
</tr>
<tr>
<td>5. What day of the week is it?</td>
<td>SAS</td>
</tr>
<tr>
<td>6. What year are we in?</td>
<td>SAS</td>
</tr>
<tr>
<td>7. What is the name of this place?</td>
<td>SAS</td>
</tr>
<tr>
<td>8. Face</td>
<td>ASA</td>
</tr>
<tr>
<td>9. Name</td>
<td>ASA</td>
</tr>
<tr>
<td>10. Picture I</td>
<td>ASA</td>
</tr>
<tr>
<td>11. Picture II</td>
<td>ASA</td>
</tr>
<tr>
<td>12. Picture III</td>
<td>AS</td>
</tr>
</tbody>
</table>

**TOTAL**
- Naming
- New memory
- PTA testing after age 7 years

Shores AE 1986
http://www.rancho.org/research_rancholevels.aspx
Joined up working and supporting the family in hospital
Royal Hospital for Sick Children
Edinburgh

- Between 01/11/2012 to 31/10/2013

- HI attending A & E – 2397
- HI admitted from A & E – 118

- Neurology department – 39
- Other wards - 79
Historically

- Care not streamlined and not easily audited
- No formal support with transition from ward to home
- No standardised follow-up.
- Staff frequently recognising an opportunity for continuing family support
What would work?
Our thoughts!

- A period of neurology assessment and multi/interdisciplinary team rehabilitation
- Integrated care pathway
- Link with education – point of contact
- ‘Wean off ward’ – day pass, overnight pass, weekend pass
- Regular ward/home/telephone reviews and outpatient appointments
Communication within our team

- Weekly team meetings
- Planned and organised discharge planning
- Reviews and follow up organised with family
- Contact numbers
Does our approach work?

- Positive feedback from families
- Positive feedback from community health teams
- Positive feedback from education team
Case study

- 10 year old boy
- Acquired brain injury – moderate
- Post traumatic amnesia (PTA) for 7 days
- Short term memory
- Becoming more emotional as aware of own difficulties
- Impulsive with a reduced sense of danger
Case study

- Urgent discharge planning meeting arranged and home after 2 weeks
- Discussed with family and referred to CBIT
- Discussed with family and referral to Psychology team for assessment, at least 6 months
- Phased return back to school and management strategies
- Regular contact and follow-up arranged with Neurodisability Clinic
Questions?