Mechanisms that matter in stroke rehabilitation

Rebecca Fisher, Brian Crosbie, Niki Chouliara, Marion Walker & the REVIHR study steering group
Overview

- Implementing evidence based stroke rehabilitation in a hospital setting
- Investigation of mechanisms underpinning delivery of stroke rehabilitation
- Independence in daily living, Intensity of therapy
- Realist Evaluation
- Collaborative partnership synergy
- Approaches to facilitating improvements
Background

- Previous research has shown that provision of in-hospital rehabilitation in the UK was much less than in Europe and not always evidence based
- The REVIHR study aims to facilitate improvements in the delivery of evidence-based stroke rehabilitation
- Three year study in four stroke rehabilitation units (East Midlands)
- ReAcT study Dr David Clarke (North East, North West, Yorkshire)

Aims of the REVIHR Study

• To explore how stroke patients’ time is spent in the stroke rehabilitation unit
• To capture amounts of time patients spend practicing Activities of Daily Living (ADLs)
• To explore how members of staff divide their time
• To capture the mechanisms that drive the delivery of evidence based stroke rehabilitation
Methods

- 40 semi-structured interviews across 4 stroke units
- 10 from each site purposive sampling from MDT
- Interviews recorded, transcribed and entered into Nvivo
- Interview schedule topics:
  - MDT communication
  - Delivering rehabilitation/ MDT working
  - Evidence based practice
  - Leadership
  - Staff training
<table>
<thead>
<tr>
<th></th>
<th>Site 1</th>
<th>Site 2</th>
<th>Site 3</th>
<th>Site 4</th>
<th>totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physiotherapists</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>10</td>
</tr>
<tr>
<td>Occupational therapists</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Speech &amp; Language T</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Rehab/therapy assistants</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Nurses</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>4</td>
<td>13</td>
</tr>
<tr>
<td>Stroke consultant</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Health Care Assistants</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Commissioner groups</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Stroke Association</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Totals</td>
<td>11</td>
<td>9</td>
<td>9</td>
<td>10</td>
<td>40</td>
</tr>
</tbody>
</table>
Realist evaluation approach recognises the complexity of open social systems in health interventions

CMO patterns associated with delivery of stroke rehabilitation in stroke rehabilitation wards

C= context: conditions in which interventions are introduced

M= mechanism: How a programme brings about effects through reasoning/ resources

O= outcome: Intended or unintended consequences of interventions

Under certain context conditions mechanisms (processes) will be triggered producing outcomes
• CMO configurations are key analytical device in realist evaluation
• Theory building to explore how interventions operate
• Multiple mechanisms in operation at any given time
Programme theory

• Refine and add to the programme theory (what works, for whom, in what circumstances?)
• Appropriately delivered, high intensity, specialist rehabilitation early post stroke leads to better functional outcomes for stroke patients
• Co-ordinated multidisciplinary rehabilitation
• Staff with a specialist interest in stroke or rehabilitation
• Regular programmes of education and training
• Team meetings at least weekly to plan care
• Effective leadership

• Independence in daily living & Intensity of therapy
• Goal setting & Resources
Interview data analysis

Process of analysis: building mechanism theory

CMO configurations - devised as data level theory

Mid-range theory - higher level of abstraction explaining interactions

Clustering of configuration around higher level CMO configurations

Thematic analysis of interview data
### Independence in daily living

<table>
<thead>
<tr>
<th>CMO [88] Targeted assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Context: audit targets, discharge priority; time pressure</td>
</tr>
<tr>
<td>Mechanism: targeting rehab activities meaningful to patients e.g. assessment focus on functional activities</td>
</tr>
<tr>
<td>Outcome: patients participate in achieving realistic goals, appropriate to their needs</td>
</tr>
</tbody>
</table>

**“we look at the patient’s function; where was that person before their stroke, what were their priorities? So we would identify meaningful activities.”**

<table>
<thead>
<tr>
<th>CMO [20] Patient groups</th>
</tr>
</thead>
<tbody>
<tr>
<td>Context: stretched therapy staff</td>
</tr>
<tr>
<td>Mechanism: offering group sessions e.g. breakfast club; practice ADLs in social setting</td>
</tr>
<tr>
<td>Outcome: Patients receive rehab specific to their therapeutic needs; patients practice routines of daily living</td>
</tr>
</tbody>
</table>

**“The key thing is, the more you practice something in a different context, the better it’s going to be. We do as well as we can to facilitate that. And that’s why we do our group work”**

<table>
<thead>
<tr>
<th>CMO [59] Skill transfer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Context: Morning toileting routine; Time &amp; resources</td>
</tr>
<tr>
<td>Mechanism: In washing/dressing, rehab assistants transfer handling and mobility skills to nurses</td>
</tr>
<tr>
<td>Outcome: Patient given opportunity to practice ADL; Nurses develop therapy handling skills to enhance patient rehab</td>
</tr>
</tbody>
</table>

**“I would put a rehab assistant in each bay in the mornings, just to promote that therapeutic work...working alongside the nursing staff to do transfers out of bed, to help the patients wash; to make it all therapeutic.”**

<table>
<thead>
<tr>
<th>CMO [87] Carers Charter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Context: Visiting times; communication with family</td>
</tr>
<tr>
<td>Mechanism: Agreed involvement of family/carer in patient care planning</td>
</tr>
<tr>
<td>Outcome: Patients receive extended care from family; Family understand stroke recovery process and future expectations</td>
</tr>
</tbody>
</table>

**“[Family] participating with the nurses with the care...we think that’s a really positive thing.”**

<table>
<thead>
<tr>
<th>CMO [45] Self-medication</th>
</tr>
</thead>
<tbody>
<tr>
<td>Context: Nursing staff pressures; communication</td>
</tr>
<tr>
<td>Mechanism: Contention over whose task patient self-medication training; task not done</td>
</tr>
<tr>
<td>Outcome: Patient held back on discharge; Delay in transfer; Patient not trained</td>
</tr>
</tbody>
</table>

**“Toileting and medication are two of the biggest problems when patients go home.”**

<table>
<thead>
<tr>
<th>CMO [82] Rehab cross-over</th>
</tr>
</thead>
<tbody>
<tr>
<td>Context: nursing pressure and staffing levels; patient rehab planning</td>
</tr>
<tr>
<td>Mechanism: toileting patient at bedside; speeds up nursing tasks</td>
</tr>
<tr>
<td>Outcome: patients miss out on opportunity to practice ADLs</td>
</tr>
</tbody>
</table>

**“OTs make sure the white boards are up to date. If a patient can walk to the bathroom with one, sometimes a commode will be brought, which shouldn’t be.”**

<table>
<thead>
<tr>
<th>CMO [75] Training among specialisms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Context: time pressures; discontinuity in rehab focus</td>
</tr>
<tr>
<td>Mechanism: risk of untrained staff transferring and mobilising patients</td>
</tr>
<tr>
<td>Outcome: therapist reluctant to step up transfers outside of therapy; patients given less opportunity to practice ADLs</td>
</tr>
</tbody>
</table>

**“We’re trained to move a patient in a certain way, but we need to think about how a nurse can do it....because of the lack of experience”**

<table>
<thead>
<tr>
<th>CMO [90] Communication with family</th>
</tr>
</thead>
<tbody>
<tr>
<td>Context: lack of communication; separation of acute/rehab</td>
</tr>
<tr>
<td>Mechanism: acute stroke is a separate service to rehab; low expectations of hand-over of patient info</td>
</tr>
<tr>
<td>Outcome: patient/ family forced to duplicate information; families frustrated with service</td>
</tr>
</tbody>
</table>

**“patient comes down here and they’ve still got that anger inside, and the relatives have and we have to start the process all over again.”**

---

**Re-engagement with independent living and social participation**

<table>
<thead>
<tr>
<th>Patients to be assessed for safety and independence in relevant ADLs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment for identified problems associated with ADLs offered by OT with whole MDT</td>
</tr>
<tr>
<td>Involve trained members of specialist multidisciplinary team to assist patients in self-care practice</td>
</tr>
<tr>
<td>Training of family/carers in how to help practice of ADLs</td>
</tr>
</tbody>
</table>

---

**National Institute for Health Research**

**NHS**
Mechanisms
Targeted patient assessment and goals
Multi-therapeutic group sessions
Rehab Assistants & Nurse joint working
Family charter / concessions for families

Outcomes
Promoted patient activities of daily living
Family and carer understanding of rehabilitation
Progression of patient rehabilitation goals

Context
Multidisciplinary team working;
Communication; Staffing & time pressures

Discharge priorities; Audit targets;
Rehabilitation cross-over; Transfer of skills

Independence in daily living
Patients to receive 45 mins of each therapy per day

CMO [81] Joint sessions

**Context:** MDT working; patient fatigue/ tolerance; pressure of staff/time; audit requirements

**Mechanism:** Planning joint sessions allows input from both PT and OTs

**Outcome:** Patients receive tolerable levels of therapy from disciplines; strengthened interdisciplinary ethos

“If they have clear issues with fatigue we will always try and double up and see physio and OT at the same time, it’s not fair to ask the patient to do something twice if they’ve got real problems with energy conservation”

Patients receive continuous and appropriate levels of therapy

CMO [85] Lack of therapy coordination; patient fatigue.

**Context:** MDT working; patients rehab tolerance; timetabling therapy

**Mechanism:** lack of coordination; patient rehab delivered ad-hoc by separate therapy staff

**Outcome:** patient therapy tolerance is peaked; lose out on further therapy inputs

“some of the really acute [patients] who are still poorly, they just can’t tolerate that, especially when you consider it’s not just ourselves trying to spend forty-five minutes with them.”
Collaboration for Leadership in Applied Health Research and Care
East Midlands

Context
Multidisciplinary team working; Staffing & time pressures; training

Mechanisms
Interdisciplinary joint working
Training among staff/ knowledge sharing
Strategic use of resources (assistants)
Follow-on therapy

Audit requirements; Patient fatigue

Outcomes
Enriched patient rehabilitation for ADL
Improved communication (nurse/therapy)
Upskilled nursing staff
Strengthened rehabilitation ethos

Intensity of therapy
• **Collaboration**: parties who see different aspects of a problem can explore constructively their differences and search for solutions that go beyond their limited vision of what is possible.

• **Partnership actions**: Alliance, reduce duplication, critical mass.

• **Synergy**: combining individual perspectives, resources, skills of the partners, the group is greater than the sum of its parts.

Mechanisms that matter

- **Partnership Synergy in stroke rehabilitation**
- **Provision of appropriate team resources to enhance therapeutic opportunities relating to patient ADLs (rehab ethos)**
- **Planned interdisciplinary joint working & rehab assistants crossing therapy and nursing boundaries**
- **Receptivity to training: nursing developing transfer/mobilisation skills to promote patients in ADLs**
- **Team reflection on cross-discipline working; continuous appraisal and development of communication strategies**
- **Effective knowledge sharing to inform patient goal setting and therapy**
Building synergy can be time consuming and difficult.
Opportunity to think about working patterns creatively and practically.
Encouragement of different team member perspectives and skills to address problems.
Build trust, respect and reciprocity to enhance partnership working.
Boundary-spanning leadership, coordination and management.

Facilitating improvements

- Research findings
  - Mechanisms driving stroke rehabilitation delivery & lessons learned from each site

- Clinical practice
  - Work in partnership with key stakeholders and local champions to deliver improvement programmes

  Feedback findings
Whatever comes out of these gates, we've got a better chance of survival if we work together. Do you understand? If we stay together, we survive.

~ Maximus (Gladiator)
www.gotknowhow.com
Acknowledgments

Brian Crosbie, Niki Chouliara
Marion Walker, Peter Langhorne, Tom Robinson, Niki Sprigg, Ossie Newell

This research was funded by the National Institute for Health Research (NIHR) Collaboration for Leadership in Applied Health Research and Care East Midlands (CLAHRC EM). The views expressed in this presentation are those of the speaker(s) and not necessarily those of the NHS, the NIHR or the Department of Health.
Thank you for listening

rebecca.fisher@nottingham.ac.uk
brian.crosbie@nottingham.ac.uk
www.clahrc-em.nihr.ac.uk
@CLAHRC_EM

This research was funded by the National Institute for Health Research (NIHR) Collaboration for Leadership in Applied Health Research and Care East Midlands (CLAHRC EM). The views expressed in this presentation are those of the speaker(s) and not necessarily those of the NHS, the NIHR or the Department of Health.