The ACTiveARM Project:

Australian Constraint Therapy Implementation study of the ARM
A project funded by the NSW Health Translational Research Grant Scheme (TRGS)

Implementation of sustainable publicly funded constraint-induced movement therapy (CIMT) in South Western Sydney Local Health District (SWSLHD), Australia

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Background

1. Intensive graded exercise program using the affected arm

2. Constraint of the non-affected arm to promote use of the affected arm

3. A transfer package to support transfer of new skills into real life

For stroke survivors with some active wrist and finger extension, intensive constraint-induced movement therapy (minimum 2 hours of active therapy per day for 2 weeks, plus restraint for at least 8 hours a day) should be provided to improve arm and hand use. (Corbetta et al. 2015 [177]) Trunk restraint may also be incorporated into the active therapy sessions at any stage post-stroke. (Wee et al. 2014 [164])
Aim and Research Questions

Research Aim: To investigate the impact of an implementation package on clinician behaviour and increase the number of CIMT programs delivered over 2 years in SWSLHD

Q1: Do rehabilitation teams deliver more CIMT programs after receiving a CIMT implementation package?

Q2: Do stroke and brain injury survivors that complete a CIMT program achieve upper limb outcomes consistent with published outcomes?

Q3: Can teams recruit sufficient patient participants to regularly provide CIMT?

Q4: What is the cost of a 2-week CIMT program and district-wide implementation?
Methods

**Design:** Before-and-after design, with mixed methods

1. **Audit & Feedback**
   (Target n = 20 files per team per timepoint)

2. **Focus group Interviews**
   Barriers/Enablers to CIMT implementation with nine teams

3. **Delivery of CIMT Implementation Package**
   (including training)
Component 1: File audit outcomes: Baseline Timepoint 1 (October-December 2016)

Proportion of baseline sample eligible for, offered and delivered a CIMT program (n=172)

- Eligible: 40% (n=69)
- Offered: <2% (n=2)
- Received: <2% (n=2)
Component 2: Barriers and Enablers to CIMT Implementation

“Out technical assistant … having the NUM and the rest of the nursing staff on side … just makes your life a little easier.”

“We do a shared care model for the upper limb here … OT [and] physio … There’s very strong evidence that we should be using it so it helps with our compliance with … stroke guidelines and ensuring that our patients are receiving the best available evidence and treatment that they can.”

Michie et al (2005); Cane et al (2012)
Intervention: Developing and delivering a behaviour change implementation package that targets barriers and enablers

- Coaching, mentoring and support via Teleconference
- Community of Practice (CoP)
- Establishment of local CIMT champions
- 2 day workshop to increase knowledge, skills and confidence
- Regular audit and feedback on practice every 3 months
- Reminders via posters
- Face to face support during first CIMT program
- CIMT routinely offered and delivered in practice
# Component 3: Delivery of package and measurement of outcomes

## Preliminary File Audit Outcomes: Demographics

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>All teams (n=628) % (n)</th>
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<tbody>
<tr>
<td><strong>Sex, % (n)</strong></td>
<td></td>
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<tr>
<td>Male</td>
<td>Stroke</td>
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<tr>
<td></td>
<td>TBI</td>
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<td>Female</td>
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<td><strong>Mean age (years)</strong></td>
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<td>Stroke</td>
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<td><strong>Diagnosis, % (n)</strong></td>
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<td>Stroke</td>
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<td>TBI</td>
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<td><strong>Mean duration from neurological event to admission (days)</strong></td>
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<tr>
<td>Inpatients</td>
<td>Stroke</td>
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<td>Outpatients</td>
<td>Stroke</td>
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<tr>
<td><strong>Mean Modified Rankin Score (mRs) at admission (range 0- 5)</strong></td>
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<td>Inpatients</td>
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Component 3: Preliminary File Audit Outcomes

% of Total sample eligible for CIMT

- T1 (n=172): 40% (n=69)
- T2 (n=149): 32% (n=48)
- T3 (n=155): 30% (n=46)
- T4 (n=157): 27% (n=43)
Component 3: Preliminary File Audit Outcomes

% of Eligible CIMT participants offered & delivered a CIMT program

Commencement of CoP

Delivery of 2x 2 day CIMT workshops

Distribution of poster reminders

Delivery of 1x 2 day CIMT workshop

Baseline Oct-Dec 2016

April - June 2017

July - Sept 2017

Oct - Dec 2017

= verbal and written feedback on audit results given
Component 3: Preliminary File Audit Outcomes

% of eligible people for CIMT that were offered and delivered a program over 12 months by team

Teams

% Offered % Delivered
Conclusions and future directions

• Due to commence timepoint 4 file audits this week (Jan-March 2018)

• Recently provided 4\textsuperscript{th} CIMT workshop at request of teams

• Successful implementation of CIMT in public health practice is \textit{multifaceted}

• Importance of a \textit{multidisciplinary team approach} highlighted and \textit{leadership/organisational support}

• Finding used to \textit{inform} the \textit{development and delivery} of an \textit{implementation package} for CIMT translation in South Western Sydney, The ACTIveARM project
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Key references


