STROKESTRA
Stroke Rehabilitation through Creative Music-Making

ROYAL PHILHARMONIC ORCHESTRA
Hull City Council
Humber NHS Foundation Trust

NHS
Evidence Base

• Studies have focused on the use of music to promote social interaction, positive mood and lower depression and anxiety.
  
  Nayak et al., 2000; Barbara et al., 2003; Guetin, 2009; Kim, 2011; Poćwierz-Marciniak, 2014

• Listening to music has been found to have short term effects on visual awareness, visual attention and unilateral neglect.
  
  Sarkamo, et al., 2012; Rodriguez-Fornells, 2012; Mei Ching et al., 2013; Tsai, 2013

• Studies have concluded that music listening can improve auditory and verbal memory, attention and mood.
  
  Sarkamo, 2012
Evidence Base

• A Cochrane review concluded that rhythmic auditory stimulation can be beneficial for improving gait parameters.
  Bradt et al., 2010

• Music has been shown to support upper limb recovery including improved fine and gross motor movements and self-management.
  Van Wijck, 2012; Altenmuller, 2009

• Listening to music can also support neuroplastic changes in chronic stroke patients.
  Amengual et al., 2013; Raghaven et al., 2014; Jamali et al., 2014
Research & Development
Structure

• Patients identified by HICSS staff
• Patients chose individualised goals to work towards
• Patients assigned to AM or PM group
• 4x monthly RPO-led sessions: two consecutive days
• 4x interim HICSS-led sessions: one day
• Patients given instruments and ‘homework’ to continue work between sessions
• 1x RPO-led finale: 3 workshop days + 1 performance day
<table>
<thead>
<tr>
<th>Dates</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>28 &amp; 29 May 2015</td>
<td>RPO Project 1</td>
</tr>
<tr>
<td>5 June</td>
<td>RPO Musician Training</td>
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<tr>
<td>10 June</td>
<td>HICSS Staff Training</td>
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<tr>
<td>11 &amp; 12 June</td>
<td>RPO Project 2</td>
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<tr>
<td>2 July</td>
<td>HICSS Project 1</td>
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<tr>
<td>16 &amp; 17 July</td>
<td>RPO Project 3</td>
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<tr>
<td>30 July</td>
<td>HICSS Project 2</td>
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<td>13 August</td>
<td>HICSS Project 3</td>
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<td>20 &amp; 21 August</td>
<td>RPO Project 4</td>
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<tr>
<td>17 September</td>
<td>HICSS Project 4</td>
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<tr>
<td>28, 29, 30 September &amp; 1 October</td>
<td>RPO Project 5 and Performance</td>
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</table>
Sessions
Sessions
Evaluation

• Stroke Impact Scale – baseline and post-project

• Specific goal related assessments (e.g. COAST, GAD-7, PHQ-9, Chedoke Upper Limb)

• Post-project evaluation surveys with patients, carers and HICSS staff

• Focus group with patients and carers

• Focus group with RPO team
Results

- Symptom relief: 86%
- Social benefit: 91%
- Cognitive benefit: 86%
- Emotional benefit: 86%
- Physical benefit: 71%
# Results

<table>
<thead>
<tr>
<th>Domain</th>
<th>Stroke Impact Scale - % of patients increasing by at least 10 points</th>
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<tbody>
<tr>
<td>Physical Strength</td>
<td>33.3</td>
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<tr>
<td>Cognition</td>
<td>43.8</td>
</tr>
<tr>
<td>Mood</td>
<td>43.8</td>
</tr>
<tr>
<td>Communication</td>
<td>35.3</td>
</tr>
<tr>
<td>Activities</td>
<td>31.3</td>
</tr>
<tr>
<td>Mobility</td>
<td>18.8</td>
</tr>
<tr>
<td>Hand use</td>
<td>56.3</td>
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<tr>
<td>Participation</td>
<td>62.5</td>
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</tbody>
</table>
Results

• 100% of carers reported an improvement in their own wellbeing and respite from their role as carer.

• 100% of carers reported improved relationships with their patient as a result of participating alongside them.

• HICSS staff reported gaining inspiration (80%), team morale (70%) and renewed relationships with patients (60%).
Testimonials

‘I feel I am walking so much better and want to do more now. I am also sleeping better which I feel is from relaxing me playing the music.’

– Patient

‘It made me feel I wasn’t the only one in my position. Caring can be a lonely path at times and you can feel sad.’

– Carer

‘I found this project inspiring and energising. It has re-ignited my own personal interest in music, which has helped my wellbeing, health and ultimately my work. It has made me re-evaluate how we work with patients and the priorities we have.’

– HICSS Staff
Lessons Learned

• It took patients (and staff) time to settle into the sessions and begin taking advantage of the therapy opportunities.

• Staff rotas are necessary to ensure staff can plan well in advance to fit in sessions around duties.

• Musical execution can take precedence over therapy for patients, so it is important to keep reviewing goals.

• There are opportunities for developing more techniques for specific goals, especially speech & language rehabilitation.
• HICSS staff are using musical techniques and instruments in one to one care, and beginning a drumming group.

• Patients have purchased their own instruments including clarinet, guitar, and electric keyboard.

• One patient has begun making cellos.

• One patient has returned to calligraphy.
Future

- Long-term programme to allow enough time for meaningful improvement
- Incorporate more patients from rehabilitation units
- Focus on progression into community groups and unsupported hobbies
- Involve external evaluator(s) to enable more clinical baseline comparisons of all patients
- Include further training for clinical staff and university partners to develop work force
Further Information

Full evaluation report, programme guide, film and presentation slides are available on [www.rpo.co.uk/strokestra](http://www.rpo.co.uk/strokestra)

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