



STROKESTRA®

Holistic stroke recovery through
group creative music-making



STROKESTRA® is the Royal Philharmonic Orchestra's (RPO) pioneering arts and health programme. It uses group creative music-making alongside professional musicians and clinicians to support holistic recovery for stroke survivors and their families.

Devised and delivered with clinicians in Hull, northeast England, in response to the high prevalence rate of stroke in the local population, the programme uses specially adapted musical techniques and activities with built-in rehabilitation benefits to address participants' physical, cognitive, social, emotional, and communication needs.

EXECUTIVE SUMMARY

First developed in 2014, the programme has proved successful at supporting recovery across the domains of stroke recovery. The pilot programme service evaluation found:

- **86%** of patients felt the sessions **relieved disability symptoms**, citing improved sleeping, reduced anxiety, fewer dizzy spells and reduced epilepsy symptoms.
- **91%** of patients reported **social benefits**, including improved relationships and communication skills.
- **86%** of patients indicated that the project provided **cognitive benefits**, including reports of increased concentration, focus and memory.
- **86%** of patients felt the project provided **emotional benefits**, citing increased confidence, morale and a renewed sense of self.
- **71%** of patients achieved **physical improvements**, including improved walking, standing, upper arm strength and increased stamina.
- **56%** of patients achieved at least a 10-point improvement – considered a clinically significant level – on the **hand-use** section of the Stroke Impact Scale. **33%** achieved a similar improvement in the **physical strength** section.
- **100%** of family caregivers reported improvements in **wellbeing**, including respite from their role as a carer and **improved relationships** with their relative after participating alongside them.

Eight years on, the programme has turned into a model that can be replicated and adapted to suit the needs of different contexts, partners and locations worldwide.

The programme has continued to expand, first developing into a longer-term model in Hull in partnership with the stroke team at City Health Care Partnership. Adaptations were made to meet the complex local landscape, including working in residential stroke units for patients who still require 24-hour clinical care, and providing non-clinical sessions for stroke survivors no longer on clinical caseloads.

Consultancy work with other stroke teams in the UK and around the world continues to refine the programme model and activities, adapting the programme to work in different contexts such as acute and hyper-acute stroke wards and with additional partner expertise, including Neurologic Music Therapists (see case studies on page 7).

HOW IT CAME TO BE

First posited during a meeting with the local government, Public Health and the RPO in 2014, the programme began with a six-month research and development phase which brought together a multi-disciplinary team of stroke clinicians – including physiotherapists, occupational therapists, clinical psychologists, nurses and healthcare assistants – with RPO musicians and Creative Leader Tim Steiner to share knowledge and identify areas of cross over between the two teams.

An initial literature review identified a wide range of potential benefits from making and listening to music for people with brain injuries: physical benefits such as improved gait, limb function and strength; cognitive improvements, especially regarding processing and memory; communication benefits, including improved fluency; and social and emotional benefits including decreases in levels of depression and anxiety, reduced social isolation and increased feelings of belonging¹.

Excited by the potential to offer a wide-reaching approach to stroke recovery, the partners then spent four months working collaboratively to devise and modify musical activities to maximise the rehabilitation impact of each. Creative workshops allowed clinicians to experience music-making techniques such as conducting, singing, playing instruments, call-and-response rhythms, improvisation, groove-based work and more. The teams then considered the specific needs of stroke survivors with various disabilities and devised adaptations to address these through a variety of musical techniques. A range of new approaches were adapted, each providing rehabilitation work hidden beneath a fundamentally useful musical activity.

Through these collaborations, a structured programme model emerged and was piloted in 2015 with 50 stroke survivors and family-member caregivers. A service evaluation led by the clinical team found a range of benefits across the many domains relevant to stroke survivors. It signalled the start of this new, successful programme model of collaborative stroke recovery using group creative music-making alongside professional musicians and clinicians.

¹Visit rpo.co.uk/strokestra for the full literature review and list of references.

HOW IT WORKS

- Patients are referred by clinicians, who work together to identify individual stroke recovery goals to work towards through the project. Goals may relate to any stroke recovery need.
- Family caregivers are also invited to attend as equal participants, taking part in the creative process and experiencing a positive, non-care-related opportunity with their relative.
- Participant groups commit to a 'term' of activity, lasting four to five months.
- Monthly projects run by RPO teams feature 3 musicians and a creative leader facilitating two days of workshops. Clinicians participate alongside patients, and give advice and support to help maximise the therapeutic benefits of each activity. Clinicians are also encouraged to suggest adaptations or new activities to the whole group.
- Shorter interim projects run by clinicians and individual 'homework' tasks invite participants to continue working towards their musical and rehabilitation goals between project visits.
- Terms are progressive, with music and rehabilitation mastery taking shape across successive visits.
- Each term culminates in a celebratory performance featuring the music developed during the term, providing a communal goal.



KEY LESSONS

- **The better the music, the higher the impact** – the quality of the musical output is paramount to driving participant engagement and success. The musical grounding provided by the RPO musicians, as well as the opportunity to meet and make music alongside world-class professionals, gives participants motivation they may not otherwise experience. This includes attending and working during sessions, but also working harder in therapy outside of sessions to enable mastery of new musical techniques to contribute to the high-quality musical creations.
- **People shouldn't be comfortable 100% of the time** – in contrast to some community music initiatives where the aim is to make everyone as comfortable as possible throughout the creative process, STROKESTRA® relies on making people feel able to work on things that are difficult. Success is not instant, and the programme aims to push people out of their comfort zone while providing the support and framework to eventually master the musical and recovery goals they are working towards.
- **The balance of clinical and musical aims is paramount** – the most effective model includes an equal partnership between the music and clinical teams, with both feeling empowered to steer and adapt sessions as required. If the programme leans too far to the artistic side, stroke recovery won't be fully maximised. If the programme becomes too clinical, the creative motivation and fun of the programme are diminished, thus reducing participant engagement and ultimate results.
- **Top-down support is critical to start; on-the-ground teams make the programme run** – the partnership with clinicians and clinical teams is crucial to the programme's success. Initial support for the programme must be sought at the highest levels through evidence and advocacy so services can be given the time and space required to engage with the programme and make it fit for each clinical context. Once the programme is agreed, however, the on-the-ground staff are essential to its success or failure, referring and guiding participants through the programme and ensuring sessions operate at maximum clinical potential.



Credit: Paul Leeson Taylor



Credit: Nick Rutter

CASE STUDIES: ADAPTING TO LOCAL CONTEXTS

STROKESTRA® Orlando: Dr. Phillips Center for the Performing Arts – Orlando, Florida, USA

In September 2022, the RPO team partnered with Dr. Phillips Center for the Performing Arts in Orlando, Florida, to share the programme with clinicians and patients from AdventHealth. Operating in a range of in- and out-patient settings, AdventHealth includes a multi-disciplinary team of clinicians similar to the UK, but with the addition of board certified music therapists (MT-BC) trained in Neurologic Music Therapy (NMT). NMTs train as both musicians and clinicians and specialise in using music to support neurologic recovery. Over two days, the teams were able to share practice, identify similarities and differences, and discover how the two ways of working can complement each other.

The involvement of professional orchestral musicians on STROKESTRA® provides a clearly non-clinical musical incentive for participants, which can provide additional motivation. The ensemble nature of STROKESTRA® was also valued by the MT-BC/NMTs, who typically work with patients in their settings either individually or in smaller groups. NMTs were invaluable in adapting and extending musical techniques to maximise benefits for participants' specific goals. This was particularly evident with regards to using singing to identify and support participants' speech and language and cognitive needs.

The partners are currently working to develop a sustainable model of STROKESTRA® for Florida, working with local clinicians and musicians.

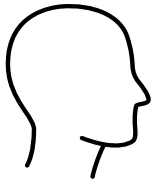
STROKESTRA® UCLH: University College London Hospitals, London, UK

In September 2023, a collaboration with University College London Hospitals NHS Foundation Trust (UCLH) in central London brought STROKESTRA® to acute and hyper-acute stroke survivors for the very first time. Partnering with the stroke team at the National Hospital for Neurology and Neurosurgery, a three-day project introduced STROKESTRA® to clinicians before working with patients still in hospital following their stroke.

Patients being earlier on in their stroke recovery highlighted a range of necessary adaptations around programme structure and aims. Participants were often still experiencing medical challenges that meant fatigue and concentration were more severely impacted, necessitating shorter intensive sessions and more flexibility in attendance. This meant goals were better focused on what participants could achieve in individual sessions rather than expecting progress across several. Sessions on the wards were also necessarily adapted, with a heightened focus on mood lifting and general engagement through listening and singing, to reach patients still experiencing the immediate aftermath of their strokes.

Both on the ward and in group work, clinicians agreed the programme adds additional benefit to patients' recovery while in hospital, and aim to develop ongoing work in future.

STROKESTRA® IN NUMBERS 2015-2023



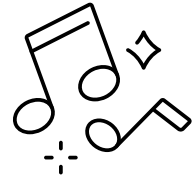
219

Unique Patients



102

Unique Relatives



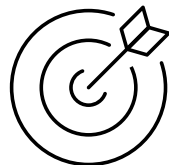
210

Number of Sessions



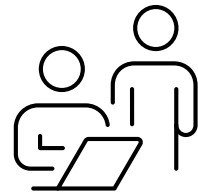
387

Number of Hours



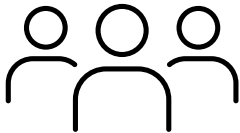
2594

Total Attendances



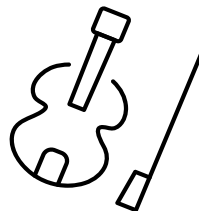
62

Unique Staff



20

Students trained



12

Public Performances



1593

Audience

With thanks to STROKESTRA®

funders past and present:

Stavros Niarchos Foundation (SNF)
Garfield Weston Foundation
Dunhill Medical Trust
Hull Public Health
Help for Health
Kirby Laing Foundation
The Rayne Foundation
American Friends of the RPO
The Austin & Hope Pilkington Charity
Hull & East Riding Charitable Trust

ΙΣΝ / SNF

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