

**VISTA-Rehab:** The rehabilitation section of the Virtual International Stroke Trial Archive (VISTA-Rehab) is an archive of information collected from individual stroke patients who have taken part in stroke rehabilitation trials from around the world. This collaborative resource provides the stroke research community with cost effective opportunities to conduct research on large datasets. To date, the archive includes anonymised data on more than 10,000 patients (from over 40 stroke rehabilitation trials). These data have been used to investigate the natural recovery of visual problems following stroke, the inclusion (and retention) of people with communication impairments in trials and the degree of recovery from these impairments following stroke.



**Systematic Reviews:** The NMAHP Research Unit is a lead producer of Cochrane Systematic reviews of nursing and AHP led stroke rehabilitation interventions. We have produced key reviews in relation to vision, upper limb function, aphasia and cognition after stroke. Our reviews aim to provide a succinct summary of all the relevant evidence providing clinicians with a 'one-stop-shop' relating to evidence based rehabilitation. We are leading on the conduct of the Cochrane Stroke Group's first Cochrane Overview of upper limb rehabilitation interventions with the aim of synthesising best evidence for arm function problems and providing an accessible summary of the evidence which can be used to aid clinical decision making and improve patient care.

**Meta-analysis of continuous outcomes:** Conventional approaches to meta-analyses in systematic reviews are not well suited to many of the naturally skewed outcomes used in stroke rehabilitation research. Working with statisticians at the Edinburgh MRC Hub for Trials Methodology Research we aim to develop approaches that will ensure we can summarise the available evidence from stroke rehabilitation trials as rigorously as possible.

**Sharing our findings:** We aim to conduct research which is clinically relevant and ensure the results are accessible to stroke survivors, carers and health professionals. We disseminate our research findings in peer reviewed academic papers, professional journals, newsletters and presentations at conferences and meetings. Our lead role in the development of the Database Of Research In Stroke (DORIS; [www.askDORIS.org](http://www.askDORIS.org)) has resulted in providing easy access to best evidence for rehabilitation after stroke.



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## Stroke Rehabilitation Research Programme

### Background

The clinically themed Stroke Rehabilitation Research Programme within the NMAHP Research Unit specialises in the development, conduct and delivery of high quality research relating to the effectiveness of stroke rehabilitation interventions. Our workstreams focus on informing and improving the effectiveness of basic care and developing rehabilitation interventions that address the needs of stroke survivors as they adapt to life after stroke. Our work has been supported by a range of funders including the Chief Scientist Office (CSO), Chest Heart and Stroke Scotland (CHSS), European Cooperation in Science and Technology (COST), the National Advisory Committee for Stroke, Royal National Institute for the Blind (RNIB) and the Stroke Association.

A key component of specialist stroke rehabilitation services is the multidisciplinary approach to providing care and treatment after a stroke. Similarly, our stroke rehabilitation research team are multidisciplinary in nature. Many are experienced health professionals. Consequently, our research is strengthened and informed by our varied clinical backgrounds which include nursing, physiotherapy, occupational therapy, health psychology, dentistry, optometry and speech and language therapy.

### Our Aims

The aim of the Stroke Rehabilitation Research Programme is to improve care of stroke survivors by producing and disseminating relevant high quality evidence relating to the effectiveness of stroke rehabilitation interventions which can be translated into practice. To fulfil this aim we:

- target stroke survivor, carer and clinician based research priorities, thus addressing the issues that matter most to those affected by stroke,
- develop, conduct and deliver high quality research into the effectiveness of stroke rehabilitation interventions, based on identified research priorities,
- foster collaborative links with expert stroke survivors, carers, clinicians, academics and researchers to ensure relevant and translatable research results and evidence and
- improve the quality of future research by developing methods which take into account the complex nature of stroke rehabilitation research.



Improving health through research

## Communication

Communication is central to our identity and our interactions with others. Communication problems affect a third of people who have a stroke. The most common communication problems are an impairment of language (aphasia) or an impairment of the muscles required to produce speech (dysarthria). Communication research is a priority for stroke survivors. Our research highlighted the psychosocial impact of dysarthria and contributed to the development and evaluation of a new group-based treatment programme. Our substantial systematic review demonstrated the effectiveness of speech and language therapy (compared to no therapy) for aphasia. Funded by COST we are leading a collaborative project to develop an international network of aphasia research experts which will further support aphasia research.



## Oral Health Care

A clean mouth and teeth is a basic need which can be difficult to achieve in the early days following a stroke. Our systematic review research has shown that there is little evidence to indicate the best approach to supporting patients' oral care in hospital. Our survey found that nursing staff in stroke care settings received very little training, access to tools and equipment. Funded by CHSS, we developed an enhanced package of care designed to improve the oral health care provided to patients in hospital after a stroke. Supported by the Stroke Association we are conducting a multi-site clinical trial which will evaluate the clinical and cost-effectiveness of our enhanced package of oral health care.



## Vision

Visual problems are common after a stroke and have been identified as a research priority by stroke survivors, carers and health professionals. With funding from the RNIB, we completed three systematic reviews of the evidence for interventions for visual field defects, eye movement disorders and age-related visual problems after stroke. In general, there was a lack of high quality evidence to support interventions for any of these visual problems after stroke. We also explored the services and treatments stroke survivors receive in Scotland if they experience a visual problem after stroke. We found a lack of staff training and inconsistencies in practice. With funding from the Stroke Association we are now investigating the effect of visual scanning training for visual field defects, and we are collaborating in a clinical trial of prisms for patients with visual field defects.



## Upper Limb

Around half of stroke survivors still have impaired arm movement and function six months after stroke. We have completed three systematic reviews to explore the effect of different treatments to improve arm function after stroke. Funded by the CSO, we are "overseeing" systematic reviews relating to treatments for arm function. The findings will aid clinical decisions about the best treatments to improve arm function. Our other ongoing studies investigate the effect of gaming devices (such as the Nintendo Wii), cognitive (executive function) processes and spasticity management on upper limb and functional recovery.



## Continence

Some people develop bladder or bowel problems associated with their stroke. Such problems can severely affect people's quality of life, comfort, sleep, self esteem and daily life. Funded by CHSS, we carried out a three part study which established the current approaches to addressing continence problems in stroke care settings and reviewed the different ways of identifying urinary incontinence. We then developed and implemented an enhanced stroke-specific tool to help staff screen, diagnose and support people with continence problems after stroke. Our research confirms there is an urgent need to develop better ways of identifying stroke survivors living with continence problems and to determine the effectiveness of our enhanced package of continence care.



## Conceptual and Methodological Research Activities

**Involving stroke survivors and their families.** We actively seek to include the views of stroke survivors and their families in all aspects of our research through our Stroke Rehabilitation Research Advisory Group. In partnership with  the James Lind Alliance, we led a national project to identify stroke survivors', carers' and health professionals' shared Top 10 research priorities for life after stroke. Throughout our research activities stroke survivors and carers have contributed to establishing research priorities, project applications, study design, the development of project materials, interpretation of research data and dissemination activities through co-authored papers and conference presentations. We believe the relevance and value of our research is continually enhanced through the contribution of stroke survivors and their families.

**Involving people with aphasia:** People with aphasia have at times been excluded from stroke rehabilitation research. Throughout our research we aim to highlight the importance of including this subgroup of people who have experienced a stroke and the implications this has on the clinical relevance of interventions developed and evaluated.