move to a better ‘health-span’
An overview of the health consequences of physical inactivity and age-related musculoskeletal decline.

improving the take up of community exercise
In this article we look at a novel in-reach hospital project to bring exercise professionals into an acute stroke unit.

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Exercise, exercise, exercise seems to be the key to improving health and longevity and a repeating theme in academic and popular literature. There are challenges, however, in terms of ability, motivation, delivery and determining the optimum intensity and type of exercise. This issue of Innov-age goes some way to help us through the myriad of literature on this topic. Key messages that spring out for me are that:

- If we don’t exercise we lose muscle function, become more sedentary and reduce our life span.

- Exercise, particularly in older age, does not have to be intense and anything that reduces the time we are sitting down has a positive impact.

- Enhancing what we do at home with community based exercise programmes gives us extra added benefit.

- Community exercise programmes don’t have to be led by clinical specialists but appropriately trained exercise professionals have a key role to play.

- Stroke exercise programmes that are begun in hospital have a greater impact if appropriately supported and followed through into the community.

There are many other key messages about the benefits of exercise that shine through in this issue of Innov-age and it makes really interesting reading. As I write this editorial however, I realise I’ve been sat at the computer all day and I need to spend some time moving around – so until next time….

Jackie Oldham
Honorary Director, Edward Centre for Healthcare Management Research
We need to move to a better health-span

Paul Greenhaff is Professor of Muscle Metabolism and Head of the Metabolic and Molecular Physiology research group at the University of Nottingham, which spans the Schools of Life Sciences and Medicine and has an international research standing in the fields of exercise and muscle metabolism. He is Deputy Director of the MRC/Arthritis Research UK Centre for Musculoskeletal Ageing Research, a joint initiative between the Universities of Nottingham and Birmingham, and is also an active researcher in the Arthritis Research UK Centre for Sport, Exercise and Osteoarthritis at Nottingham. Research by Paul’s group is focussed on the loss of muscle mass and the dysregulation of metabolism in immobilisation, inflammation, ageing and disease, and strategies (including exercise) to offset these effects.

We are living longer, but healthy life expectancy has not kept pace.
We are an ageing population with birth rate falling and life expectancy increasing. By 2035 it is projected that those aged 65 years and over will account for 23% of the UK population. Furthermore, by this time the number of people aged 85 years and over will be close to 2.5 times greater than in 2010, accounting for 5% of the total UK population (Office of National Statistics, 2012). This pattern of change in population demographics is common across Europe. In keeping with this, approximately 7% of the EU’s gross domestic product was used to provide healthcare for older people in 2010, and it is predicted in the 2012 EU Ageing Report that this figure will increase by more than 8% by 2060 (European Commission, 2011). Of significant note, the 2012 EU Ageing Report also revealed that the use of healthcare services in the run up to death impacts on expenditure more than ageing itself. Indeed, increased life expectancy does not necessarily increase health expenditure, but ill health in the final part of life certainly does.

In short, there is very good evidence that healthy life expectancy has not kept pace with increased longevity, such that on average, women can expect to spend the last 11 years of life in ill health and men the last 6 years.

It is imperative therefore that research on the “normal” ageing process that will inform strategies for improving healthy lifespan is prioritised, thereby reducing pressure on the health and social care systems and improving quality-of-life.

Musculoskeletal decline with age
Age-related musculoskeletal decline is a significant contributor to the reduction in health-span in old age and has major public health consequences, including increased direct risk of falls and fracture (hip), insulin resistance, osteoarthritis (OA) and pain, and longer rehabilitation following injury or surgery. According to Arthritis Research UK’s Musculoskeletal Health report (Arthritis Research UK, 2014), musculoskeletal conditions now account for the largest proportion of years lived with disability in the UK. Each year 20% of the UK population sees a GP about a musculoskeletal problem and the NHS spends a further £5 billion treating musculoskeletal decline. The Institute for Health Metrics and Evaluation’s Global Burden of Disease study (www.healthdata.org/gbd) highlights musculoskeletal conditions as the leading cause of disability globally, and in the UK.

Osteoarthritis is the prevalent age-related musculoskeletal disease and the majority of individuals over the age of 65 have radiographic or clinical evidence of Osteoarthritis, which normally manifests as joint pain and exercise intolerance. Additionally, several chronic non-communicable diseases are linked with age related musculoskeletal decline, which accelerates disease progression, such as chronic obstructive pulmonary disease and obesity.
Physical inactivity: an under recognised and poorly understood issue

It is becoming recognised that the global adoption of a less physically active lifestyle probably plays a central role in accelerating musculoskeletal decline with age, e.g. muscle mass loss leading to weakness and frailty. Furthermore, it is clear that adoption of a more physically active lifestyle can have a major positive impact in reducing chronic disease progression, such as cardiovascular disease, cancer and type 2 diabetes (Blair, 2009), and compromised mental health (Windle et al., 2010). Of major importance, however, is that we cannot yet differentiate between the amount and nature of physical activity needed to offset age related musculoskeletal decline, and that needed to blunt chronic disease progression. Whilst on the face of it, one could reasonably argue that we should not be concerned by this point because any mode and quantity of physical activity is likely to be positive for both young and older people, closer scrutiny reveals an important issue.

Current government physical activity guidelines for older people are set at 150 minutes per week of moderate-intensity physical activity, such as brisk walking, as well as resistance training to improve muscle strength on at least two days a week (UK Chief Medical Officers report, 2011). However, it is estimated, albeit based on self-report data, that ~50% of older individuals are failing to meet these government recommended physical activity guidelines (Hallal et al., 2012), perhaps because of the time and effort commitment required? Notably, despite the existence of government physical activity guidelines, which are based on principally stimulating cardiovascular health benefit, we currently do not know the minimal amount of physical activity necessary to confer musculoskeletal health benefits. Moreover, there is little or nothing known about the patterns of sedentary behaviour in older adults (Hallal et al., 2012), which is important because it is emerging that extended periods of sitting have major negative health impact. Many of the physiological and metabolic events associated with impaired quality of life, falls and hospitalisation in older people have been attributed to age related declines in muscle mass and quality (defined as sarcopenia). Yet, despite numerous reputed causes of sarcopenia (e.g., dampened anabolic responses of muscle to an exercise stimulus (Kumar et al., 2009) and protein nutrition (Cuthbertson et al., 2005), muscle insulin resistance and fat deposition (Srikanthan et al., 2010) and loss of muscle strength (Jones et al., 2004), all of these negative adaptations can be induced in the space of just a few days in young people by simply exposing them to complete physical inactivity (e.g. bed rest). This is compelling evidence in support of the stance that inactivity is a major driver of age-related musculoskeletal decline. Indeed, when older people were asked to reduce their habitual daily step count to approximately 1500 steps per day for 2 weeks, increases in muscle anabolic and whole-body insulin resistance were evident (Breen et al., 2013).

Inactive lifestyles arguably represent the biggest current global public health problem from the perspective of age related musculoskeletal decline and chronic disease development. Notably, however we currently do not know the minimal amount of physical activity necessary to confer musculoskeletal health benefits. Importantly, there is currently only poor appreciation that inactivity drives significant negative physiological adaptation, i.e. being inactive does not denote maintaining the status quo but rather accelerated health decline. Research efforts must therefore be made to address these knowledge gaps and thereby reduce the pressure on the health and social care systems by providing quantitative and evidence based physical activity guidelines. This will improve the quality-of-life as we age, such that we can support healthier lives in the face of increased longevity.

References
Exercise Professionals as Members of the Multidisciplinary Acute Stroke Unit Team improve the take up of Community Exercise

Mark Smith was a Chief Scientist Office Research Training Fellow and completed an MPhil at Queen Margaret University, Edinburgh in 2009. He represents physiotherapy and rehabilitation on the Scottish Government National Advisory Committee for Stroke and sits on the Scotland Committee of the Stroke Association. His particular clinical/research interests include the hemiplegic shoulder, pain after stroke, exercise after stroke, treadmill training and recovery of walking after stroke. His current responsibilities are to develop the stroke rehabilitation pathway in Lothian, to provide clinical consultancy and guidance for colleagues, to educate at under and postgraduate levels and to pursue research topics in stroke rehabilitation.

Professor Mead is a graduate of Clare College, Cambridge. She trained in stroke medicine in Manchester, England and Auckland, New Zealand. She was appointed Senior Lecturer in Geriatric Medicine at University of Edinburgh and Honorary Consultant Stroke Physician in NHS Lothian in 2000 and promoted to a personal chair in 2012. Professor Mead has an international reputation for research into “Life after Stroke” and has published over 100 papers. She is co-principal investigator of the FOCUS trial, a multicentre trial of fluoxetine for stroke recovery. She is editorial board member of two Cochrane Collaboration Groups and the International Journal of Stroke.

Reduced levels of physical activity after stroke are evident even in patients who do not appear severely impaired (Billinger et al., 2014). This may result in significant risks to future health, reduced functional ability and increased care implications. Physical fitness training after stroke reduces disability, improves function and balance, and probably reduces the risk of recurrent vascular events, as well as improving physical fitness (Saunders et al., 2013).

The evidence for improving physical fitness in stroke survivors, and the process of developing strategies both nationally and locally to capitalise on that evidence, has been evolving for some years (Table 1) and has been incorporated into multiple national and international guidelines. These include: Scottish Intercollegiate Guidelines Network 118 (2010); Intercollegiate Working Group, Royal College of Physicians (2012); American Heart Association/ American Stroke Association (Billinger et al. 2014); Scottish Government’s ‘Stroke Improvement Plan’ (The Scottish Government, 2014). The latter advocates that stroke survivors should be able to access community exercise and fitness training.

Table 1. Key Milestones and how they related to the development of Exercise after Stroke (EAS) Services in Lothian.

<table>
<thead>
<tr>
<th>Year</th>
<th>Key Milestone</th>
<th>Implication</th>
<th>Source</th>
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</thead>
<tbody>
<tr>
<td>2004</td>
<td>Cochrane Review 12 trials 289 participants</td>
<td>First Cochrane systematic review of EAS RCTs.</td>
<td>Cochrane Library</td>
</tr>
<tr>
<td>2007</td>
<td>STARTER randomised controlled trial of exercise versus relaxation after stroke</td>
<td>First clear evidence that particular doses of circuit training improved physical fitness after stroke.</td>
<td>Mead et al., (2007)</td>
</tr>
<tr>
<td>2008</td>
<td>EAS Course developed</td>
<td>First evidence-based course, validated by Queen Margaret University, Edinburgh.</td>
<td>EAS website: <a href="http://www.laterlife">www.laterlife</a> training.co.uk/courses/exercise-for-stroke-instructor/</td>
</tr>
<tr>
<td>2009</td>
<td>EAS pathway developed in partnership with Edinburgh Leisure</td>
<td>Referral of patients with stroke to EAS following hospital discharge.</td>
<td>NHS Lothian Stroke Managed Clinical Network: <a href="http://www.lothianstrokekmn.scot.nhs.uk/journey/Pages/default.aspx">www.lothianstrokekmn.scot.nhs.uk/journey/Pages/default.aspx</a></td>
</tr>
<tr>
<td>2009</td>
<td>EAS Course endorsed by Skills Active</td>
<td>Taught at NEPS Level 4 by Later Life Training (LLT).</td>
<td>LLT website: <a href="http://www.laterlife">www.laterlife</a> training.co.uk/courses/exercise-for-stroke-instructor/</td>
</tr>
<tr>
<td>2009</td>
<td>EAS included in “Better Heart Disease and Stroke Action Plan”</td>
<td>Recommendation utilise the LLT EAS Course in all Scottish Health Board areas.</td>
<td>Scottish Government (2009)</td>
</tr>
<tr>
<td>2011</td>
<td>Edinburgh &amp; Lothians Health Foundation (ELHF) grant</td>
<td>Funded 15 REPS Level 4 exercise professionals to train in stroke across Lothian.</td>
<td>NHS Lothian Stroke Managed Clinical Network: <a href="http://www.lothianstrokekmn.scot.nhs.uk/journey/Pages/default.aspx">www.lothianstrokekmn.scot.nhs.uk/journey/Pages/default.aspx</a></td>
</tr>
<tr>
<td>2012</td>
<td>Pan Lothian EAS pathway</td>
<td>Patients with stroke from all four Lothian Local Authority areas able to access evidence-based EAS.</td>
<td>NHS Lothian Stroke Managed Clinical Network: <a href="http://www.lothianstrokekmn.scot.nhs.uk/journey/Pages/default.aspx">www.lothianstrokekmn.scot.nhs.uk/journey/Pages/default.aspx</a></td>
</tr>
<tr>
<td>2013</td>
<td>Edinburgh &amp; Lothians Health Foundation (ELHF) grant</td>
<td>Funding to develop a pilot hospital in-reach EAS service to Acute Stroke Unit by REPS Level 4 instructor.</td>
<td>NHS Lothian Stroke Managed Clinical Network: <a href="http://www.lothianstrokekmn.scot.nhs.uk/journey/Pages/default.aspx">www.lothianstrokekmn.scot.nhs.uk/journey/Pages/default.aspx</a></td>
</tr>
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</table>
Physical fitness training after stroke can be implemented through community exercise after stroke services, delivered by trained exercise professionals (Mead and van Wijck, 2011). Exercise professionals in Lothian attended the Later Life Training Stroke Course which is endorsed by Skills Active. Training was funded by the Edinburgh and Lothians Health Foundation (ELHF). The participants are now on the Register of Exercise Professionals (REPS) at Level 4, and have the necessary knowledge and skills to deliver exercise interventions to stroke survivors. They currently provide community based exercise, in leisure centres across Lothian for stroke patients leaving hospital in an approach analogous to the well-established cardiac rehabilitation service. The exercise after stroke pathway was developed through close collaboration between hospital stroke services and leisure services and requires exercise referral to be made by healthcare professionals.

Around 1400 people are admitted to hospital with a stroke in Lothian each year and many of those require on-going community rehabilitation after discharge. People with stroke often report that their inpatient rehabilitation was of a high standard but that there was little available for them after discharge (Mead and van Wijck, 2011). However, not all suitable patients discharged from acute stroke units in Lothian took up community-based Exercise after Stroke services.

Stroke survivors may be disadvantaged in accessing fitness services because of specific neurological and functional difficulties which can affect their ability to exercise (Morris et al., 2014). Symptoms such as hemiplegia, spasticity, dyspraxia, aphasia and cognitive dysfunction may impact on mobility, balance, functional ability and access for stroke survivors. However, exercise can be adapted to take into account these impairments. Stroke survivors may have other concerns about exercising e.g. fear of recurrent stroke, fatigue and anxiety.

Promoting the benefits of Exercise after Stroke services can be challenging for healthcare professionals in an acute hospital setting where the main focus tends to be the delivery of care, rehabilitation and rapid discharge from hospital. In Edinburgh a novel hospital in-reach project aimed to bring exercise professionals into the acute stroke unit to help bridge the gap between acute stroke unit care and community Exercise after Stroke services, with the aim of increasing the uptake and compliance. The modification to the pathway is shown in Figure 1.

Contact with an exercise professional whilst on the ward could facilitate uptake of exercise in the community by:

- promoting the benefits of exercise and addressing stroke survivors’ fears and concerns whilst on the acute stroke unit;
- using a brief behavioural change intervention to increase activity;
- participating in fitness training prior to hospital discharge, using fitness equipment purchased to complement existing physiotherapy equipment;
- raising awareness of the benefits of exercise referral for stroke patients amongst health care staff.

The ELHF then funded a REPS Level 4 stroke specialist exercise professional employed by Edinburgh Leisure for one year which enabled early exercise intervention in the acute stroke unit setting. Training and education was offered to ward staff to help embed the work in the ward routine. Standard NHS induction was undertaken with the exercise professional and specific attention was paid to inclusion within the team’s day to day routines and to agree the referral processes. The exercise professional then worked closely with all members of the multi-disciplinary team to best understand

...continued on next page

![Referral pathways into community-based Exercise after Stroke](image-url)
individual stroke patients’ physical, cognitive and communication difficulties and to tailor exercise for them following referral.

The exercise professional aimed to see every eligible stroke survivor before or immediately after discharge and address any concerns about exercise. The exercise professional delivered a “taster” exercise session in the ward, using equipment installed in a physiotherapy gym in the ward. This comprised a treadmill, a cycle ergometer and a weights/pulley machine of similar specification to that used in Edinburgh Leisure facilities.

The project spanned 12 months, from January to December 2014. The first three months were spent on induction, developing the referral system and associated documents, trying out exercise interventions, education of patients, agreeing the outcome measures. The subsequent six month period was spent operating the service at capacity, recruiting as many acute stroke patients as were able to exercise on the ward prior to discharge and then arranging to engage with them again in the community setting and signposting them into an existing Edinburgh Leisure pathway. The final three months were spent ramping down, following up participants, analysing data and considering future plans for the delivery of the service.

A doubling of previous referral rates and an almost four-fold increase in take-up of the intervention compared to previous use of community based Exercise after Stroke was observed. Individual sessions with the exercise professional on the acute stroke unit ranged, on average, between 30 minutes and one hour. The content of the sessions varied, but the main interventions were aerobic and bodyweight-resisted interventions. Participants reported feeling more confident to exercise independently in their local communities beyond the 12 week follow-up. There were no reported adverse effects or negative reports and qualitative feedback was highly positive.

These results show that it is feasible to bring exercise professionals into an acute stroke unit, integrate them into the multi-disciplinary stroke team and improve uptake of community exercise services.

The case mix was largely comprised of patients with relatively mild impairment and, as a result, shorter lengths of stay. These are often the very patients who may be ‘lost’ to the system after hospital discharge as their perceived longer term rehabilitation requirements are low, yet secondary stroke prevention through exercise is of key importance for this group. This project also increased awareness and usage of existing Exercise after Stroke services.

NHS Lothian has long enjoyed successful partnership working with Edinburgh Leisure and the other fitness service providers in Lothian. The service won the Best Innovation Award at the annual NHS Lothian Allied Health Professions (AHP) Conference in September 2014.

Future sustainability of the benefits of this intervention using other cost effective strategies are under consideration. These include recruiting established stroke survivors with experience of Exercise after Stroke as “exercise buddies” assisting newer patients being discharged from hospital to access fitness services locally across Lothian.

We acknowledge the hard work, skill and enthusiasm of our exercise professional, Andrew Heslop, and the support of his colleagues from Edinburgh Leisure, as well as the members of the multidisciplinary stroke team on the Acute Stroke Unit, Ward 101, Royal Infirmary of Edinburgh, whose willing engagement helped to make this work so successful.

References
Exergames – How to make physiotherapy fun

Emma Stanmore is a Lecturer in Nursing, based at the School of Nursing, Midwifery and Social Work, University of Manchester. Emma is a registered Nurse and qualified District Nurse and has worked in a variety of specialist nursing and clinical management roles, all related to the care of older people.

Fall-related injuries are the largest cause of accidental death in older people across Europe with 30% of people aged 65 and older, and 50% of people aged 80 and over falling at least once per year. Those at greatest risk for falls and hip fractures are residents of long term care facilities, accounting for 52% of all fall-related hospital admissions.

There is a robust body of evidence that demonstrates that specific strength/balance exercises can reduce falls (Gillespie et al., 2012). However, there is low uptake and adherence to exercise in the sheltered/home setting without support from therapists.

**Exergames** (exercise and computer games that use body movements as controls) has been developed in collaboration between The University of Manchester, Central Manchester University Hospitals NHS Foundation Trust and MIRA REHAB Ltd. They have been developed to improve function, prevent falls and increase exercise adherence for older people in the sheltered home setting.

Designed with users in mind, the views of older people were sought to ensure that the designs were appropriate. Furthermore, developments were based on best evidence strength and balance exercise (Otago and Postural Stability) currently used by therapists, are safe for older people (low impact, joint protective, improve function) and are at the right level in terms of speed and difficulty. They were also built upon the clinical rehabilitation tool, MIRA. This contains a patient management component, designed for doctors and physiotherapists, and can store detailed patient files, including statistical data obtained during rehab sessions.

Two focus groups made up of older people were held prior to the start of the design phase of the project, and, once completed, the Exergames were tested on volunteers in a clinical environment by physiotherapists in order to gain feedback. This data was of the utmost importance, as it offered adherence statistics, which is to say, the number of Exergames played, along with their frequency and duration, and progress statistics, such as the number of points scored, distance, speed, acceleration and overall activity level during the games. At the time this project began, the platform contained some Exergames, mainly for upper limb rehabilitation.

The feedback from the collaborators was very important, as the games were based on exercises that constitute best practice in terms of preventing falls. Feedback regarding gaming and interaction preferences for older people was also sought, as they were the primary target. This challenge was easily overcome by using a natural interaction sensor, Microsoft’s Kinect, with an easy to understand intuitive interface and by creating games with a simple interface, interesting content and adapted dynamics.

In terms of future plans, an online version of MIRA is to be developed which will enable remote monitoring by connecting clinics and users’ homes. It will contain Exergames for all types of rehabilitation, from lower limbs and back to speech, autism and cognitive specific therapies.

The Falls Prevention Exergames will continue to be developed and have been selected for funding as part of NHS England Small Business Research Initiative (SBRI) Healthcare Phase I, which will enable a further three more Exergames to be developed for the platform, in addition to a feasibility study.

See figure 1-3 for examples of developments to date.

For more information see a video of Exergames in use at [www.mirarehab.com/](http://www.mirarehab.com/).

*Figure 1*: Izzy the Bee requires squats or hip abduction movements for flying the bee in order to gather pollen and deposit it to the hive.

*Figure 2*: Powerhouse bid exergame utilises the ‘sit to stand’ exercise with users standing to place a bid and sitting down to continue bidding, competing with other auction attendees.

*Figure 3*: Atlantis game incorporates controlled balance exercises to control the submarine to study underwater life and dodge bombs.
MARIO: A new European research project to advance active and healthy ageing with use of service robots

A new European research project is about to start that will bring together a consortium of partners from academic institutions and industry across Europe, led by the School of Nursing and Midwifery of the National University of Ireland Galway (NUI Galway).

The MARIO project aims to manage active and healthy ageing through the use of caring service robots. It is funded by the European Union’s Horizon 2020 research and innovation programme, within the thematic section ‘Societal Challenge on Health, Demographic Change and Wellbeing.’ It assembles a team of international experts from academia, industry and dementia groups to work collaboratively in tackling the burdens imposed by dementia and developing innovative solutions using caring robots.

The project’s communication strategist, Prof. Kathleen Murphy of NUI Galway, explains: ‘MARIO is an exciting and innovative project that will make a huge difference to the lives of people with dementia. We will be working directly with people with dementia to ensure that the issues they see as important are addressed. Multi-faceted interventions will be developed, which will be delivered by humanoid robots.’

The 4 million euro project started on 1st of February 2015 and will last for 3 years. During this period three pilot studies of robots interacting with people with dementia will be undertaken. The first pilot will run in the west of Ireland, organised by NUI Galways’s School of Nursing and Midwifery, the second will run in Stockport, UK, organised by the city’s health care managers, while the third will run in Italy, organised by a leading research hospital, Casa Sollievo della Sofferenza, which is pushing research boundaries in comprehensive geriatric assessment. Project coordinator, Dr Dymna Casey of NUI Galway, says of these pilot studies: ‘all interactions with caregivers, persons with dementia, older persons and stakeholders will fully comply with standards-based medical assessment methodologies, and aspire to provide a truly user-led design ethos.’

The technology at the heart of MARIO is the robot Kompai, designed and developed by a consortium partner, the French company Robosoft. Other partners in the consortium will provide technological expertise in the areas of robotic applications and semantic computing. All the outcomes of the research will be made public. These are expected to be of great benefit to people with dementia as well as lead to commercial opportunities for cutting-edge technology companies. According to Prof. Murphy, ‘the project will follow an open doors communications policy – the project is funded by the European Commission and its results belong to all the citizens of the European Union.’

Stockport Council, a local municipality in the UK’s North West is very excited to be involved with this project and are especially keen to target and focus on the need to tackle isolation and also ensure that the needs of end users are driving the activities of Mario. Project Manager, Andy Bleaden from Stockport Council says ‘Project Mario will for the first time target linking robotic assistance and companionship as well as providing a vital tool to target geriatric assessment to help reduce isolation for people with Dementia.’

To find out more about this study please email: andy.bleaden@stockport.gov.uk

ECHAlliance is leading a Health Mission to China

A new European research project is about to start that will bring together a consortium of partners from academic institutions and industry across Europe led by the School of Nursing and Midwifery of the National University of Ireland Galway.

ECHAlliance is a unique organisation for China that brings together stakeholders working across the health and wellness marketplace, including service providers, pharmaceuticals, technology companies, and educational institutes. Working together with the Chinese Ministries of Health, Sport, and Social Services ECHAlliance is dedicated to bringing better standards of citizen care to China’s huge population.

The relationship with ECHAlliance, their European counterpart, provides access to the latest advances in technologies and services across Europe, USA and beyond and offers opportunities to do business in China and they are leading a Health Mission to China in July 2015 to coincide with Mobile World Congress (MWC) Shanghai 2015.

To find out more please visit: www.echalliance.com/echalliance-announce-two-exciting-developments-for-the-china-health-market/
Care Certificate

New standards for care workers will be officially introduced in March 2015. Employers are expected to implement the Care Certificate for all applicable new starters in health and social care from April 2015, replacing the Common Induction Standards and the National Minimum Training Standards.

Health Education England (HEE), Skills for Care and Skills for Health have worked together to develop the Care Certificate, designed to meet the requirements set out in the Cavendish Review. Following the Francis Inquiry, Camilla Cavendish was asked by the Secretary of State to review and make recommendations on the recruitment, learning and development, management and support of healthcare assistants and social care support workers.

The resulting report, published in July 2013, found that the preparation of healthcare assistants and social care support workers for their roles within care settings was inconsistent, and one of the recommendations was the development of a fundamental certificate of care.

To find out more please visit: www.nhsemployers.org/yourworkforce/plan/education-and-training

NIHR Multimorbidities in Older People Themed Call

This call is an initiative by the National Institute for Health Research (NIHR) in recognition of the need for further research-based evidence to support the delivery of best care to people with multimorbidities and to enable them to maintain their capabilities and quality of life.

Multimorbidity is defined as the co-occurrence of two or more chronic conditions in one person. Throughout the UK, health and other public services are facing a growing challenge due to the ageing of the population and the increase in the numbers of people with multimorbidity. Although there is a strong evidence base for the use of interventions and services for the management of single conditions, there is little evidence relating to the management of patients with multimorbidity, the delivery of safe and effective interventions and services and the risks associated with management of multimorbidity, e.g. due to polypharmacy.

The following seven NIHR-managed research programmes will be participating in the call: Efficacy and Mechanism Evaluation (EME), Health Services and Delivery Research (HS&DR), Health Technology Assessment (HTA), Invention for Innovation (i4i), Programme Grants for Applied Research (PGfAR), Public Health Research programme (PHR), and Research for Patient Benefit (RPB).

Research proposals must be within the remit of one of the seven participating programmes and applicants should carefully consider the remit described for each programme. Completed forms must be submitted by 20 May 2015. Funding decisions will be made around March 2016.

To find out more please visit: www.themedcalls.nihr.ac.uk/multimorbidities

Upcoming Events...

**NHS Confederation Annual Conference and Exhibition 2015** 3rd – 5th June 2015
The conference takes place in Liverpool just three weeks after the General Election and will help shape the health programme of the next Government. [www.nhsconfed.org/conference](http://www.nhsconfed.org/conference)

**Exercise Medicine** 19th – 20th June 2015
This two day conference at the Royal Society of Medicine includes themed sections on built environment, special populations, resistance training, digital health and exercise for specific conditions. [www.rsm.ac.uk/events/](http://www.rsm.ac.uk/events/)

**Achieving Quality End of Life Planning** 30th June 2015
This seminar aims to provide you with practical tools and useful ideas to help you develop your end of life planning strategy and ensure that you deliver high quality care for all of your patients. [www.sbk-healthcare.co.uk/component/jevents/eventdetail/613-/achieving-quality-end-of-life-planning?Itemid=168](http://www.sbk-healthcare.co.uk/component/jevents/eventdetail/613-/achieving-quality-end-of-life-planning?Itemid=168)

**Enhanced health in care homes, Implementing new models of care** 2nd July 2015
This one day conference at The King's Fund examines the new care model set out in Forward View, in which the NHS works in partnership with care home providers and local authority social services departments to develop new shared models of care and support. [www.kingsfund.org.uk/events/enhanced-health-care-homes](http://www.kingsfund.org.uk/events/enhanced-health-care-homes)
Promoting physical activity in older people: the ProAct65+ trial

Professor Steve Iliffe is an academic general practitioner who has worked in a large socially diverse inner-city group practice in North West London for 30 years. The first Professor of Primary Care for Older People in the UK, he is also Associate Director for the UK national co-ordinating centre for Dementias & Neurodegenerative Diseases Research Networks (DeNDRoN). His other roles include advisor to the German Geriatrics Research training programme funded by the Robert Bosch Foundation, and as a member of the Scientific Advisory Board of the Centre for Healthy Ageing in Copenhagen University. His research interests are in health promotion in later life and in mental health, particularly dementia syndrome. He is co-investigator of the ProAct65+ study, a five year multi-centre randomised controlled trial of exercise promotion for older people in general practice. Funded by the Health Technology Assessment, with 1200 participants this is the largest therapeutic trial of exercise to date.

Regular physical activity reduces the risk of cardiovascular disease, type 2 diabetes, osteoporosis and some cancers, and there is a clear relationship between physical inactivity and all-cause mortality. Older adults in the United Kingdom are currently advised to do at least 150 minutes of moderate intensity physical activity and two sessions of strength and balance exercises per week, but most of the older population do not achieve this.

The ProAct65+ trial was designed to test the effect on older people’s exercise behaviour of two evidence-based exercise programmes. Participants were recruited through general practices in London, Nottingham and Derby. Practices produced lists of patients aged 65 years and over using their electronic medical record system, and GP’s checked the records of patients for suitability for the study, using a list of exclusion criteria.

Patients aged 65 years and older who were independently mobile (with or without a walking aid) and physically able to take part in a group exercise class were eligible to join the study. Patients were excluded if they had experienced three or more falls in the previous year, had unstable clinical conditions, would be unable to follow instructions about exercise safely, or were receiving palliative care.

The trial had three arms:

1. A home based exercise programme - The Otago Exercise Programme (OEP)
2. A community based group exercise programme (Falls Management Exercise - FaME)
3. Usual care

The home based exercise programme (OEP) comprised 30 minutes of leg muscle strengthening and balance retraining exercises, progressing in difficulty, to be performed at home at least three times per week, plus walking for up to 30 minutes at a moderate pace twice weekly, for 24 weeks. Participants received an instruction booklet and ankle cuff weights (starting at 1kg) to provide resistance for strengthening exercises. The programme was tailored for, and introduced to participants by trained research staff in a group session or at participants’ homes if they could not attend the session. Where available, trained peer mentors visited participants at home to start the exercise programme and carried out a further home visits (as the participants required) and telephone contact.

The community based group exercise programme (FaME) comprised a one hour-long group exercise class in a local community centre with a maximum of 15 participants supervised by a postural stability instructor (PSI), and two 30 minute home exercise sessions plus walking (and instruction booklet) per week for 24 weeks. Participants were advised to walk twice per week for up to 30 minutes at a moderate pace. The programme included leg muscle strengthening and balance retraining that progressed in difficulty, progressive trunk and arm muscle strengthening, bone loading, endurance and flexibility training, functional floor skills and adapted Tai Chi.
Resistance bands and mats were used throughout the programme. Group exercises included 1) ret raining of the ability to get up from, and down to, the floor 2) floor exercises to improve balance, trunk and lower body strength and flexibility and 3) coping strategies to reduce the risk of complications resulting from a long lie on the floor.

In the usual care arm participants were not offered either the OEP or FaME programmes, but were free to participate in any other exercise unrelated to the trial.

The primary outcome of the trial was the proportion of participants reaching or exceeding the national recommended target of 150 minutes or more of moderate to vigorous physical activity per week 12 months after the cessation of the intervention.

**Secondary outcomes included:**

1. **Direct health benefits: like functional ability, psychological state, falls and fear of falling**
2. **Self-efficacy for exercise and participants’ judgement of the value or importance of physical activity**
3. **Health-related quality of life**
4. **The NHS and private (participant) costs of each exercise programme**

Each practice was allocated to a treatment arm once all participants within that practice were recruited. Safe exercise guidelines were followed, pre-exercise assessments were conducted and exercise intensity and difficulty were increased with caution to minimise the risk of injury. Adverse events and serious adverse events were assessed for seriousness, expectedness and causality, and monitored until they resolved, stabilised, or until it became clear that the study was not the cause. Written informed consent was obtained from all participants to participate in the trial.

Forty-three practices were recruited to the study and 1256 people aged 65 and over were randomised. Two thirds (830) remained in the trial 12 months after the end of the intervention period.

The proportions reporting at least 150 minutes of exercise per week rose from 40% to 49% in the home exercise group, 41% to 43% in the community exercise group, and 37.5% to 38% for those receiving usual care. Community exercise compared with usual care resulted in 15 minutes more moderate to vigorous physical activity reported per day 12 months after intervention. There was no such statistically significant increase in the home exercise group.

The community exercise group also demonstrated a statistically significant reduction in falls compared with usual care. There was no statistically significant difference in falls between the home and usual care groups.

Significant improvements were seen in balance confidence for both intervention groups at 12 months and both sets of participants were significantly less likely to dismiss exercise as not beneficial. There were no other statistically significant differences between intervention arms and the usual care arm in self-efficacy, mental and physical well-being, quality of life, balance confidence, falls risk or functional abilities though the community exercise group were more likely to be positive about exercise.

Community exercise intervention was more expensive than home (£269 vs. £88 per participant in London; £218 vs. £117 in Nottingham, at 2011 prices). There were no differences in primary care service use between groups, or in costs of hospital treatment for injurious falls over the 24 week intervention period or the subsequent 12 months.

The co-applicants on the ProAct65+ trial were: Professor Denise Kendrick (Nottingham), Professor Richard Morris (UCL), Professor Tahir Masud (Nottingham), Dr Heather Gage (Surrey), Professor Dawn Skelton (Glasgow Caledonian), Dr Susie Dinan (UCL), Professor Ann Bowling (Southampton), and Mark Griffin (UCL).

The full report of the trial is available at: lliffe et al, (2014) Multicentre cluster randomised trial comparing a community group exercise programme and home-based exercise with usual care for people aged 65 years and over in primary care, Health Technology Assessment, 18, 49.

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Exercise and its role in Healthy Ageing

Professor Lord is director of the MRC-Arthritis Research UK Centre for Musculoskeletal Ageing Research and is also a Principal Investigator in the MRC Centre for Immune Regulation at Birmingham University Medical School, leading the Ageing and Immunity theme. Her primary research focus is the effect of ageing upon immune function and how this limits the ability of older adults to resolve inflammation. She also researches the link between chronic systemic inflammation and physical frailty. Professor Lord has a particular interest in the role played by stress (physical and emotional) in modulating immunity and frailty in old age. She is currently a member of the MRC Lifelong Health and Wellbeing strategy panel and co-editor in chief of the journal Longevity and Healthspan. In 2013 she was awarded the Lord Cohen of Birkenhead medal for her research and leadership in human ageing and in 2014 was awarded the Glenn Award for biological mechanisms in Ageing by the US Glenn Foundation. She has published over 160 original papers and reviews.

Demographic change

We are an ageing population with birth rates falling and average life expectancy increasing at 2 years per decade. Current demographic trends predict that by 2034 one in four of the UK population will be aged over 65 and one in 20 will be 85 years or older. This should be a cause for celebration in the medical profession and those delivering public health services. Sadly, although lifespan is increasing and 1 in 4 children born today can expect to reach their 100th birthday, the time spent in good health is not keeping pace. On average older adults in the UK can expect to spend the last 10 years of life in poor health (WHO, 2015).

The challenge is to develop public health and education approaches which ensure adults reach old age well enough to enjoy it and sufficiently motivated to stay in good health. We should ensure old age is enjoyed and not endured!

Malleability of Lifespan and Healthspan

Many epidemiological studies, including those in twins, have shown that approximately 25% of our longevity is down to our genes and thus beyond our control. Encouragingly this means that 75% is available for modification by lifestyle and environmental change. Advances in medical research are making it clear that ageing is malleable and that age-related morbidity can be dramatically reduced. Studies in monkeys in the US have used a technique called caloric restriction, which reduces calorie intake by 25% (rather like the 5:2 diet) and shown that 30 year old monkeys (equivalent to a 70 year old human) have reduced levels of age-related diseases including cancer, dementia and heart disease (Colman et al., 2009). There are no long term studies yet in humans but the residents of the Japanese island of Okinawa, who eat 20-30% less calories than mainland Japanese, have the highest numbers of centenarians in the world. They also have 80% less breast and prostate cancer, 75% less dementia and 50% fewer heart attacks when compared with US citizens (www.okicent.org). These studies reveal that ageing and its associated co-morbidities are preventable with lifestyle modification.

Musculoskeletal function and a healthy old age

Good musculoskeletal function is central to a healthy, independent and active old age (Rantanen et al., 1999). An adult who has insufficient muscle strength to get out of a chair unaided will also struggle to go out and meet friends and family, shop, or get on and off the toilet. The musculoskeletal system is significantly affected (Micheil et al., 2010) by ageing, with loss of muscle and bone mass and quality from midlife onwards. The reductions in muscle mass with age occur at 1-2% per year after the age of 50 (Sipilä et al., 2006). Muscle function and strength, which is vital for an active and independent life, reduces at 1.5% per year after the age of 50 and 2-3% per year after age 60 years (Von Haehling et al., 2010). Reduced physical function is a potent indicator of an unhealthy old age. Limited ability to walk a quarter of a mile is an independent predictor of mortality. Future inability to carry out activities of daily living and increased health and care costs (Hardy et al., 2011).
Ageing is a complex process and developing a strategy to prevent ill-health in old age may seem like a Herculean task that requires a complex set of interventions to target the decline of each major body system. However, Hippocrates in 400BC recognised that physical activity was the key to good health, stating that “Walking is man’s best medicine”. Paradoxically humans become less physically active with age – taking it easy and putting your feet up is taken for granted as a rite of passage and entitlement in old age!

WHO data reveal that less than half of European adults meet physical activity guidelines and this figure increases to less than 20% in the over 65 year age group and less than 10% in the over 85s, (www.who.int/gho/ncd/risk_factors/physical_activity_text/en/index), with women much more inactive than men.

Physical activity as an anti-ageing medicine
It could be argued that given that our genetic inheritance stems from our time as hunter-gatherers, when high levels of physical activity were the norm, being physically active should be the default position for maintaining musculoskeletal health and function across the life span. Indeed many of the features of the aged musculoskeletal system, such as muscle and bone loss, can be induced by relatively short periods of enforced inactivity. In one study young and old healthy subjects had their physical activity reduced by 80% for just 2 weeks and they lost 1kg and 2kg of muscle respectively (Krogh-Madsen et al., 2010). So the question is just how much of what we consider as part of normal ageing is in fact due to reduced physical activity and could therefore be reversed by increasing activity? This issue was addressed in a recent study in collaboration with researchers at Kings College London. This study assessed muscle mass and function (strength) as well as a broad range of physiological features (heart and lung function, cognitive ability) in lifelong exercisers (cyclists) aged 55-79 years old. Results showed there was no age associated increase in BMI, percentage body fat or loss of muscle mass and several aspects of balance were maintained. A decline in muscle strength across this age span was seen in men but this was much attenuated at approximately 0.56% per year (compared with 1.5% in the general population). There was no decline in women (Pollock et al., 2015). Therefore staying physically active in adult life can prevent many aspects of physical ageing.

Exercise in older adults: turning back the years
Muscle function declines at approximately 1.5% per year in adults aged over 50. Although muscle mass and function is harder to restore in older adults, it is possible to partially restore mass and function with more tailored programmes and in particular with increased resistance exercise training (RET). For example, just 12 weeks of RET increased muscle strength in frail older adults (>75 years) by 27%, reversing the effects of ageing by 18 years (Skelton et al., 1995). Bone health is also improved by physical activity, with numerous studies showing that load bearing activity (e.g. stair climbing) improves bone mass and reduces the incidence of osteoporosis in older adults.

One of the most recent concepts in relation to physical activity and health is that the time spent being sedentary (sitting, lying down) may be a more important determinant of health than time spent being physically active. A recent study reported that even a 1 hour period of daily vigorous exercise (cycling) did not compensate for the negative effects of 12 hours of inactivity on metabolic health (insulin resistance), with the best effects seen if the sedentary time was broken up with periods of walking (Bernard et al., 2014). Thus reducing sedentary time by increasing time spent walking or just standing may be just as important to health as short periods of vigorous exercise. A very simple health message here may be ‘get up, stand up!’ Suggesting that adults, especially older adults who may spend most of their day sitting, should make sure they just stand up regularly and move around. Watching day time soaps standing up, even if using a support frame, will give real functional and health benefits. It has been estimated that standing up for just 3 hours a day over a year will burn the same calories as running 10 marathons!

References

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The Role of Specialist Exercise Professionals in the Delivery of Evidence Based Exercise Interventions

Bex Townley has worked in exercise and fitness for 25 years. For the past 10 years this has been in the area of exercise management for clinical populations, more specifically with frailer older people, and stroke survivors of all ages. Currently employed by Hywel Dda Health Board she works as part of a community resource team across Carmarthenshire. On her days off she works for a national training provider delivering endorsed and accredited training qualifications for exercise, social care and health professionals across the UK and Europe.

Training Framework for Exercise Professionals
A training framework exists for Exercise Professionals who work with specialist and clinical (referral) populations. The Register of Exercise Professionals (REPs) is an independent, public register, which recognises the qualifications and expertise of health enhancing exercise instructors in the UK. It provides a system of regulation for instructors and trainers to ensure that they meet the health and fitness industry’s agreed National Occupational Standards (REPs, 2015).

Parameters of practice
The parameters of practice for an exercise specialist working with referred populations are set out in the National Quality Assurance Framework for Exercise Referral Systems (Department of Health, 2001). Instructors holding a level 3 Exercise Referral Qualification have the skills and competencies to work with ‘low risk’ patients referred from their GP presenting with e.g. coronary heart disease (CHD) risk factors. The level 3 qualification is a pre-requisite to undertaking any of the level 4 courses which span a range of clinical populations enabling the specialist instructor to receive patient referrals from health professionals discharging from clinically led exercise services (i.e. cardiac rehabilitation, pulmonary rehabilitation, stroke, and falls prevention services). A comprehensive referral form detailing pertinent information about the patient (i.e. medical status, medications, rehabilitation gains/outcome measures, motivation and functional impairments) supports the exercise specialist to formulate clear rationale and make appropriate decisions about baseline exercise programmes and optimum exercise programming for effectiveness, safety and enjoyment.

‘Building’ evidence based exercise continuums
Across Wales partnership working between exercise and physiotherapy services is formerly established and co-ordinated at national level and delivered by a team of level 4 instructors as part of the National Exercise Referral Scheme (NERS). Carmarthenshire’s exercise continuum of evidence based programmes is seven years in the making and aids smooth transition from clinical, to leisure/community settings, but goes beyond the usual service models and has established a dedicated role for an exercise specialist within the community resource team. This role is unique and

Understanding parameters of practice and establishing agreed referral pathways enable exercise specialists to work in partnership with physiotherapy teams in delivering evidence based programmes to compliment rehabilitation goals and extend gains achieved by patients during short term/time-framed physiotherapy interventions. An evidence based exercise intervention will target components of fitness most relevant to the person’s goals and in applying the principles of individual difference, tailor exercise for individuals within group exercise formats. Not to be confused with rehabilitation.
provides even greater links between therapy services to support home based programmes for frailer older people at risk of falls, and works closer with leisure based specialist instructors in developing an exercise continuum that increases ‘reach’ of evidenced based exercise for all ages, conditions and physical function.

Evidence based programmes for falls prevention
Achieving the optimum durations for evidenced based exercise is a particular challenge for fall prevention services. Exercise interventions evidenced to reduce falls in frailer older adults and widely used around the UK (and Europe) are;

- The Otago Home Exercise Programme (Campbell, 1997)
- FaME - Falls and Management Exercise Programme (Skelton, 2005).

The most recent Cochrane review concludes that evidence based exercise interventions to reduce falls require a minimum dose of 50 hours, should be progressed over time, should be highly challenging and shouldn’t include brisk walking for those at high risk (Sherrington et al., 2011). Without adherence and progression gains will be limited. Achieving the required dose and progression is underpinned and reliant on support strategies to aid motivation and increase adherence. Having access to opportunities to continue evidence based exercise at point of discharge from rehabilitation programmes supports the patient to maintain gains and to progress further with the aim of keeping the patient out of high costing rehabilitation services. The exercise specialist based within the community resource team has a specific remit to support people in ‘doing their exercise homework’ once discharged from physiotherapy. Short-term rehab interventions do not lend themselves well to the often long process of behaviour change and subsequent ‘buy in’ to adherence to programmes. Allowing more time offers greater insight into the person’s attitude and beliefs; this is essential information for the exercise specialist to gather in order to positively and effectively target discussion, education/awareness and exercise programme content.

The Carmarthenshire Model
In Carmarthenshire, community based specialist exercise sessions are not time-framed. However, a continuum of sessions exists across leisure centres, community venues, and further extends to frailer older people in their homes. This approach allows for transfer across sessions (from one session and from one setting to another) depending on functional capacity and mobility issues and based on pre-exercise assessment, referrer guidance and patient preference.

‘Bridging the gap’ between these services is a key role of the exercise specialist based within the community resource team in Carmarthenshire. It is often those at greatest risk (of falls, and increasing frailty) who are discharged from rehab programmes and who then have ‘nowhere to go’. However, with a dedicated role in place, patients who have received 6-8 weeks of the Otago exercise programme (led by support workers/rehab assistants holding the Otago Leader award) are then referred direct to the exercise specialist who then assumes the supporting role for the longer term. For those who gain sufficient strength, balance and confidence, onward referral to community based strength and balance programmes delivered by the NERS team is an option. The exercise specialist works alongside the NERS team in delivery of some of these sessions further increasing continuity (and aiding motivation) for the participants who have progressed from home based programmes. Use of local venues (community halls, church halls) also provides the added benefit of supporting people in their immediate localities and helps reduce barriers to participation, transport costs and increases accessibility.

References:
Skelton, D., Dinan, S., Campbell, M., Rutherford, O., (2005) Tailored group exercise (FaMS Management Exercise — FaME) reduces falls in community-dwelling older frequent fallers (an RCT), Age Ageing, 34, 6, 636-639.
Physical activity
Regular moderate intensity physical activity – such as walking, cycling, or participating in sports – has been shown to have significant benefits for health. It can reduce the risk of cardiovascular diseases, diabetes, colon and breast cancer, and depression. It can also decrease the risk of a hip or vertebral fracture and help control weight.

Physical inactivity has been identified as the fourth leading risk factor for global mortality causing an estimated 3.2 million deaths globally. It is well known that less than 40% of the world’s populations are undertaking adequate amounts of physical activity and rates have been declining. The World Health Organization recommends that most people should undertake at least 30 minutes of moderate-intensity physical activity on most days.

Many things (interventions) have been tried to see if they help people to take up physical activity, increase the amount of physical activity and improve fitness.

Face-to-face interventions - appear to successfully support adults’ attempts to become active and fitter, for example with personal counselling and advice, feedback, offering choices of exercise and supervision. These findings are based on data from 10 studies involving 6292 healthy adults. Outcomes are improved if the intervention comprises a specified type of physical activity and is supervised by a non-health professional using a combination of group and individual approaches. Engagement in new forms of physical activity can be maintained for up to at least one year and does not increase the risk of falls or exercise related injuries.

Professional advice and guidance - with continued support can encourage people to be more physically active in the short to mid-term.

Technologies - such as help from a trained professional and through personal support via telephone, email, or written information are successful in supporting adults’ attempts to become more active, achieve the recommended weekly amounts of activity, or become fitter. As for face-to-face interventions, physical activity can be maintained for at least one year and it does not increase the risk of falls or exercise related injuries. These findings are based on data from 11 studies involving 5862 healthy adults.

Aerobic exercise for cognitive function - results in increased fitness and an improvement in at least one aspect of cognitive function. The largest effects are on cognitive speed, auditory and visual attention.

Face-to-face with a professional versus using technologies that enabled remote prescription - It is unclear about which approach is best for promoting physical activity and cardio-respiratory fitness.

Workplace pedometers - there is insufficient evidence to assess whether pedometers used in the workplace are of any benefit.

Community wide interventions - are very difficult to undertake, and it appears that they usually fail to provide a measurable benefit in physical activity for a population.

Environmental and behavioural interventions - there are inconclusive and conflicting results for reducing physical activity limitation in community-dwelling visually impaired older people.

References:

The Cochrane Collaboration is an international network of more than 28,000 dedicated people from over 100 countries. They work together to help healthcare providers, policy-makers, patients, their advocates and carers, and the general public make well-informed decisions about health care, by preparing, updating, and promoting the accessibility of Cochrane Reviews.
Mark Smith

The expert’s perspective

What is your current position and what was your career path that took you there?
I am Consultant Physiotherapist in Stroke Rehabilitation for NHS Lothian and I represent all of the Allied Health Professionals (AHPs) in the NHS Lothian Stroke Managed Clinical Network (MCN). I also sit on the National Advisory Committee for Stroke (NACS) and the Scotland Committee of the Stroke Association. I graduated Queen Margaret College, Edinburgh in 1985 and following a general rotation through different clinical specialties settled on an interest in neurological rehabilitation. Latterly, I began to specialise in stroke and medicine of old age rehabilitation and now also have an interest in frailty, falls and the orthopaedic rehabilitation pathway in NHS Lothian. I was appointed Consultant Physiotherapist in 2006 and I am a visiting lecturer at four Scottish Universities. I am interested in anticipatory care, early supported discharge and community rehabilitation for older people and those with stroke.

What challenges do you face in your current position and which has been the greatest one?
My main challenge has been ensuring the provision of adequate resource to deliver evidence-based, high quality rehabilitation. My position is strategic rather than operational and as such need to engage through leadership across a large, complex organisation. Pressure on acute hospital in-patient pathways has meant earlier discharge from hospital but not necessarily access to adequate ongoing community rehabilitation. Integration of health and social care is an ongoing process in Scotland and it is a constant challenge to ensure that the person-centred requirements of patients are met as effectively as possible within this transition.

In your opinion, what are the top 3 issues affecting the care of older people?
Delivering innovative models of social care, intermediate care facilitating shorter inpatient lengths of stay and the provision of adequate rehabilitation along the pathway.

What changes in elderly care do you anticipate in the next few years?
I am aware of developments related to increased demand for community based care and rehabilitation with the development of different models such as care villages, rehabilitation in care homes and “hospital at home” services. There needs to be continued improvement in intermediate care with better “hospital at home” services which should include adequate rehabilitation as well as anticipatory medical/nursing care.

If you hadn’t become a physiotherapist, what might you have done?
Orthopaedic surgery, rehabilitation medicine, or perhaps a professional golf coach!

What experience has influenced your career the most?
The support, guidance and collaboration with a number of key individuals over the years, such as Professors Martin Dennis, Gillian Mead and Frederike van Wijck who have given me great clinical and academic opportunities and increased my knowledge and skills. I have been fortunate to have experienced implementation of the evidence base around the development of stroke units early in my career so have been exposed to, and involved in, many initiatives relating to the evolving evidence base for stroke. Also Elizabeth Condie, Fellow, and former Chair, of the Scottish Board of the Chartered Society of Physiotherapy (CSP) entrusted me with elements of international teaching on behalf of the International Society for Prosthetics and Orthotics (ISPO) which allowed me to work with clinical colleagues and stroke survivors in many developing countries. These latter experiences have allowed me to see stroke and elderly rehabilitation in a range of social contexts which has always been stimulating in aspiring to deliver evidence based therapy interventions both at home and abroad. I have experienced supportive and visionary line management form a number of key senior colleagues throughout my career which has undoubtedly influenced my development positively.

What advice would you give to someone contemplating following in your footsteps?
To be cognizant of, and to act upon, the various drivers which come to bear on delivering high quality evidence based practice which is well aligned with high level strategy from government, NHS, societal and educational perspectives as one progresses one’s career. To progress through one’s career by being open to opportunities which best align with your strategic direction of travel and to take up those which are likely to benefit patient care in one’s area of practice. To work hard on the basics, on which to build advancing skills, and to never lose sight of our patients’ needs and their welfare as our raison d’être, regardless of service and budgetary pressures.

Where do you go for advice and information?
I am involved in a number of networks such as the Association of Chartered Physiotherapists Interested in Neurology (ACPIN), Chartered Physiotherapists working with Older People (AGILE), the Scottish Stroke AHP Forum (SSAHP), the Nursing, Midwifery and AHP Research Unit (NMARPU) at Glasgow Caledonian and Stirling Universities, the Scottish NMAHP Consultant Forum and NACS. I work in collaboration with the third sector, most commonly the Stroke Association in Scotland and Chest Heart & Stroke Scotland, who provide many links to resources and services beyond the NHS and health and Social Care. I also have many multidisciplinary colleagues in academia and clinical practice who I can call on personally for advice and information.

Who would you most like to work with?
I am very fortunate to have already had the opportunity to work with many fine people. Professors Richard Bohannon and Gert Kwakkel would be very good to work more closely with.

What do you enjoy doing when you are not working?
I have school age children and embrace all aspects of family life. I enjoy exercise, travel, playing guitar and golf. As a member of the European Disabled Golf Association (EDGA) I am involved in improving access to golf for people with disability and have a PGA coaching qualification.

What do you do in a typical working day?
This varies a great deal but is usually a mix of clinical work with stroke patients; working within strategic service redesign teams around rehabilitation pathways for stroke and elderly patients; supporting third sector organisations; writing for publication; teaching at under and postgraduate levels, particularly in the clinical setting, and engaging in rehabilitation research. This means a continuous amalgam of desk-based activity and clinical practice involving hospital inpatient, outpatient and domiciliary work, supporting clinical colleagues in delivering rehabilitation interventions. Every day is different which is stimulating.

If you were stranded on a desert island what would be your one luxury?
My acoustic guitar!
In our next quarterly issue of Innov-age we will be looking at Sight and Older People. Sight loss becomes increasingly likely in later life; the older you are the more likely you are to be living with sight loss and it can be a challenge. Often seen as an accepted consequence of ageing, the leading causes of sight loss in older people in the UK include age-related macular degeneration (AMD), cataract, glaucoma and diabetic retinopathy. The Innov-age team will be summarizing research around this topic and sharing their knowledge and experiences of other important eldercare issues...