

Organ and tissue donation: breaking down the barriers

Improving the consent rate
for organ and tissue donation

Hospital staffing and patient safety

Influencing NHS guidelines on staff: patient ratios

Pioneering stroke rehabilitation technology

Revolutionising the way engineers
and clinicians work together

Tackling major health challenges

Bridging the gap between research and patient care

In this issue

Welcome to *Health Sciences New Boundaries*. In this issue, you will discover how our research is addressing some of the most challenging issues facing society, from improving the consent rate for organ and tissue donation to pioneering stroke rehabilitation technology.

On page four, find out how researchers at Southampton have contributed to the National Institute for Health and Care Excellence (NICE) guidance, national clinical practice guidelines, and public awareness initiatives around organ and tissue donation. On page 10, read about how our researchers have been commissioned to conduct a review of the evidence on safe staffing levels on hospital wards, to inform the government's response to the Francis Report.

After recently receiving EU funding for a Southampton-led, cross-European masters course, the University is about to embark on a revolutionary new way of training students to think about stroke recovery and rehabilitation. Find out more on page 12.

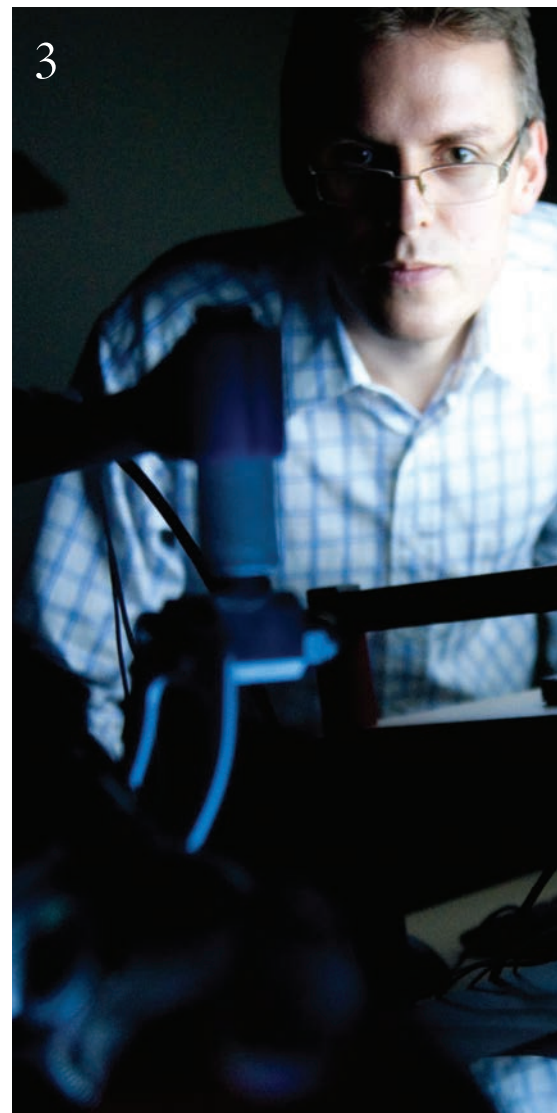
Continuing with the theme of tackling major health challenges through our research, the University has been awarded £19m in funding from the National Institute for Health Research (NIHR) to create a Collaboration for Leadership in Applied Health Research and Care (CLAHRC) for the Wessex region. You can read more about this on page 16.

For more information, visit our website www.southampton.ac.uk/healthsciences

Please send us your feedback

We are keen to receive any feedback you have about *New Boundaries*.

If you have any comments or suggestions, please send them to communications.hs@southampton.ac.uk





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Organ and tissue donation: breaking down the barriers

Each year in the UK, around 1,000 people will die while waiting for an organ transplant. Dr Tracy Long-Sutehall, Principal Research Fellow at the University of Southampton, is working with healthcare providers to increase consent rates for organ and tissue donation, so that more lifesaving transplant operations can be carried out.

Southampton researchers are working to improve the consent rate for organ and tissue donation





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Only one per cent of the 500,000 people who die in hospital each year will be suitable for organ donation

“Promotional material implies that everyone is positive about donation. However, this is not the case for all families and we must bear their individual needs in mind.”

Dr Tracy Long-Sutehall,
Principal Research Fellow
at the University of Southampton

Southampton’s organ and tissue donation research studies have broken new ground in the UK. The work of our academics has revealed factors that affect the decision-making of family members about organ and tissue donation, and their experiences of the process. This is crucial both to increasing rates of donation, and for effectively supporting families of donors.

Despite public awareness and support for donation, there is a critical shortage of organs available for lifesaving transplants. Today, more than 7,000 people in the UK are on the active waiting list, due to end stage organ failure, and this figure is set to rise year-on-year. Two of the key factors that impact on the number of transplants that can be carried out in the UK are: not effectively identifying potential donors in hospital settings, and family consent rates. Approximately 40 per cent of potential donors’ family members decline organ donation requests.

Only one per cent of the 500,000 people who die in hospital each year will be suitable for organ donation. Usually, these individuals have died from a head injury or a cerebral event, but may also have had a cardiac arrest that has led on to untreatable brain damage. These potential donors are exclusively cared for in intensive care units or emergency departments, due to the need for life support. Tracy says: “As the pool of potential organ donors is very small, it is crucial that healthcare professionals are equipped and prepared to identify any potential organ donor. Figures from the NHS Blood and Transplant service (NHSBT) indicate that identification rates of potential donors have increased over the past five years, with over 90 per cent of potential donors now being referred to the donation service by hospital staff.



Barriers to organ and tissue donation

Unlike living donation, where a person donates a kidney, liver, or lung lobe while they are still alive, the opportunity to donate other organs and tissues is a time-limited opportunity, that is only possible after death. Death that can facilitate organ donation is often sudden and unexpected, leaving family members in a state of grief and shock. Therefore, the way that families are approached is key to ensuring that they make a decision about organ and tissue donation that is right for them and that won't be regretted later.

“Our research has indicated that acute bereavement following the untimely death of a family member, spouse or close friend impacts on the consent process for organ and tissue donation. We have referred to this state as ‘disequilibrium’,” explains Tracy. “Although we have a broad understanding of how grief impacts cognitively and

emotionally on decision-making in organ and tissue donation, this requires further investigation. What we have found is that this situation requires close attention to the communication styles adopted, and the ways in which often complicated information regarding the death of the potential donor and the steps within the donation process are shared with individuals who are acutely bereaved.”

“Promotional material implies that everyone is positive about donation. However, this is not the case for all families and we must bear their individual needs in mind,” Tracy says. “If you stop someone in the street, they would likely agree that organ and tissue donation is a good idea, but place that person next to the bed of their critically-injured family member who left for work in the morning as usual, sustained for example, a subarachnoid haemorrhage in the afternoon, and is then pronounced brain dead, all potentially within 24 hours, you can see how that might impact on their ability to make a decision about donation.”

Tissue donation

In 2007, Tracy was invited to work with NHSBT Tissue Services as a consultant, to support the development of their family care initiative and review their consent procedures. The work carried out has shown that while organ donation is very much in the public mindset, people are much less aware of the opportunities for tissue donation. Donations such as skin and heart valves can be lifesaving, while many of the other tissues that can be donated, such as eyes, tendons and bone are used in operations that are life-transforming. The research suggests that this lack of knowledge about the benefits of tissue donation is a factor impacting on family decision-making, as is the associated mental imagery of how their deceased family member may look after tissue donation. ►

Education about organ and tissue donation is now embedded in Southampton's programmes of study



“It is essential that family members are provided with a choice regarding organ and tissue donation by the right person, at the right time.”

Dr Tracy Long-Sutehall,
Principal Research Fellow
at the University of Southampton

“The understanding that tissue donation could restore someone’s sight, or save a person from limb amputation is not well-known to the general public or healthcare professionals. Even if someone is having knee surgery using donated cartilage, they may not be told by their surgeon, and this contributes to a lack of awareness. During the London bombings in 2005, the Liverpool Tissue Bank came close to running out of skin to use on those suffering from severe burns. Situations such as this remind us that we must use every opportunity to inform and educate both the public, and healthcare colleagues about the need for tissue donation,” comments Tracy.

Training specialist nurses and healthcare workers

A further issue that impacts on the number of organs and tissues being donated is that some health workers are reluctant to raise the issue of donation with family members, often for fear of causing further distress. Participants in the research have stated that the worst thing that could happen to them has already happened; it can’t be made worse by asking about donation. However, how and when family members are asked, has been shown to be very important and ideally should be carried out by a specialist nurse.

“We know from the evidence that if the person making decisions about organ and tissue donation has easy and early contact with a well-informed, motivated and skilled individual, who is aware of the donation wishes of the deceased (if they have been recorded), that the family feel supported in their decision-making. It is of crucial importance that answers are available related to how their family member, being cared for in emergency departments and intensive care units, will die, what happens during and after organ and tissue donation, and what their role is in this process,” explains Tracy. “It is also essential that family members are provided with a choice regarding organ and tissue donation by the right person, at the right time.”

Going forward

The identification of all potential donors and an approach to their families, will impact on the number of organs and tissues available for use in transplant operations and biomedical research. It will also help reduce the significant costs to the NHS in supporting individuals in end-stage organ failure; costs which reduce substantially after successful transplantation. To achieve a situation where all families are made aware of the opportunity for donation, and that all health workers feel confident to identify potential donors and ask families if they would like to speak to a specialist about donation, all healthcare professionals need to be educated about the potential of organ and tissue donation. Southampton is one of the only Universities in the UK where such education is now embedded in various programmes of study.

Tracy comments: “Something that each and every one of us can do to help is to sign up to the organ and tissue donor register, but more importantly, tell our family members, spouses and friends about our wish to be an organ and tissue donor so that they know how we feel about donation. We know that if family members have concrete or discursive knowledge of the deceased’s donation wish, the majority of families will support the wishes of their family member. It is when we don’t know what someone would have wanted that decisions become much more difficult to make.”

Findings from this extensive body of work are now embedded in the National Institute for Clinical Excellence (NICE) guidance, national clinical practice guidelines, and public awareness initiatives. As such, the organ and tissue donation research of our academics is directly impacting the service provided to over five thousand bereaved family members approached each year.

Read more about the many research projects that Tracy is working on at www.southampton.ac.uk/healthsciences/tracy_long_sutehall



Hospital staffing and patient safety

In response to the Francis Inquiry, the government has commissioned the National Institute for Health and Care Excellence (NICE), to develop guidelines on safe staffing levels on hospital wards.

Having NICE guidelines on safe staffing levels will shape the way that we move on from the Francis Report



As the UK's leading researcher in this area, Professor Peter Griffiths, Chair of Health Services Research at Southampton, presented a review of the evidence which has informed new NICE guidelines.

Q *Why is it important to have NICE guidelines on safe staffing levels on hospital wards?*

In the past, it seemed that some hospitals looked at nursing as the icing on the cake of patient care, and acted as if nothing detrimental would happen if it was reduced. Clearly, following the Francis Inquiry, there has been a lot of attention focused on the nursing profession and it has been recognised that this is not true. Although it seems as though we have learned a lesson from mid-Staffordshire that we will never forget, it's inevitable that without some tangible guidelines in place, changes will not last.

Having NICE guidelines on safe staffing levels will shape the way that we move on from the Francis Report. It will put forward evidence from a significant research base, delivered by a very influential body that cannot be ignored in the way that it has been in the past. This puts nurse staffing levels on the agenda in a way that is more permanent – it's a very important piece of work which has been a long time coming.

Southampton is an excellent place to continue to develop this area because of its recognised eminence in health sciences, nursing in particular, and the opportunities it presents to develop interdisciplinary collaborations.

Q *What does optimised care on hospital wards look like to you?*

It's a very good question. Optimal care is often defined by the absence of a number of bad things. We go into hospital because we are sick or need treatment and go from a situation where we are in charge of our daily lives, to one where we are vulnerable and forced to place a lot of power into other people's hands. To expect that nursing care can protect people from harm at the most basic level is not

unreasonable. It should protect you from being harmed by the treatment you are undergoing, as well as the things that are consequential to your illness, such as pressure sores. Avoiding those negatives is a very positive contribution.

Q *What part of the hospital workforce do these guidelines focus on specifically?*

They particularly concentrate on nursing staff and healthcare assistants. This is because these groups have been a significant focus of this body of research, and they are the largest part of the workforce. Going forward, a research angle will be to look more closely at the contribution of other staff groups outside of the nursing team if we want to decide how best to staff our hospitals.

Q *How have you compiled this review of the evidence?*

One of the key datasets we looked at was death rates on hospital wards. This is due to the self-evident importance of these figures, but also, because it's one of the clear things you can find in the statistics; it's quantitative data that there is no ambiguity about. Many of the other things we are interested in, such as the development of pressure ulcers and the overall patient experience don't have valid and reliable data so readily available.

However, the problem with using death rates is that what it tells us about the quality of care the patient received is really very indirect. The main thing that actually determines whether you live or die is why you were in hospital in the first place, not the quality of the care you receive. Similarly, we have to consider the other things that were wrong with the patient aside from what they were being treated for, like their age and socio-economic background.

The effect of anything the healthcare system does to people is quite easy to lose in among that, which is a challenge we have to tackle.

Q *What will be the focus of your work going forward?*

One of the key things will be linking my work to the National Institute for Health Research's (NIHR) Collaboration for Leadership in Applied Health Research and Care (CLAHRC) within the Wessex region (see page 16 for more information). A focus of that collaborative group is fundamental care in hospital, linking this work about the structural characteristics of the hospital workforce, to the actual delivery of fundamental care, such as vital signs observations, nutrition, and emotional support. We are currently trying to initiate a study to look at whether staffing levels can impact on the regularity and thoroughness of taking vital signs observations, and whether or not that has a consequent impact on mortality.

Q *Do you feel that this review is the culmination of your many years spent working on safe staffing levels?*

Research that I have been involved in over the past years has put me in a good position to undertake this research for NICE, pulling together a large volume of international studies including my own. Any research like this leads to additional questions, and new focuses for study, so I don't see this as a culmination, but rather the beginning of the next chapter in this crucial body of research.

For more information about Peter's research, visit:

www.southampton.ac.uk/petergriffiths



Stroke rehabilitation at Southampton has been at the forefront of the field for over a decade

Pioneering stroke rehabilitation technology

Southampton researchers are leading the way in a new frontier of rehabilitation for people suffering from mobility issues, following stroke.

After recently receiving EU funding for a Southampton-led, cross-European masters course (MSc in Advanced Rehabilitation Technologies), the University is about to embark on a revolutionary new way of training students to think about stroke recovery and rehabilitation. This education initiative complements our research into improving the quality of life of stroke patients worldwide.

Every year, approximately 150,000 people in the UK have a stroke, and roughly a third require rehabilitation to help them to recover movement and independence. A stroke occurs when the blood supply to the brain is cut off, damaging or killing neurones in the brain. This means that connections between the brain and the muscles are interrupted, leaving a person with difficulties moving their limbs or walking.

Southampton and stroke recovery

Stroke rehabilitation at Southampton has been at the forefront of the field for over a decade, both in mobility and gait, and recovery of upper limb function. “What’s really distinctive about our work is that it

encompasses the entire spectrum of stroke recovery research, from the very basic science to the groundbreaking engineering, through to the delivery of rehabilitation to patients,” explains Jane Burridge, Professor of Restorative Neuroscience at the University. “We are not led solely by engineers, or clinicians, but by an equal partnership, and that is the key to our success.”

The work is fundamentally interdisciplinary, with clinical practice going hand-in-hand with innovative engineering technology. Work began at Salisbury Hospital in 1993 when Jane and colleagues tested a technology known as a drop foot stimulator. Walking is a significant problem following a stroke, especially the action of lifting the foot, making walking laboured and causing patients to trip, feel unstable or fall.

The drop foot stimulator was designed to overcome these problems. Electrodes, placed on the patient’s skin just below the knee, stimulate muscles to lift the foot. A switch worn in the shoe detects when the foot is lifted so that the muscles are stimulated every time they take a step.

Evidence from the first clinical trial showed that wearing the device improved speed and reduced the effort of walking, indicating a clear clinical and statistically significant benefit. Feedback from patients led to the development of an implanted drop foot stimulator, and a collaboration with Aalborg University in Denmark.

Upper limb rehabilitation

After a number of years, pioneering research at Southampton started to be picked up by other organisations and institutions around the world. “Discussion began around how we could transfer this technology to support hand and upper limb movement,” explains Jane. “We were contacted by Californian not-for-profit organisation, the Alfred Mann foundation. The team there were interested in working with us as they had developed a micro-stimulator that could be injected under the skin, next to one of the nerves that goes into the muscles that move the hand, elbow or shoulder.” ►

As part of a four-year study using this technology, the Southampton team found ways to control the stimulator to activate different muscles at different times, to open the hand, move the elbow and lift the arm. The patients' upper limb function improved, as they re-learned these movements. The breakthrough moment in this research came when Jane and her team received funding from the Engineering and Physical Sciences Research Council (EPSRC) to integrate stimulation with a 'rehabilitation robot' and develop techniques to make it responsive to patients' performance – an idea that promised to optimise motor learning.

“Dr Chris Freeman from Physical Sciences and Engineering, worked with us to develop a hybrid system comprising a robot and electrical stimulation, which used control algorithms to adjust the level and timing of stimulation. The combination aimed to enable a person to re-learn the movement required to perform a simple tracking task. The robot detected the error in the patient's movement, and the control algorithms adjusted the stimulation on the next attempt to reduce the error.

“Each time the task was repeated, the error was reduced,” Jane says. “When, after multiple repetitions they could follow the tracking signal accurately, we reduced the level of stimulation, allowing patients to gradually re-learn to make these movements themselves.” Since this first exploratory research, Southampton researchers have continued to be funded by the EPSRC to develop more advanced control algorithms, and are now able to use stimulation to support learning of complex functional tasks performed without the robot. The team's goal to create a system that can be used independently by patients in their own homes is closer to becoming a reality.

Societal impact

As a result of the work carried out by Southampton researchers and others in 2010, the functional electrical stimulation (FES) for drop foot was adopted by the National Institute for Health and Care Excellence (NICE) and incorporated into the Royal College of Physicians' stroke guidelines. Jane comments: “Since our work began, over 2,500 therapists have received specialist therapist training in FES in the UK and abroad. Our research has attracted great media attention, and international clinical and commercial acclaim.” The commerciality of FES has been fundamental to its success. In conjunction with Odstock Medical Limited (OML) and many other manufacturers, devices have been developed to be sold to the NHS and privately.

The future of stroke recovery

The team's research has also practically addressed the need to provide home-based rehabilitation for stroke patients through the development of a web-based rehabilitation programme, to motivate and support patients. The system, called lifeCIT, is currently being tested in a clinical trial with patients in their own homes.

“The biggest challenge we face now in stroke recovery, is to make sure our work is delivered to patients, so that it improves the quality of their lives,” says Jane. “There has been vast development of new technologies, and advances in our understanding of what happens to the brain after a stroke, how it recovers and how we can optimise recovery. We have a better understanding of neuroplasticity – recovery of the brain and its ability to adapt – but our real challenge is to translate the technologies we have developed into everyday rehabilitation with patients.”

The advancement of stroke recovery and neuro-rehabilitation at Southampton and across Europe has been boosted by a recent EU grant of approximately £500,000. The funding will be used to develop an MSc course, in advanced rehabilitation technologies. The innovative course, which has been designed with input from employers, patients, carers, clinicians, students and academics, will be led by Southampton and delivered in conjunction with six other Universities across Europe. In just over a year, Dr Ann-Marie Hughes, Dr Chris Freeman and Dr David Simpson hope to be recruiting their first students on to the course. Jane explains: “The intention of this course is to provide an environment where students from different disciplines, such as engineers and clinicians, can learn and find solutions together. It's only through these fundamental connections that we can continue to work to solve the problems encountered by stroke and other patients and develop new technologies.”

For more information, visit www.southampton.ac.uk/healthsciences/research/impact/advancing_recovery_from_stroke.page

To find out more about the MSc in Advanced Rehabilitation Technologies, visit www.rehabtech.soton.ac.uk



Southampton research has addressed the need to provide home-based rehabilitation for stroke patients

Tackling major health challenges

Health researchers from Southampton have been awarded £19m to carry out world-class applied health research, through the creation of a Collaboration for Leadership in Applied Health Research and Care (CLAHRC). The investment from the National Institute for Health Research (NIHR) and other organisations will help make sure patients benefit from innovative new treatments and techniques, which could revolutionise future healthcare. Richard Trowbridge, Chief Operating Officer for the CLAHRC explains more.



Q *What will this investment be used to fund?*
Researchers from the University and the University Hospital Southampton NHS Foundation Trust, along with the Wessex Academic Health Science Network and other local NHS partners, have formed the NIHR CLAHRC for the Wessex region, known as the NIHR CLAHRC Wessex.

CLAHRCs are partnerships set up between health and social care organisations, universities and other interested bodies to improve patient outcomes through the implementation of health research. We are a partnership of providers, commissioners, patients, clinicians and researchers with a commitment to implement what we learn from undertaking research. Our focus is on bringing benefits to people living in Wessex; caring for people with long-term conditions and reducing hospital admissions through more appropriate use of healthcare.

The NIHR CLAHRC Wessex is one of 13 research teams across the country to receive funding from the NIHR, totalling £124m. Our funding of £19m comprises £9m from the NIHR, and £10m from our partner organisations, which are providing a mix of funding, and access to resource in kind. NHS organisations benefit from this as their investment of resource will hopefully lead to cost savings and better patient-centred care.

Q *What will be the key themes for the research and implementation focus of NIHR CLAHRC Wessex?*

Researchers will focus on six themes: integrated respiratory care, ageing and dementia, fundamental care in hospital, public health and primary care, engagement with self-directed support, and complexity at end-of-life. The research will aim to develop, conduct and implement applied health research relevant across the NHS and to translate the research findings into improved outcomes for patients. We aim to increase the region's capacity to conduct high quality, applied health research focused on the needs of patients, particularly targeted at chronic disease and public health interventions.

Q *What are the aims and objectives of CLAHRC Wessex?*

We hope to have implemented a number of tangible benefits to the healthcare system over 5 years. There are at least 30 specific outcomes outlined in the bid that we hope to realise, but of these, there are some primary focuses for us. We want to see a five per cent reduction in antibiotic prescribing across Wessex and a 30 per cent improvement in the patient experience. We are also committed to training the core staff involved in care, and hope to have trained 100 staff in essential care and compassionate relationships. Additionally, we will develop 300 volunteers across Wessex in improving the care of older people.

Q *What aspect of the research is currently underway?*

All of our six themes have started their work, and two of our research themes – integrated respiratory care and engagement with self-directed support – have already received national media coverage. The respiratory work is focused on techniques of using a new inhaler. Our partners are providing access to the nurses to trial these new inhalers. In the engagement with self-directed support group, the researchers are looking at effective online resources including e-health and mobile apps. They will find out how these can best be adapted and used within the health service and in informal settings.

Through our ageing and dementia research theme, we will implement changes to clinical practice and community strategies, to improve our diagnosis of dementia and tailor care to ensure people's safety and quality of life. In terms of fundamental care in hospitals, we want to identify systems and approaches to care that ensure people experience the best possible nursing care in hospital.

The public health and primary care team will work to improve the targeting of antibiotic use, and identifying and preventing chronic liver disease and acute kidney injury. Our colleagues researching complexity at end-of-life care, will work to identify strategies to increase patient and caregiver capacity to manage complexity, improve co-ordination of care, and respect patient preferences.

The key aim of the CLAHRC is to ensure that the groundbreaking research happening across the University translates into practice and is delivered to patients.

Q *Why were the University Hospital Southampton NHS Foundation Trust and the University of Southampton chosen as the leads on the NIHR CLAHRC Wessex?*

The Trust is a major centre for teaching and research in association with the University and other partners, including the Medical Research Council and Wellcome Trust. The University of Southampton is the leading health university in our region, linking innovative education and research in Medicine and Health Sciences, and utilising our strengths in Management, Statistics and Health Economics. Our staff are world-renowned and our reputation is such, that the quality of our research speaks for itself. The proof of our ability to live up to our international reputation will be if a third stage of the CLAHRC is endorsed, and if our commitment to improving patient care over five years is realised.

For more information about the NIHR CLAHRC Wessex, visit www.clahrc-wessex.nihr.ac.uk

In brief

Knee replacement success rates

Dr Cathy Bowen and Arthritis Research UK AHP training research fellow Lucy Gates are investigating whether the foot and ankle may add further information in predicting the outcomes of total knee replacement.

“We are looking to find out more about why some patients don’t have a good outcome after total knee replacement,” explains Lucy. “A considerable number of people with knee osteoarthritis require total knee replacement, and approximately 20 per cent of these people don’t have a good outcome. The impact of the foot and ankle on these outcomes has never been considered before, so we hope to identify any links that can be drawn.”

As part of Lucy’s PhD, the team are collecting follow-up data from this research. Knowing the outcome of total knee replacement as a result of foot and ankle problems, will inform the requirement for further investigation of the use of foot and ankle interventions prior to knee replacement.

The work is part of a National Institute for Health Research (NIHR) programme prospective cohort study known as the Clinical Outcomes in Arthroplasty Study (COAST), led by Professor Nigel Arden. Our foot and ankle research programme is driven by a collaboration known as the Southampton and Oxford Lower Limb Arthritis Research group.





Influencing policy in non-medical prescribing

Greater powers to enable specially trained nurses, pharmacists, physiotherapists and podiatrists to prescribe medication are intended to provide patients with quicker, more efficient access to medicines, while ensuring patient safety. Since 2002, the number of nurses undertaking training to independently prescribe has been steadily rising, with government legislation passed in 2006 enabling nurses and pharmacists to prescribe most medicines independently from doctors.

Southampton researchers were commissioned by the Policy Research Programme at the Department of Health to assess how nurse and pharmacist prescribing was being used in healthcare settings across England. The research has directly influenced training and policy on non-medical prescribing, including recent legislation enabling physiotherapists and podiatrists to independently prescribe medicines directly to patients.

Professor Sue Latter, lead author of the research says: “Key changes in national prescribing policy have been directly informed by our research. We have also been able to highlight areas where nurse and pharmacist prescribing could be strengthened and better tailored to meet NHS services and future healthcare needs.”



Earlier detection of lung cancer

University research is helping to predict the early signs of lung cancer. 87 per cent of people who are diagnosed with lung cancer are already at a late stage of the disease and as a result, the UK only has a 5-year survival rate for lung cancer patients.

PhD student Joanna Shim is part of a larger study led by Dr Lucy Brindle, aiming to identify symptoms that predict lung cancer in patients with chronic obstructive pulmonary disease (COPD). Joanna explains: “At the moment, there is deficit in the evidence available to inform the National Institute for Health and Care Excellence (NICE) guidelines for lung cancer referrals. Symptoms of lung cancer can be ambiguous and overlap with a lot of the chronic respiratory problems.”

Joanna’s study uses the IPCARD questionnaire – to collect a range of symptoms that could predict lung cancer.

She says: “I speak to people who have been referred to the chest clinic, and use this questionnaire to record their symptoms. I then follow up with the patients for 6 months, until they get a diagnosis. I can then use the data to calculate predictive values of the symptoms. This allows us to see whether such symptoms could be used to identify earlier lung cancer.”



Preventing infections from catheters

Dr Jacqui Prieto is leading a programme of research and quality improvement to reduce urinary tract infection, by minimising urinary catheterisation and improving the care of patients with urinary catheters.

In 2013, she gained a prestigious 5-year Higher Education Funding Council for England (HEFCE) National Institute for Health Research (NIHR) Senior Clinical Lectureship.

Jacqui’s work with colleagues in the Infection Prevention Team at University Hospital Southampton NHS Foundation Trust achieved national recognition, winning the Health Service Journal National Patient Safety Award for infection control and hygiene. Her latest funded project aims to improve toileting and bladder management strategies following elective primary hip and knee replacement surgery to avoid unnecessary use of indwelling urinary catheters and improve the patient experience.

Jacqui says: “Catheter-associated urinary tract infection is the second most common healthcare associated infection in hospitals in England. We are continuing to advance our programme of research and quality improvement to benefit patients and deliver cost-effective care.”

In brief

Using the Wii Fit to combat cerebral palsy

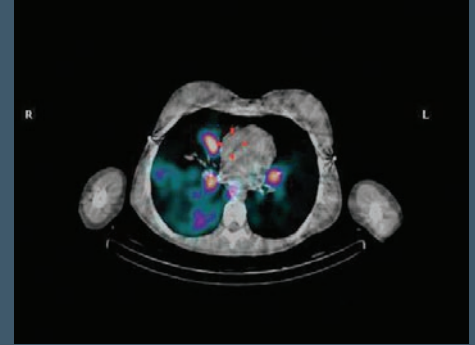
PhD student Afrah Almuwais is investigating how games played on the Wii Fit balance board may improve balance and confidence in children with cerebral palsy.

There has been considerable interest in the therapeutic value of these games since the launch of the Wii Fit balance board in 2008. Games played on the Wii Fit require people to move their entire body, shifting their weight from side-to-side, which is a treatment similar to what is already being carried out in clinics.

Afrah explains: "I find children have a real lack of motivation to do the standard exercises recommended for treatment of cerebral palsy. By using the Wii Fit, children can do their exercises in a fun way, with their friends and families, on an equal level. A lot of the direction about posture and movement given by physiotherapists is sometimes ignored, but with the reward of achieving a better score on the game by moving the body in a particular way, children are more inclined to take notice."

Afrah hopes to use this readily available technology to allow children to play equally with their friends and siblings, while improving their balance.





Largest ever Health Foundation grant

The Health Foundation has awarded its largest ever grant of £238,000 to the University for a two-year study exploring self-management.

Known as Self-Management VOICED (Valued Outcomes of Importance: Consensus and Difference) the research aims to discover what outcomes patients, families, health professionals and commissioners believe are important for self-management interventions to deliver.

Led by Senior Lecturer in physiotherapy, Dr Sara Demain, the University's interdisciplinary study team (Professor Sue Latter, Dr Claire Foster, Dr Anne Kennedy, Dr Emma Boger and Dr Jaimie Ellis) is gathered from research groups across Health Sciences. The study also involves collaborations with leading researchers from St George's University of London (Dr Fiona Jones) and the University of Leeds (Dr Ian Kellar).

Sara comments: "We are extremely grateful for this grant which enables us to carry out an important body of work, building on our extensive expertise in this area. Working with The Health Foundation brings many advantages to our study, including its influence in shaping policy.

Driving up the standards of end-of-life care

Despite major service developments in the past 40 years, many people in the UK at the end-of-life still face a distressing experience. Professor Julia Addington-Hall is leading a programme of research into end-of-life care experiences, preferences and needs, from the perspective of bereaved relatives.

This has played a key role in providing the evidence-base for expanding palliative and end-of-life care to people suffering from conditions other than cancer, and in identifying age-related differentials in service provision. It has also been pivotal in making England the first country to measure end-of-life care quality systematically from a lay perspective. This work is integral to the way in which the NHS is held to account, and has led to improved services.

Funded by the Department of Health, our end-of-life care researchers developed the VOICES-SF (Views of Informal Carers) retrospective questionnaire to measure bereaved relatives' judgements of the quality of care, and to test methods for its use in a national mortality follow-back survey.

The success of our research means that end-of-life care has a place on the agenda of NHS commissioners and providers, and in the NHS Outcomes Framework. It has also informed debates in the House of Lords.

Understanding lung disease through advanced imaging

Southampton research is using advanced 3D imaging techniques, such as high resolution computed tomography and single photon emission computed tomography (SPECT), to evaluate lung structure and function in people with lung disease.

Joy Conway, Professor of Respiratory Sciences at Southampton explains: "The diseases we are focusing on are cystic fibrosis, chronic obstructive pulmonary disease, bronchiectasis, and primary ciliary dyskinesia. We are interested in how lung function changes with disease, and after therapeutic intervention, such as physiotherapy or inhaled drugs."

These advanced imaging techniques offer the potential of more accurate, detailed measurement of the effectiveness of therapeutic interventions.

Southampton is the leading centre in the UK for this research, working in collaboration with the Southampton National Institute for Health Research biomedical research unit, with industry and in partnership with universities in America and Australia.

For more information on these stories, visit www.southampton.ac.uk/healthsciences

Journal papers published in 2013-14

This sample of journal papers indicates the breadth of research in Health Sciences at Southampton. For more research papers, please view individual staff profiles online.

Simmonds, S J; Syddall, H E; Walsh, B; Evandrou, M; Dennison, E M; Cooper, C; Sayer, A A

Understanding NHS hospital admissions in England: linkage of Hospital Episode Statistics to the Hertfordshire Cohort Study
Age and Ageing, 2014, doi: 10.1093/ageing/afu020

Hunt, K; Walsh, B; Voegeli, D; Roberts, H

Reducing avoidable hospital admission in older people: Health status, frailty and predicting risk of ill-defined conditions diagnoses in older people admitted with collapse
Archives of Gerontology and Geriatrics, 2013, 57, 172-176

Bowling, A; Hankins, M; Windle, G; Bilotta, C; Grant, R

A short measure of quality of life in older age: The performance of the brief Older People's Quality of Life questionnaire (OPQOL-brief)
Archives of Gerontology and Geriatrics, 2013, 56, 181-187

Hooper, L; Bowen, C J; Gates, L; Culliford, D; Arden, N K; Edwards, C J

Comparative distribution of ultrasound-detectable forefoot bursae in patients with osteoarthritis and rheumatoid arthritis
Arthritis Care & Research, 2013, doi: 10.1002/acr.22217

Kennedy, A; Rogers, A; Blickem, C; Daker-White, D; Bowen, R
Developing Cartoons for Long-term Condition Self-Management Information
BMC Health Services Research, 2014, doi: 10.1186/1472-6963-14-60

Pope, C; Halford, S; Turnbull, J; Prichard, J; Calestani, M; May, C

Using computer decision support systems in NHS emergency and urgent care: ethnographic study using normalisation process theory
BMC Health Services Research, 2013, doi: 10.1186/1472-6963-13-111

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Lessons learnt recruiting to a multi-site UK cohort study to explore recovery of health and well-being after colorectal cancer (CREW study)
BMC Medical Research Methodology, 2014, doi: 10.1186/1471-2288-13-153

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Participant recruitment in sensitive surveys: a comparative trial of 'opt in' versus 'opt out' approaches
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Does the 'Liverpool Care Pathway' facilitate an improvement in quality of care for dying cancer patients?
British Journal of Cancer, 2013, 108, 1942-8

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Implementation of self-management support for long-term conditions in routine primary care settings: A cluster randomised controlled trial
British Medical Journal, 2013, doi: <http://dx.doi.org/10.1136/bmj.f2882>

Glaser, A W; Fraser, L K; Corner, J; Feltbower, R; Morris, E J A; Hartwell, G; Richards, M

Patient-reported outcomes of cancer survivors in England 1-5 years after diagnosis: a cross-sectional survey
British Medical Journal Open, 2013, 3, e002317

Ball, J E; Murrells, T; Rafferty, A M; Morrow, E; Griffiths, P

'Care left undone' during nursing shifts: associations with workload and perceived quality of care
British Medical Journal Quality & Safety, doi: 10.1136/bmjqs-2012-001767

Richardson, A; Wagland, R; Foster, R; Symons, J; Davis, C; Boyland, L; Foster, C; Addington-Hall, J

Uncertainty and anxiety in the cancer of unknown primary patient journey: a multiperspective qualitative study
British Medical Journal Supportive & Palliative Care, 2014, doi: 10.1136/bmjspcare-2013-000482

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European Journal of Oncology Nursing, 2013, 17, 311-6

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Shared decision-making in back pain consultations: an illusion or reality
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Social support systems as determinants of self-management and quality of life of people with diabetes across Europe: study protocol for an observational study
Health and Quality of Life Outcomes, 2014, doi: 10.1186/1477-7525-12-29

Patel, N R; Kennedy, A; Blickem, C; Rogers, A; Reeves, D; Chew-Graham, C

Having diabetes and having to fast: a qualitative study of British Muslims with diabetes
Health Expectations, 2014, doi: 10.1111/hex.12163

- Tinelli, A; Blenkinsopp, A; Latter, S; Smith, A; Chapman, S R**
Survey of patients' experiences and perceptions of care provided by nurse and pharmacist independent prescribers in primary care
Health Expectations, 2013, doi 10.1111/hex.12099
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Markerless motion capture and measurement of hand kinematics: validation and application to home-based upper limb rehabilitation
IEEE transactions on biomedical engineering, 2013, 60, 2184-2192
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Journal of Electromyography and Kinesiology, 2014, 24, 1-10
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Methodologies to assess muscle co-contraction during gait in people with neurological impairment – A systematic literature review
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Nurse staffing and education and hospital mortality in nine European countries: a retrospective observational study
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