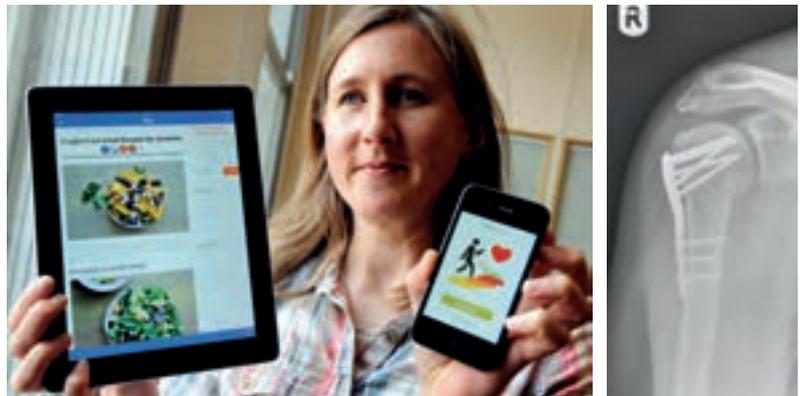


Health and Social Care Institute NEWS

Issue six 2015



Health and Social Care Institute:

- conducts applied research with real clinical and social impact
- synthesises and evaluates evidence
- translates evidence into policy and practice

Foreword from the Director

In this issue we reflect on our recent achievements and on our potential to produce more examples of world-leading 4* applied research through the Research Excellence Framework (REF). The REF is used by the Higher Education Funding Councils to audit the quality of research in UK universities.

Professor Janet Shucksmith
Assistant Dean (Research)

The REF is a mammoth exercise, consuming vast amounts of academic and administrative energy. For us, the results were very satisfying, showing a massive improvement on our 2008 performance and highlighting that the conditions are in place for substantial growth in the quality and quantity of future work.

Developing a strong research culture capable of delivering world-leading publications and substantial societal impact is a long process. The commitment required to achieve this has recently been exemplified through the work of Helen Handoll and the team working on the PROximal Fracture of Humerus: Evaluation by Randomisation (PROFHER) trial. The work of the team has emerged from many years of scholarship, careful nurturing of clinical collaborations and the development of methodological expertise. This complex, externally-funded trial has led to findings which may lead to better treatment for patients and NHS cost savings. At the same time as reaping the rewards of work like this, we are also sowing seeds for future development.

In this issue, we report on the exciting new team being developed by Professor

Dorothy Newbury-Birch to research alcohol use and misuse in a range of settings. We also introduce two new schemes for funding the next generation of postgraduate student researchers. Another promising advancement is the

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designation of HSCI as an affiliate Centre for Evidence-based Practice for the Joanna Briggs Institute. This will allow us to grow our strengths in systematic review and evidence production within an international framework of collaborators.

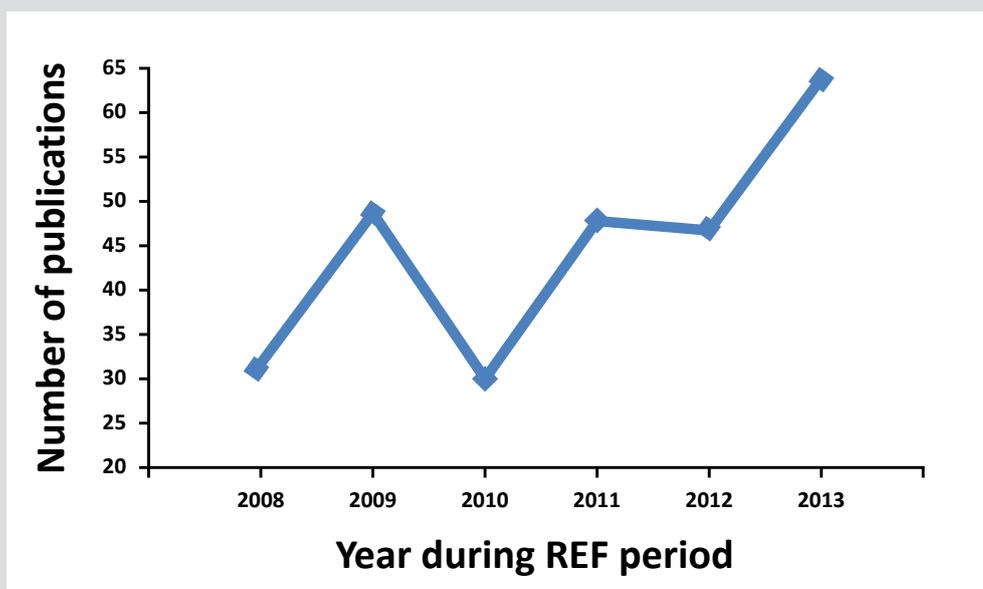


Looking to the future we report on some of our research into new technologies such as ultra sound imaging and remotely controlled electrical stimulation to relieve pain. We're exploring these areas in a variety of public health and clinical settings and are pleased that our new reports are now being cited by other researchers.

Our latest REF verdict states that we are on track to 'deliver future impacts of very considerable reach and significance'. This motivates us to continue to undertake work of meaning and significance for end users of research. It also means we must carry on sharing our research in meaningful ways and building on the areas of strength in our HSCI team.

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A successful Research Excellence Framework submission



Above: The number of papers from HSCI staff published in the last REF period (2008 - 2013) and listed in SCOPUS, the database used by the REF

The Research Excellence Framework (REF) is a periodic review of the quality of research undertaken in UK universities. The recent REF assessed research between 2008 to 2013, with results published from December 2014. Teesside University's health submission falls in the unit of assessment 3 Allied Health Professions, Dentistry, Nursing and Pharmacy.

Each REF submission is appraised against clear criteria. Academic writing, in the form of peer reviewed journal articles forms the most common output in our area and therefore constitutes the largest part of what we are judged on. More than 95% of the Teesside health group outputs were internationally recognised in terms of originality, significance and rigour, with 57% being internationally excellent and 8% world leading.

For the first time, the REF took account of the impact of our work through the assessment of three of our case studies. 100% of our impact portfolio was judged to be very considerable or outstanding. The impact resulting from Dr Vida Zohoori's research on flouride metabolism was

highlighted by the REF sub-panel for its outstanding reach and significance.

The REF sub-panel concluded that we had a "well-developed strategic approach to impact . . . conducive to delivering future impacts of very considerable reach and significance".

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Our research strategy and solid infrastructure were considered to be some of the strongest aspects of our submission. The REF also highlighted the importance of our contributions to health as a discipline of study.

The writing of our submission was managed by Professor Alan Batterham who co-ordinated numerous staff contributions into one formidable document. Our sights are set on continuing to improve our work in advance of the 2020 REF.

Teesside-sponsored study on treatment of shoulder fractures is published in world-leading journal

An important clinical trial undertaken by staff at Teesside University and James Cook University Hospital has come to an end. The main results from the PROximal Fracture of Humerus: Evaluation by Randomisation (PROFHER) trial have now been reported in the Journal of the American Medical Association (JAMA). This influential journal is one of the most highly-cited in the world. The results from the PROFHER trial have also generated considerable interest in the media.

In the trial, surgical treatment for the majority of displaced fractures of the proximal humerus (broken shoulder) was compared with non-surgical treatment. These fractures are very common in older people, often resulting from a fall. Following treatment, trial participants completed postal questionnaires on their shoulder function and general health at 6, 12 and 24 months. The trial found that surgery, despite being increasingly used, does not result in a better outcome for most people with shoulder fractures.



Above: Proximal humeral fracture with subsequent internal fixation

Dr Helen Handoll has worked on the PROFHER trial from its conception as part of the trial management team. She is also the lead author of the trial monograph which is accessible in the Health Technology Assessment (HTA) journal. This comprehensive account of the methods and findings of the trial is a result of substantial team work. The HTA monograph also includes an analysis of treatment costs, including the treating of complications, which shows that surgery costs more over two years. The results of this trial should prevent patients with shoulder injuries having unnecessary operations. In addition to the benefit for patients, the trial findings will also deliver NHS cost savings.

The trial found that surgery, despite being increasingly used, does not result in a better outcome for most people with shoulder fractures.

PROFHER is a joint collaboration between Teesside University (trial sponsor and trial management), the Trials Unit at the University of York (trial management) and Teesside University visiting Professor Amar

Rangan, chief investigator, clinical lead and consultant orthopaedic surgeon at James Cook University Hospital. PROFHER was funded at just over £1.35m by the National Institute for Health Research's Health Technology Assessment Programme.

JAMA:

Rangan A, Handoll H, Brealey S, Jefferson L, Keding A, Corbacho Martin B, Goodchild L, Chuang LH, Hewitt C, Torgerson D, for the PROFHER Trial Collaborators. Surgical vs nonsurgical treatment of adults with displaced fractures of the proximal humerus: The PROFHER randomized clinical trial. JAMA. 2015;313(10):1037-1047. doi:10.1001/jama.2015.1629.

HTA:

Handoll H, Brealey S, Rangan A, Keding A, Corbacho B, Jefferson L, et al. The ProFHER (PROximal Fracture of the Humerus: Evaluation by Randomisation) trial – a pragmatic multicentre randomised controlled trial evaluating the clinical effectiveness and cost-effectiveness of surgical compared with non-surgical treatment for proximal fracture of the humerus in adults. Health Technology Assessment 2015;19(24).

An affiliated Centre of the Joanna Briggs Institute



Above: Teesside University's Centuria Building

In a major development for the Teesside University HSCI, a new collaborating centre of the Joanna Briggs Institute (JBI) will open later this year. The JBI is the international, not-for-profit research arm of the School of Translational Science at the University of Adelaide. In a hub and spoke model, the JBI supports an international partnership of over 70 collaborating centres. The aim of each centre is to improve worldwide healthcare by synthesising research evidence so that the decision-making of health and social care professionals is always evidence-based. Centres work closely with clinical and practice colleagues to ensure that proposed reviews are relevant.

The HSCI is in an excellent position to establish the JBI as it already has a strong record of producing high quality systematic reviews of research evidence, particularly Cochrane reviews. The HSCI also has an excellent record in collaborative work and co-production of research with practice and clinical partners locally, nationally and internationally.

In the coming year, director of the new centre Dr Sharon Hamilton, deputy director Dr Louisa Ells, and core centre member Dr Liane Azevedo, will be working with colleagues to develop a programme

of practice-focused reviews, including a suite of reviews in collaboration with our geographically-closest hospital, South Tees Hospitals NHS Foundation Trust.

The HSCI is in an excellent position to establish the JBI as it already has a strong record of producing high quality systematic reviews of research evidence

Early outputs from this new venture are likely to reflect current research strengths in the HSCI such as rehabilitation, prehabilitation and public health. As the centre matures the outputs topics are expected to broaden in line with local and national priorities.

Researchers undertaking reviews in the new centre are keen to work with colleagues from the School of Health & Social Care and the wider health economy. Researchers welcome opportunities to discuss future review topics.

Meet the team dedicated to reducing alcohol misuse

Dorothy Newbury-Birch, Professor of Alcohol and Public Health Research, joined the HSCI in January 2015. She is a member of Fuse the Centre for Translational Research in Public Health a UKCRC Centre of Excellence. Dorothy leads a growing team of alcohol-related public health researchers.



Above: Professor Dorothy Newbury-Birch and the team dedicated to reducing alcohol misuse

Harmful drinking is a particular problem for public health and can result in physical and/or psychological problems for some people. Hazardous patterns of drinking can also result in societal harm through issues such as violence and crime. Professor Newbury-Birch's work tackles issues around alcohol-related harm and alcohol use disorders particularly in young people and in the criminal justice setting. She has an extensive track record in this area, having helped to obtain over £11m for alcohol misuse research in her previous role at Newcastle University. With over 30 publications on the topic, Professor Newbury-Birch is a leading figure in alcohol and public health research.

The consumption of alcohol can be particularly heavy in young people. This behaviour is detrimental to development and can lead to nervous system impairment as well as physical and social harms including accidents, fights and unsafe sex. The school setting has been identified as a potentially effective environment for tackling alcohol misuse in young people. Professor Newbury-Birch co-led a recent pilot study, SIPS JR-HIGH, which showed that it is feasible to carry out a trial in a school setting. Professor Newbury-Birch is now leading a definitive multi-centre study for SIPS JR-HIGH after securing a £866,000 grant from the National Institute for Health Research, PHR. Teesside

and Newcastle University, in collaboration through Fuse: the Centre for Translational Research in Public Health, are working with colleagues from Kent University, Kings College London and Liverpool John Moores University. The study will run for 28 months from September 2015. The proposed intervention will consist of a 30-minute interactive session. This research has the potential to make a significant impact in the alcohol and public health field as there is a possibility of developing a manualised screening and intervention protocol for use in secondary schools across England.

Professor Newbury-Birch said, 'I am so pleased to be developing an active team of alcohol and public health researchers at the HSCI. I look forward to working with colleagues across Teesside University as well as other people regionally, nationally and internationally'

To develop the portfolio of research led by Professor Newbury-Birch, a number of new team members have been recruited.

- Dr Grant McGeechan was recently appointed as a research associate. His interests include public health evaluations, qualitative research and co-production.
- Dr Emma Giles joined the HSCI in April 2015. She has an interest in alcohol, physical activity, dietary behaviours, social marketing, complex interventions and systematic reviews.
- Lisa Anderson, who has worked in HSCI for several years, joins the team to work on a co-production study of a local drug and alcohol service.
- Dr Vicki McGowan joins the team primarily to work on one study with young people. She has recently worked with Dr Louisa Ellis to study sugar, food advertising and marketing aimed at children.
- Gillian Waller also joins after beginning her PhD programme at Teesside.
- Robert Sayer joins the team as assistant administrator to work across the alcohol and public health projects.

Do e-health interventions work?



Above: Dr Louisa Ells has conducted research into e-health interventions

Obesity is a growing public health concern and we are always looking for more effective ways to support better health in this area. In line with the rising use of the internet, e-health technology is becoming a common method of accessing health information and could be used to provide wide reaching interventions for weight management. Dr Louisa Ells has worked with international collaborators from the Universities of Newcastle (Australia), Tennessee (USA) and Vermont (USA) on a comprehensive review examining the effectiveness of e-health interventions for weight management in adults.

The review was published earlier this year in the esteemed journal, *Obesity Reviews*. Dr Ells and her co-authors examined study data from 1995 to 2014 to assess the effectiveness of e-health interventions used for the prevention or treatment of overweight or obese adults. It was found that most interventions were delivered using the internet. Email, text messages, monitoring devices, mobile applications, computer games, podcasts and personal digital assistants were

used, with 40% of the interventions using multiple forms of technology. The results of the review indicated that e-health interventions decreased weight by a modest average of 2.7 kg. Interventions with extra components or technologies were more effective. There was insufficient evidence to demonstrate the effectiveness of e-health approaches for keeping weight stable or for slowing down any increase in weight as people age.

Although the findings from this review support the use of e-health interventions for the treatment of overweight and obese adults, the weight loss is modest compared with more traditional, short-term, group-based behavioural interventions.

Dr Ells and her co-authors concluded that e-health interventions should be considered as a treatment option for obesity alongside the design of new studies to compare short and long-term weight loss between e-health interventions and more traditional weight management. It was advised that new studies should involve participants from a range of ages, ethnicities and socio-economic groups

Although the findings from this review support the use of e-health interventions for the treatment of overweight and obese adults, the weight loss is modest compared with more traditional, short-term, group-based behavioural interventions.

and that these data should be carefully reported to make clear which groups the technology benefits.

The full article:

Hutchesson, M. J., Rollo, M. E., Krukowski, R., Ells, L., Harvey, J., Morgan, P. J., Callister, R., Plotnikoff, R. and Collins, C. E. (2015), e-health interventions for the prevention and treatment of overweight and obesity in adults: a systematic review with meta-analysis. *Obesity Reviews*. doi: 10.1111/obr.12268

Teesside University leads the way in improving the lives of those with back pain across the North East. Here we review two recent developments in the field.

Half a million pounds to develop the North East's regional back pain pathway



Left to right: Dr Sharon Hamilton, Reader in Nursing, Dr Cormac Ryan, Reader in Physiotherapy and Professor Denis Martin, Professor of Rehabilitation

Lower back pain is a prevalent condition in the UK and can have a devastating effect on an individual's quality of life. It is a leading cause of work loss in the UK and comes with a considerable cost to the economy. In January 2015, it was announced that Teesside University, in collaboration with a number of partners in North East England, was successful in obtaining a £500,000 grant to implement and evaluate a new back pain clinical pathway for North East patients.

The grant was awarded by The Health Foundation and is one of only seven Scaling

Up awards starting in the UK this year. NHS Darlington Clinical Commissioning Group is leading the project to improve outcomes for patients with lower back pain or sciatica (nerve pain in the buttocks and leg). The project involves setting up and evaluating a comprehensive care pathway through GP and hospital care.

The back pain pathway is based on strong evidence and is already being delivered in a small North East area. This grant allows the pathway to be scaled up across the region. If the project is effective it will be sustained

beyond its current two and half year life span and will be implemented across the UK.

Teesside University will evaluate the project through its Centre for Health and Social Evaluation (CHASE). The evaluation team will be led by Dr Sharon Hamilton, a director of CHASE, alongside Professor Denis Martin and Dr Cormac Ryan, who both have a strong background in the field.

This project has great potential to make a significant positive impact on patient outcomes.



Above: A small Medtronic electrical stimulator is surgically attached to the spinal cord

Medtronic stimulates more back pain research at Teesside

Earlier this year, Teesside University in collaboration with James Cook University Hospital, was awarded a £10,000 grant to investigate the experiences of patients undergoing spinal cord stimulation following failed back surgery.

The study is funded by Medtronic Ltd, a global leader in the development and distribution of spinal cord stimulation technology.

The research team consists of Professor Denis Martin, Dr Cormac Ryan, Dr Raymond Chadwick and Susan Jones from Teesside University, and Professor Sam Eldabe, consultant in pain medicine at James Cook University Hospital.

Spinal cord stimulation is an increasingly common intervention for patients with

chronic pain. A small electrical stimulator is surgically attached to the spinal cord. This stimulator is remotely controlled by the patient and sends electrical signals to stop pain messages being transmitted along the spinal cord. The stimulator reduces the levels of pain experienced by the patient.

Once a patient is identified as being suitable for spinal cord stimulation, a small trial of the device is undertaken. If the patient reports positive effects they usually undergo a full spinal cord stimulation implantation. Patients who have had unsuccessful back pain surgery make up one of the largest groups of people who receive this treatment. Many studies have investigated the clinical effectiveness of this intervention but little attention has been paid to the patient's experience of using the technology.

The purpose of this study is to understand the patient experience and identify any unmet needs. The study involves interviewing the patient at three points. Initially, interviewing seeks to understand the patient's expectations, their understanding of their pain and their knowledge of how spinal cord stimulation works. The second interview occurs after the trial period and compares the patient's expectations with their experience. The final interview occurs after the stimulator has been implanted and gathers the patient's reflections on their overall experience. This study identifies ways that patient experience can be enhanced.

Unique medical imaging research at Teesside University

Two teams of HSCI researchers have published studies to gauge the clinical relevance of various imaging approaches and to appraise their usefulness in the training of practitioners. In the field of medical imaging, visual representations of inside the body are collected through x-ray and ultrasound and then used for clinical analysis, diagnosis and to monitor the effects of medical treatments.

In 2008 the School of Health & Social Care medical imaging teaching team responded to changes in the Health and Care Professions Council's proficiencies for diagnostic radiographers. The changes required more emphasis to be placed on image interpretation in pre-registration courses. Following a programme of investment by the School, Dr Phillip Cosson and his colleagues assembled an anonymised digital teaching library (DTL) from various clinical sites. This unique library holds nearly 900,000 clinical images.



Above: An image of the neck from the digital teaching library

Dr Cosson and his team have quickly made use of the resources in radiography teaching at Teesside. The potential to use the resources as a unique research opportunity

is also now being exploited. The study of standardised terms and descriptions of clinically abnormal images has also initiated new research on the role of the radiographer in trauma services.

New publications resulting from use of the DTL include:

Kranz, R., and Cosson, P. (2015) Anatomical and/or pathological predictors for the "incorrect" classification of red dot markers on wrist radiographs taken following trauma. *British Journal of Radiology* DOI: <http://dx.doi.org/10.1259/bjr.20140503>

Lumsden, L., and Cosson, P. (2015) The Attitudes of Radiographers to Radiographer-Led Discharge: A Survey. *Radiography* DOI: <http://dx.doi.org/10.1016/j.radi.2014.07.005>

Cosson, P., and Dash, R. (2015) A taxonomy of anatomical and pathological entities to support commenting on radiographs (preliminary clinical evaluation). *Radiography* DOI: <http://dx.doi.org/10.1016/j.radi.2014.06.013>

Alongside the DTL research, Professors Greg Atkinson and Alan Batterham have completed a suite of studies on a type of biomedical measurement known as flow-mediated dilation. This technique measures the diameter of the brachial (arm) artery using ultrasound imaging. The degree of increase (dilation) in the diameter of the artery after blocking and then releasing the flow of blood in the arm is called endothelial function. This is thought to be a predictor of atherosclerosis and is therefore useful for clinical screening.

Applying their statistical knowledge, Professors Atkinson and Batterham were able to quantify the increase in artery diameter accurately. This step in the process improved on previous research which was found to be inaccurate.

Dr Philip Cosson and his colleagues assembled an anonymised digital teaching library (DTL) from various clinical sites. This unique library holds nearly 900,000 clinical images.

As a result of this development in measurement, Professors Atkinson and Batterham have challenged several assumptions about the flow-mediated dilation approach, including its overall clinical usefulness. This work has resulted in papers published in high impact journals, such as *Current Hypertension Reports*, *Journal of Hypertension*, *Atherosclerosis and Vascular Medicine*. In a leading editorial¹, the findings of Professors Atkinson and Batterham were said to be, "of unequivocal importance and highly relevant to clinical vascular research laboratories".

¹ Al Mheid, I, Quyyumi AA. *Vascular Medicine* 2013; 18: 368–371

Our thriving community of PhD students



Above: Teesside University PhD graduates on their recent graduation day

The HSCI is proud to host almost 30 PhD students who are working on topics within the fields of public health and rehabilitation sciences. Each student is mentored by two or three formal supervisors. General pastoral care is led by Dr Nigel Hanchard. There is a continual flux of new and completed PhD programmes.

Professor Rob McSherry and Dr Josette Bettany-Saltikov have been awarded almost £50,000 funding towards two new PhD studentships from the Royal College of Chiropractors (RCC) in collaboration with the Anglo-European College of Chiropractic (AECC). The first study will review registered chiropractors and undergraduate students in terms of their knowledge, attitudes and understanding of clinical governance and patient safety. This research builds on the Royal College of Chiropractors Chiropractic Quality Standard – Clinical Governance.

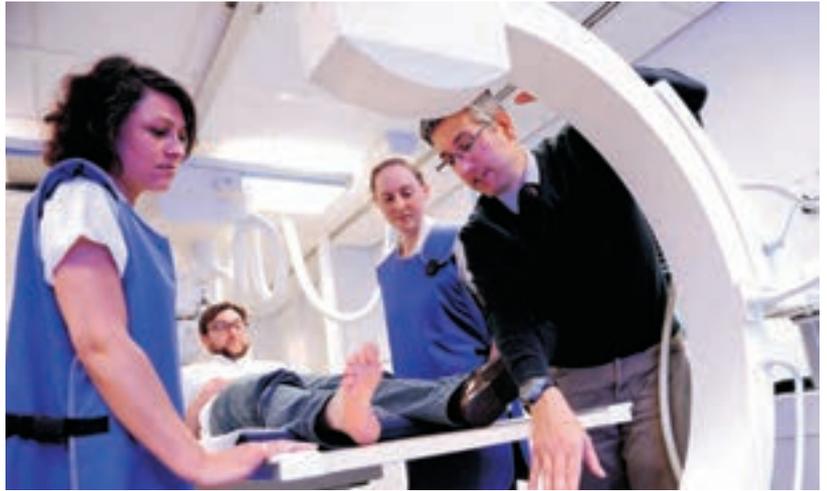
The other study led by Dr Bettany-Saltikov will build on previous work with Dr Carole Fortin, University of Montreal, for a PhD student to develop a smart phone/tablet-

based tool to investigate the impact of chiropractic care. The tool will provide valid, reliable and objective measures of chiropractic care and will link to data already collected through a separate system.

Teesside University is part of the recently established Doctoral Training Alliance (DTA) in Applied Biosciences for Health, a University Alliance initiative that delivers new approaches to postgraduate research opportunities. It builds on the research strengths and industry-focused ethos of Alliance universities, offering fully funded postgraduate programmes. The first two DTA PhD scholarships will begin in October 2015. The directors of studies for the first tranche of studies are Dr John Dixon and Professor Greg Atkinson.

School facilities

Our students benefit from state-of-the-art facilities in a purpose-built, award-winning environment, which helps them undertake valuable research projects and prepares them for their work placements.





CAMPUS DEVELOPMENTS

Investing in the future



Clockwise from top left: *Health and fitness centre*
Living wall and campus heart
The Curve, our new £20m teaching and learning building

Publications by HSCI members

January 2015 - June 2015

The new REF2020 cycle already contains almost 80 HSCI publications listed in the SCOPUS database. Over half of the 54 papers or research outputs published in 2014 have already been cited in subsequent publications. The following papers were published by HSCI staff in 2015 between January and June. Our work is coordinated into the strands of public health and rehabilitation sciences. Please see our HSCI Twitter feed @hsciResearch for new publications.

Public health

ARAI, L., PANCA, M., MORRIS, S., CURTIS-TYLER, K., LUCAS, P. J. & ROBERTS, H. M. 2015. Time, monetary and other costs of participation in family-based child weight management interventions: Qualitative and systematic review evidence. *PLoS ONE*, 10. In Press

ARAI, L., STEPHENSON, T. & ROBERTS, H. 2015. The unseen child and safeguarding: 'Did not attend' guidelines in the NHS. *Archives of Disease in Childhood*. In Press

ATKINSON, G. & BATTERHAM, A. M. 2015. The Clinical Relevance of the Percentage Flow-Mediated Dilation Index. *Current Hypertension Reports*, 17. In Press

ATKINSON, G. & BATTERHAM, A. M. 2015. True and false interindividual differences in the physiological response to an intervention. *Experimental Physiology*. In Press

AVERY, L., FLYNN, D., DOMBROWSKI, S. U., VAN WERSCH, A., SNIEHOTTA, F. F. & TRENELL, M. I. 2015. Successful behavioural strategies to increase physical activity and improve glucose control in adults with Type 2 diabetes. *Diabetic Medicine*. In Press

CURTIS-TYLER, K., ARAI, L., STEPHENSON, T. & ROBERTS, H. 2015. What makes for a 'good' or 'bad' paediatric diabetes service from the viewpoint of children, young people, carers and clinicians? A synthesis of qualitative findings. *Archives of Disease in Childhood*. In Press

DELUCA, P., COULTON, S., ALAM, M. F., COHEN, D., DONOGHUE, K., GILVARRY, E., KANER, E., MACONOCHIE, I., MCARDLE, P., MCGOVERN, R., NEWBURY-BIRCH, D., PATTON, R., PHILLIPS, C., PHILLIPS, T., RUSSELL, I., STRANG, J. & DRUMMOND, C. 2015. Linked randomised controlled trials of face-to-face and electronic brief intervention methods to prevent alcohol related harm in young people aged 14-17 years presenting to Emergency Departments (SIPS junior). *BMC Public Health*, 15. In Press

ELLS, L. J., HANCOCK, C., COPLEY, V. R., MEAD, E., DINSDALE, H., KINRA, S., VINER, R. M. & RUTTER, H. 2015. Prevalence of severe childhood obesity in England: 2006-2013. *Archives of Disease in Childhood*. In Press

HUTCHESSON, M. J., ROLLO, M. E., KRUKOWSKI, R., ELLS, L., HARVEY, J., MORGAN, P. J., CALLISTER, R., PLOTNIKOFF, R. & COLLINS, C. E. 2015. e-health interventions for the prevention and treatment of overweight and obesity in adults: A systematic review with meta-analysis. *Obesity Reviews*, 16, 376-392.

PADMANABHAN, U., SUMMERBELL, C. D. & HESLEHURST, N. 2015. A qualitative study exploring pregnant women's weight-related attitudes and beliefs in UK: The BLOOM study. *BMC Pregnancy and Childbirth*, 15. In Press

THOMPSON, D., PEACOCK, O., WESTERN, M. & BATTERHAM, A. M. 2015. Multidimensional Physical Activity: An Opportunity not a Problem. *Exercise and Sport Sciences Reviews*. In Press

Rehabilitation sciences

CHEUNG, P. P. Y. & AZEVEDO, L. B. 2015. Sensory Integration and Response to Balance Perturbation in Overweight Physically Active Individuals. *Journal of Motor Behavior*. In Press

COSSON, P. & DASH, R. 2015. A taxonomy of anatomical and pathological entities to support commenting on radiographs (preliminary clinical evaluation). *Radiography*, 21, 47-53.

EDWARDS, R. T., YEO, S. T., RUSSELL, D., THOMSON, C. E., BEGGS, I., GIBSON, J. N. A., MCMILLAN, D., MARTIN, D. J. & RUSSELL, I. T. 2015. Cost-effectiveness of steroid (methylprednisolone) injections versus anaesthetic alone for the treatment of Morton's neuroma: Economic evaluation alongside a randomised controlled trial (MortISE trial). *Journal of Foot and Ankle Research*, 1-11. In Press

- FERGUSON, F. C., MORISON, S. & RYAN, C. G. 2015. Physiotherapists' understanding of red flags for back pain. *Musculoskeletal Care*, 13, 42-50.
- GEORGE, K. & BATTERHAM, A. M. 2015. So what does this all mean? *Physical Therapy in Sport*, 16, 1-2.
- GREENWELL, K., GRAY, W. K., VAN WERSCH, A., VAN SCHAİK, P. & WALKER, R. 2015. Predictors of the psychosocial impact of being a carer of people living with Parkinson's disease: A systematic review. *Parkinsonism and Related Disorders*, 21, 1-11.
- HANDOLL, H., BREALEY, S., RANGAN, A., KEDING, A., CORBACHO, B., JEFFERSON, L., CHUANG, L. H., GOODCHILD, L., HEWITT, C. & TORGERSON, D. 2015. The ProFHer (PROximal fracture of the humerus: Evaluation by randomisation) trial – A pragmatic multicentre randomized controlled trial evaluating the clinical effectiveness and cost-effectiveness of surgical compared with non-surgical treatment for proximal fracture of the humerus in adults. *Health Technology Assessment*, 19, 1-279.
- HARLAND, N. J., DAWKIN, M. J. & MARTIN, D. 2015. Relative utility of a visual analogue scale vs a six-point Likert scale in the measurement of global subject outcome in patients with low back pain receiving physiotherapy. *Physiotherapy (United Kingdom)*, 101, 50-54.
- KING, R., JOHNSON, M. I., RYAN, C. G., ROBINSON, V., MARTIN, D. J. & PUNT, T. D. 2015. My foot? Motor imagery-evoked pain, alternative strategies and implications for laterality recognition tasks. *Pain Medicine (United States)*, 16, 555-557.
- KRANZ, R. & COSSON, P. 2015. Anatomical and/or pathological predictors for the "incorrect" classification of red dot markers on wrist radiographs taken following trauma. *British Journal of Radiology*, 88. In Press
- LUMSDEN, L. & COSSON, P. 2015. Attitudes of radiographers to radiographer-led discharge: A survey. *Radiography*, 21, 61-67.
- MAKHUMULA-NKHOMA, N., WHITTAKER, V. & MCSHERRY, R. 2015. Level of confidence in venepuncture and knowledge in determining causes of blood sample haemolysis among clinical staff and phlebotomists. *Journal of Clinical Nursing*, 24, 370-385.
- RANGAN, A., HANDOLL, H., BREALEY, S., JEFFERSON, L., KEDING, A., MARTIN, B. C., GOODCHILD, L., CHUANG, L. H., HEWITT, C. & TORGERSON, D. 2015. Surgical vs nonsurgical treatment of adults with displaced fractures of the proximal humerus the PROFHER randomized clinical trial. *JAMA - Journal of the American Medical Association*, 313, 1037-1047.
- RYAN, C. 2015. Evidence-based care: Misunderstandings and misnomers. *International Journal of Therapy and Rehabilitation*, 22, 156.
- SHARMA, J., GREEVES, J. P., BYERS, M., BENNETT, A. N. & SPEARS, I. R. 2015. Musculoskeletal injuries in British Army recruits: A prospective study of diagnosis-specific incidence and rehabilitation times. *Epidemiology of musculoskeletal disorders. BMC Musculoskeletal Disorders*, 16. In Press
- SHAW, A. J., INGHAM, S. A., ATKINSON, G. & FOLLAND, J. P. 2015. The correlation between running economy and maximal oxygen uptake: Cross-sectional and longitudinal relationships in highly trained distance runners. *PLoS ONE*, 10. In Press
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