

» AGEING CLINICAL AND EXPERIMENTAL RESEARCH

ANNUAL REPORT

2019



UNIVERSITY OF
ABERDEEN

 **ACER**
AGEING CLINICAL AND EXPERIMENTAL RESEARCH



Acknowledgements

We are indebted to the contribution of our team members and external affiliates, collaborators and visitors throughout 2019 in delivering the patient focused research in line with ACER aims and objectives. We also thank the administrative and supporting staff from the University of Aberdeen, School of Medicine, Medical Sciences and Nutrition.

Special thanks to Dr Kathryn Martin from the Academic Primary Care Group (co-supervisor of Selva's PhD), Dr David McLernon from Medical Statistics Group (co-supervisor of Michelle's PhD), Professor Christine Bond, Dr Moira Cruikshank and Dr Rumana Newlands (co-supervisors of Toney's PhD work), Professor Alison Murray (primary supervisor) and Dr Christopher McNeil (co-supervisor of Mina's PhD thesis), and Professor Maw Pin Tan (primary supervisor of Melissa's thesis) and Dr Sohinee Bhattacharya, and Professors Angela Kydd and Kay Cooper from RGU who co-supervise Bolanle's NHS Research Scotland Clinical Fellowship.

We also thank Mrs Morag McConnell and Mrs Janice Forsyth for their admin support for the team.

We also thank our funders for their support.



Ageing Clinical and Experimental Research



About us

We are clinical and non-clinical academics who carry out inter-disciplinary research. We are also part of the NHS Grampian Academic Centre for Applied Clinical and Translational Research into Ageing (ACTRA). We have strong links with several research groups within the Institute of Applied Health Sciences and other research institutes within the School of Medicine, Medical Sciences and Nutrition.

Objectives

- To identify novel risk factors and improve understanding of the prognosis of conditions common in older age
- To develop targeted and personalised clinical and service interventions to improve quality and safety in the health care and outcome of older people
- To promote health and wellbeing of older people through research that will have a positive impact on their quality of life

Support Us



You can support our research in the following areas by donating through the University's Development Trust quoting_

"Ageing Clinical & Experimental Research Endowment Funds"

- Capital projects/Infrastructure support
- Academic posts: Research Fellow, Endowed Lectureship/ Senior Lectureship and Endowed Chair
- Scholarships such as clinical and non-clinical PhD scholarships and medical student bursaries
- Project support: Research Fellow and project costs
- General contribution to support any of the above areas and other activities such as dissemination activities e.g. attending conferences and public engagement events

We welcome engagement from potential donors who are considering supporting specific piece of ageing related research which falls within the remit of ACER objectives. If you wish to donate to support our research and have any questions regarding how this may help to deliver our objectives, please do not hesitate to contact Professor Phyo Myint phyo.myint@abdn.ac.uk / acer@abdn.ac.uk

Words of Lead Academic

It is indeed both satisfying and humbling to see how ACER team and its team members have grown over the past few years since its inception in late 2016. We thank the support received from both NHS department, Department of Medicine for the Elderly, NHS Grampian, and the Institute of Applied Health Sciences, University of Aberdeen, which enabled us to excel and flourish.



The Proof is in the Pudding that ACER members engage in relevant, novel and important research

Both at individual level and population level for the benefit of patients, public, service providers and policy makers. We hope that we have demonstrated this beyond doubt.

Of course, there are ups and downs all the time and sometimes it seems there is no light at the end of the tunnel but as a team we are a strong team who support each other to enable everyone to achieve their fullest potential. I hope you will find the ACER 2019 report is exciting, inspiring, refreshing and a good read.

Lead Clinical Academic

Professor Phyo Myint

Looking Back At 2019

In 2019 we saw gradual expansion in ACER research activities as well as research facilities. ACER Research Hub office space facilities have been increased to additional desk spaces and computers in both room 1.127 and 1.128 giving a total of 15 working desks.

As usual, we had another great summer with several scholarship summer students and volunteer research students. Thanks to Geriatrics Research endowment funds, we were able to award scholarships to two students: Leslie Wilson Aberdeen Summer Research Scholarship (ASRS) to Jonathan Quinn and Gwen Seymour ASRS Scholarship to Andrew Wall. We also congratulate Rahman (Abdel Rahman Abdel-Fattah), Zahra (Pasdar), Wronika (Szlachetka) and Yuen (Phui Yuen Wong) for being successful with a Medical Research Scotland vacation awards and Ross Lilley and Samyak Verma for their INSPIRE Interdisciplinary Scholarships. Other scholarship students who worked with us during summer of 2019 included Liam Lennox & Panos (Panyiotis Tanos) (Innes Will Scholarships), Katherine Graves-Morris (IAHS scholarship) and Jesus (Perdomo Lampignano) (funded by Breast Surgery Unit, NHSG). We also hosted two visiting research interns from Padana University Royal College of Surgeons of Ireland, Charisma Nair Murali and Nivashinie Raviendran.

Carrie continues as the post-doctoral research fellow as a less than full time researcher supported by various funding sources and one of the milestones is the development of ACER Patient and Public Involvement (PPI) group. Izzy has also been appointed as SCREDS CL in 2019 and joined the team as second SCREDS CL in geriatric medicine from August 2019. There was a lot of media interest in our work throughout 2018 in a number of areas as detailed in the press release section.

Special congratulations to Michelle and Selva both of whom completed their respective PhD work and submitted in time. We are looking forward to collaborating with both of them in the future for some ongoing work which are of mutual interest. Last but not the least -well done to Bolanle in securing 3-year NHS Research Scotland Clinical Fellowship funded by the Chief Scientist Office.

Welcome



Dr Isobel Sleeman

We are delighted to welcome Izzy who was appointed as a SCRED Clinical Lecture as one of the core academic staff of ACER.



Mrs Bolanle Brikinns

Bolanle stepped down from her Trial Co-ordinator role and re-join ACER (for third time) as NHS Research Scotland Fellow. We are delighted to host her fellowship (co-supervised by Dr Bhattacharya (Centre for Women Health) and Professors Kydd and Cooper from RGU. In this new role she will carry out her NRS fellowship alongside her research duties over 3 years (April 2019-March 2022).



Visitor - Dr Mouna Sawan

Mouna was successful in securing funding for Emerging Research in Ageing Fellowship and spent 6 weeks in Aberdeen as a visiting post-doctoral research fellow. Mouna's project focused on the content validation of a tool to be used by care home stakeholders to evaluate the culture of Care Homes related to psychotropic prescribing. She developed the PRACTICE tool during her PhD fellowship.

Goodbye



Dr Michelle Tørnes

We say goodbye to Michelle – who enrolled into Diploma in Education to become a School Teacher in Remote and Rural Scotland. We are delighted that she will be an inspirational teacher, Dr Tørnes.



Dr Selvarani Subbarayan

Selva has contributed hugely to ACER activities over the years as the staff PhD candidate and SENATOR Trial Research Fellow. Her unofficial roles included advising visiting students and scholars for accommodation and being a usual supplier of Chicken Biryani for our ACER in-house work-dos! She took up Trial Manager role in Tayside Clinical Trial Unit.

Awards & Grants



Zarah Pashar

Congratulations to Zahra Pashar (co-supervised by Sohinee, David Gamble and Phyo) who won the Commendation Prize this year at the scholarship symposium in November 2019 for her MRS project over the summer.

Mina Khezrian

Received award from Morningfield Association in support of her PhD research. Award value was £15,000 to cover stipend and research cost of the final year of PhD study.

Isobel Sleeman

Constipation and changes in the gut microbiome in Parkinson's disease: A Pilot Study
ISSF Grant £19,859

Bolanle Brikinns

The role of lifestyle factors in the development of cardiovascular disease in women with a history of hypertensive disorder of pregnancy - Chief Scientist Office NRS Fellowship (20% fte over 3 years)

Carrie Stewart

PPI Group Fund - Morningfield Association £1550

Alison Donaldson

SCoOP – StR Start Up Grant - British Geriatrics Society £10,000

Phyo Myint (Lead Professor Frances Mair, Glasgow)

Understanding stakeholder views regarding the design of an intervention trial to reduce anticholinergic burden - CSO Catalytic Grant £35,000

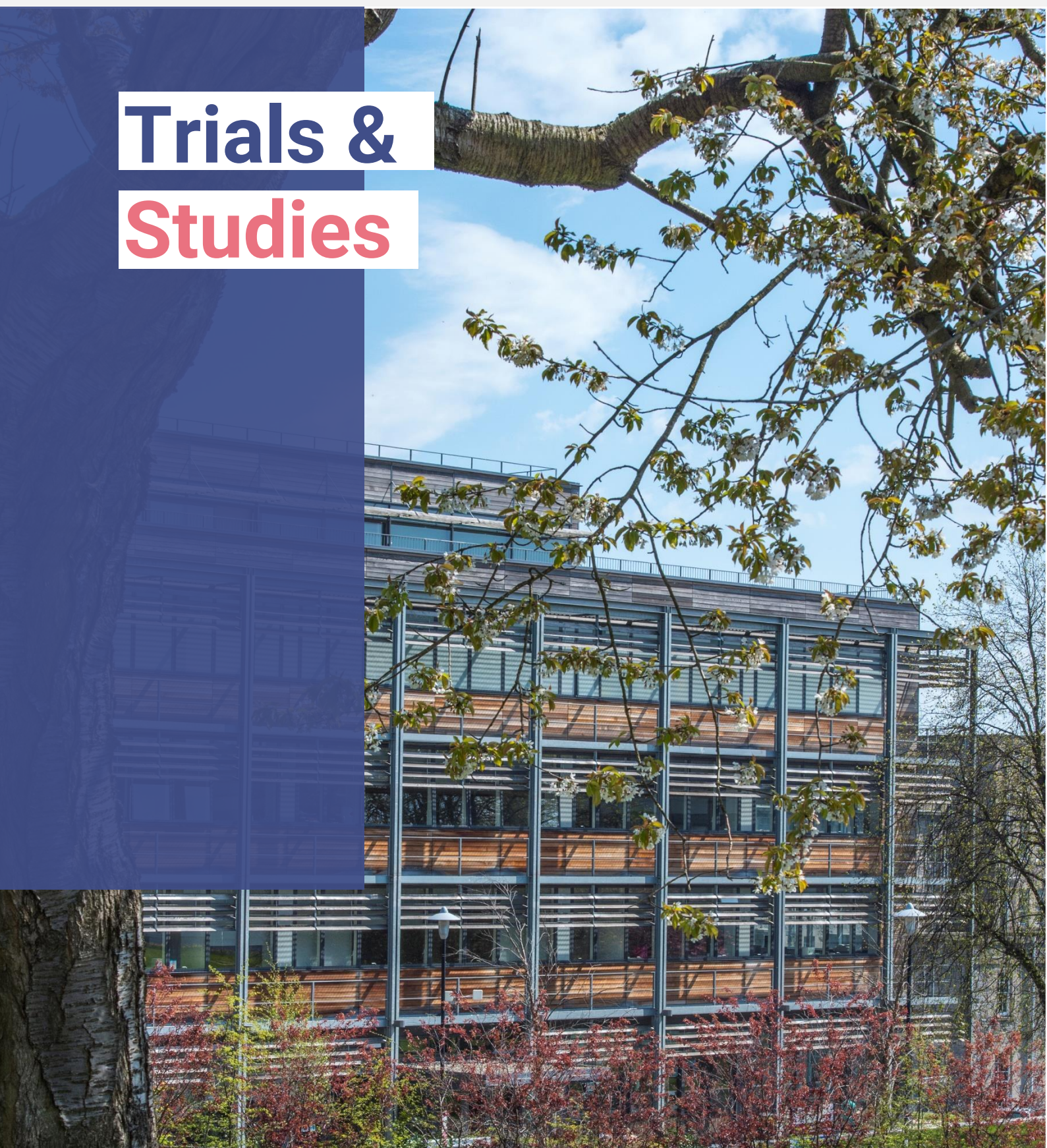
Ekta Gupta

Oral health literacy in older adults with chronic diseases - Oral and Dental Research Trust £5,000

Phyo Myint

NIHR Dementia Portfolio Development Writing Groups (SERVED Memory and ACB reduction Interventions)

Trials & Studies



Completed Trials & Studies



RAINDrop Trial

<https://raindrop.org.uk/>

This is a Pilot RCT on Management of Iron Deficiency Anaemia in Older People which had several barriers to overcome despite careful preliminary initial groundwork. Therefore, the trial did not receive extension from the CSO and came to an end in December 2020. However, we have learned a few lessons which will help us to design a better trial to address this important issue which affect the quality of life of many older people. We thank the trial team members and the Tayside Clinical Trial Unit (TCTU) which ran the trial. Special thanks to Pauline Amory (Trial Manager) and Fiona McLaren-Neil (Trial Co-ordinator) from TCTU both of whom have contributed hugely and tirelessly to the trial.



Ageing Gut-Brain Interactions Study

We were able to recruit and consent 60 participants from participating care homes in Aberdeen and Aberdeenshire despite the challenging nature of the study. Four NHS Grampian research nurses (Sandra Mann, Eunice Morgan, Alison Mackay, Bolanle Brikinns) funded by the NHS-Grampian Endowment Grant helped to run the study and we are grateful for their assistance and hard work. They were very much integral in facilitating recruitment and consenting next of kin for their relatives' participation. The study PI (Professor Alex Johnstone) has led the study ably with resultant incredible amount of outputs achieved from this study. We thank Alex and co-investigator Dr Karen Scott for supporting junior academic team members of ACER through this project.

The translational value of microbiota-gut-brain axis therapeutics for AD patients remains an open question. The current literature provides some preliminary evidence that psychobiotic therapy may one day be considered a possible adjunct therapy in the treatment of AD symptoms. We are now in analysis phase and we hope to have final results in mid-2020.

Ongoing Trials



CHIPPS: The Care Homes Independent Pharmacist Prescribing Study

The full trial is currently ongoing with expected completion date of Autumn 2020. The summary of the progress of the trial to date can be found at CHIPPS website - uea.ac.uk/chipps/summary



CATHETER II trial

This is another NIHR HTA study led by the Chief Investigator: Professor Mohamed Abdel-Fattah. Several catheter washouts policies are used in clinical practice for prevention and/or management of long-term catheter (LTC) blockage. Washouts used are of different types (normal saline, acidic, antimicrobial); volumes (50 and 100mls) and frequency of administration. The recent Cochrane review (2017) assessed the best available evidence and found insufficient evidence to determine whether prophylactic catheter washout policies had a beneficial or harmful effect on any of the outcomes in patients with LTC. The authors recommended a rigorous and methodologically robust RCT to assess the clinical and cost effectiveness of washout policies in patients with LTC. The aim of the study is to determine whether the addition of a policy of prophylactic catheter washouts on a weekly basis to the current standard LTC care improves the outcome of care for people living with a LTC in the UK. In this study we will be seeking to answer the following research question “What is the clinical and cost-effectiveness, patient acceptability and satisfaction, and safety of weekly prophylactic catheter washout policies in addition to standard LTC care compared to standard LTC care only, in adults living with LTC?”

Research Synthesis

Research synthesis work during 2019 focused around two important aspects of health (1) series of systematic reviews to synthesise evidence for next stage of development in interventions targeting to reduce anticholinergic burden from medications funded by the Dunhill Medical Trust, and (2) women health issues in a wide range of subject matters covering environmental, social and medical sciences. The latter came from Bolanle's NRS fellowship work and also from existing collaboration with Thailand and Keele University Prognostic Research Group and new collaboration with Faculty of Architecture and Urban Planning, Shahid Beheshti University and School of Public Health, Iran University of Medical Sciences.

Public Health Research

We continue to collaborate with several cohort studies including EPIC-Norfolk, Aberdeen Birth Cohorts (ABC 1921, ABC 1936 and Aberdeen Children of Ninety-Fifty (ANCOF)) and MELoR (Malaysian Elders Longitudinal Research), Malaysia. Our epidemiological work is more aligned with topic areas of our research synthesis and has a particular focus on pharmacoepidemiology and women health. With addition of Izzy as the team member with specific expertise and interest in Parkinson's disease and movement disorders, we are also developing growing interest in PD related research (using English Longitudinal Study of Ageing) alongside existing established epidemiological work of the team which focuses on cardiovascular and nutritional epidemiology.

Database Research

We continued our collaboration with various national and international colleagues in database/registry driven research during 2019. These included continued collaboration with Thai National Stroke Database team with colleagues from Thailand, VISTA Collaborators <http://www.virtualtrialsarchives.org/vista/>, Aberdeen Maternity Neonatal Databank (AMND) and the PINE (Parkinson's disease in North East) Study. We have continued success with established collaborations with Professor Mamas' Group at Keele using MINAP and NIS work. In 2019, we continued to be a key part of the OPSOC Collaboration <http://www.opsoc.eu/> in dissemination of outputs from database in existence. We continue stroke register research using Norfolk and Norwich Stroke & TIA Register.

Experimental/Fundamental Research

CAPE (Cardiovascular Health in Women with history of Pre-eclampsia) Study:

As of end 2019, we are about 1/3 through with recruitment. To date, we have demonstrated the successful delivery of study procedures. We gratefully acknowledge the support provided by the R&D NHSG research nurse team and special thanks to Amelia from Cardiovascular Research Facility who is integral in setting up CAPE study.

National Audits

Scottish Care of Older People (SCoOP) Audit

This is a joint initiative set up in late 2016 by three key partners: Healthcare Improvement Scotland, the British Geriatrics Society, and the University of Aberdeen as the lead Academic Institution with representatives from other Scottish Universities with Clinical Academic Departments in Geriatric Medicine. This is now being recognised as one of the Scottish National Audit Programmes and formal registration processes has been initiated in late 2019. The SCoOP website will be hosted by the British Geriatrics Society in future and this will ensure SCoOP activities are promoted to relevant stakeholders.



Emergency Laparotomy and Laparoscopy Scottish Audit (ELLSA)

This is new collaboration set up in 2019. Current ongoing collaboration has two main focuses (1) the role of frailty assessment in prognostication of outcomes for surgical patients and (2) process of care and outcome variations.

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Reports

Ellis, G, Soiza, R, Myint, PK, Buchanan, S & SCoOP Steering Group 2019, SCoOP Acute Hospital Outcomes Report: An overview of outcomes of acute geriatric medicine services in Scotland. University of Aberdeen. <https://ihub.scot/media/6630/scoop-report.pdf>

Posters in 2019

UK Diabetes in Pregnancy Conference 2019: Promoting Longer Term Health, 21 November 2019, Bristol, UK

Long term effects of gestational diabetes on bone mineral density and fracture risk: European Prospective Investigations into Cancer (EPIC)-Norfolk prospective population-based study. Annes Ahmeidat, Sohinee Bhattacharya, Robert N Luben, Nicholas J Wareham, Phyo K Myint.

European Society of Cardiology Heart & Stroke Conference, 25-26 Jan 2019, Berlin, Germany

The individual and combined impact of heart failure and atrial fibrillation on ischaemic stroke outcomes: a prospective hospital register cohort study. Tiberiu A Pana, David J McLernon, Mamas A. Mamas, Joao H Bettencourt-Silva, Anthony K Metcalf, John F. Potter, Phyo K Myint

Health Services Research and Pharmacy Practice Conference, 8-9 April, Birmingham, 2019.

Interventions to reduce anticholinergic burden in adults aged 65 and over: A systematic review. Nakham A, Myint PK, Newlands R, Bond CM, Cruickshank M.

British Neuro-Oncology Society Conference, 3-5 July, London QE II.

The relationship between travel time to primary and tertiary centres and survival in glioblastoma: Grampian experience. Damjan Veljanoski, Raphae S Barlas, Aimun Jamjoom, Phyo K Myint.

5th International Clinical Trials Methodology Conference (ICTMC 2019)-6-9 October 2019, Brighton.

Recruitment to the Randomised Iron Deficiency anaemia management Pilot (RAINDrop). Fiona McLaren-Neil, Pauline Armory, Phyo K Myint, Amanda Cardy, Claire Jones.

European Prevention of Alzheimer's Dementia (EPAD) Consortium Conference and SINAPSE (Scottish Imaging Network: A Platform for Scientific Excellence) Annual Conference. King's College Conference Centre, Aberdeen, UK. 22-23 Aug 2019.

Probiotic, Prebiotic and Synbiotic Supplementation for the Treatment of Cognitive, Behavioural and Psychological Symptoms in Neurodegenerative Diseases: a Protocol for a Systematic Review. Ross Lilley, Charisma Nair Murali, Nivashinie Raviendran, Roy Soiza, Karen Scott, Phyto Myint, Alexandra Johnstone.

Survey of Care Home Interest in Participating in Nutritional Intervention Trial. Donaldson, A.I.C., Kishor, M, Scott, K, Johnstone, A.M, Myint, P.K.

Impact of Diabetes on Complications, Mortality and Recurrence in 608,890 Hospitalised Patients with Stroke. Weronika A Szlachetka; Tiberiu A Pana; Somsak Tiamkao, Allan B Clark; Kannikar Kongbungkiat, Joao H Bettencourt-Silva, Kittisak Sawanyawisuth, Narongrit Kasemap, Mamas A Mamas, Phyto K Myint.

European Stroke Organisation Conference, 22-24 May 2019, Milan, Italy.

Hospital-level variations in rates of inpatient UTI occurrence in stroke- an Anglia Stroke Network Evaluation Study. Tønnes M, McLernon DJ, Bachmann MO, Musgrave SD, Warburton EA, Potter JF, Myint PK.

A comparison of beat-to-beat with other measurement methods estimating blood pressure variability in patients with cerebrovascular disease. Davison W, Myint PK, Potter JF.

Associations between blood pressure variability and stroke severity or subtype with a recent ischaemic stroke. Davison WJ, Appiah K, Robinson TG, Rothwell PM, Myint PK, Potter JF.

Oral Presentations in 2019

BGS Scotland Spring meeting, 26 April 2019, Edinburgh.

Baseline anticholinergic burden predicts poorer baseline and long-term health-related quality of life in 16,675 men and women of EPIC-Norfolk prospective population-based cohort study. KR Yrjana, SR Neal, RL Soiza, V Keevil, RN Luben, NJ Wareham, KT Khaw, PK Myint.

Tenovus Grampian Research Symposium, 22 Aug 2019, Robert Gordon University, Aberdeen

The Ageing Gut Brain Study: Challenges and Opportunities for Research in the Care Home Environment. Alex Johnstone on behalf of AGE-GB Team.

The prognostic utility of cardiovascular biomarkers in women with pre-eclampsia-the CAPE study. David Gamble on behalf of CAPE study team.

BGS Scotland Autumn 2019, Dumfries, 22 November 2019.

Scottish Care of Older People (SCoOP) National Audit update. Marc Locherty, Christine McAlpine, Phyo K Myint.

Public Engagement in 2019

One of the key activities of ACER is public engagement. In 2019, we continued to actively engage with such activities.

Meet the Researcher Showcase (Feb 2019)

Café Med 13 March 2019 - Testosterone: The Goldilocks Hormone

May Festival May 2019 - Healthy Ageing (in Collaboration with Chronic Disease Research Group)

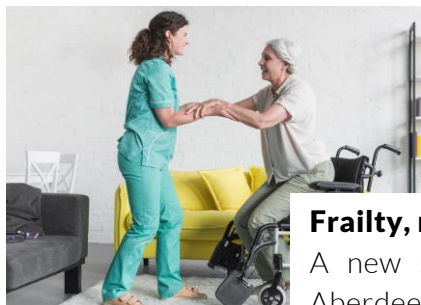
May Festival May 2019 - Do No Harm

TechFest Tomorrow Doctors

TechFest 27 September 2019 – Anticholinergic Burden

Café Med 7 Oct 2019 - Less is more

Press Releases



Frailty, not old age, best predictor of death

A new study involving researchers from the University of Aberdeen has found that regardless of age, the more frail a patient is, the less likely they are to survive. The study, published in the journal *Age and Ageing* by Oxford University Press, indicates that frail patients in any age group are more likely to die than those who are not frail.



Hospital admissions for older people's services increase by 10% every year across Scotland

Admissions to geriatric medical wards in the 19 largest hospitals with major emergency departments in Scotland have risen by 10% for three consecutive years, reaching 43,311 by 2017/18, according to a new report.

The Acute Hospital Outcomes Report 2017/18 - an overview of outcomes of acute geriatric medicine services in Scotland published by Scottish Care of Older People National Audit Project - found that length of stay, however, has decreased across all sites by an average of one day over the same time period.

Congratulations!

Dr Stephen James Thomas McCall



Triple congratulations to Steve who passed his DPhil, got married and secured an assistant professorship at the American University of Beirut, Epidemiology and Population Health. Steve has been an ACER team affiliate member since its inception.

Dr David Gamble



Another triple congratulations to David who completed his CMT training within 18 months, passing his MRCP II and being appointed as BHF Clinical Research Fellowship (all in 2019!) to work on a clinical trial focusing on “women with broken heart” with Professor Dana Dawson.

Drs Raphael Barlas and Genevieve Barlas



Double congratulations to both Raphael and Genevieve Barlas both of whom have become academic foundation doctors in North of Scotland and also tying the knot to each other.

Raphael will be supervised by Phyoo and he will continue to work on his ongoing research projects with ACER whilst Genevieve will be working with Neurology Team.

Looking Ahead

Next year, 2020, is looking equally very exciting and promising. We have gained reputation as a training centre for ageing research. We are proud of our team's ethos of nurturing people to achieve their fullest potential. We look forward to starting new projects and working with new people including new summer scholarship students and PhD students who are already in progress for registration for their PhD during 2020.

We aim to continue our excellence in fostering ageing clinical and experimental research together with our collaborators, staff and students. Through Bolanle's fellowship and Ageing Research Network in North, we are looking forward to enhancing our collaboration with colleagues from the Robert Gordon University in 2020 and beyond. We have achieved our ambition to expand our internal and external collaborations through various projects in 2019 and we aim to continue this success.



From left to right: Roy Soiza, Weronika Szlachetka, Alison Donaldson, Mouna Sawan, Selvarani Subbarayan, Pamela Paton, Tiberiu Pana, Sirjana Devkota, Alexander Davidson, Kirsty Hudson, Ross Lilley, Katherine Graves-Morris, Liam Lennox, Zahra Pasdar, Athagran Nakham (Toney), Michelle Tørnes, Carrie Stewart, Phyto Myint, Mina Khezrian

Members (December 2019)

Lead Clinical Academics

- Professor Phyo Kyaw Myint

Honorary Senior Clinical Academic Staff (NHS Grampian)

- Dr Roy L Soiza-Honorary Clinical Reader
- Dr Robert Caslake-Honorary Senior Clinical Lecturer

Clinical Lecturers

- Dr Alison I C Donaldson- SCREDS Clinical Lecturer
- Dr Isobel Sleeman- SCREDS Clinical Lecturer

Research and Related Staff

- Dr Carrie Stewart –Postdoctoral Research Fellow/PPI Lead
- Jackie Inch- Research Fellow (CHIPPS)
- Lyndsay Dalgarno- Research Fellow (CHIPPS)
- Bolanle Brikinns - NHS Research Scotland Research Fellow

Postgraduate Research Students

- Miss Michelle Tørnes- PhD Candidate.
- Mr Athagran Nakham- PhD Candidate
- Mrs Mina Khezrian- PhD Candidate
- Dr Selvarani Subbarayan- PhD candidate
- Miss Shen Hui Kioh (Melissa)- PhD Candidate (University of Malaya/Malaysia)

Honorary Clinical Research Fellows

- Dr Alexander Davidson- Honorary Research Fellow/STR
- Dr Julie-Anne Gabbott- Honorary Research Fellow /CDF
- Dr Kirsty Hudson- Honorary Research Fellow/CDF
- Mr Luke Farrow- Honorary Research Fellow/STR
- Mr Iain Rankin- Honorary Teaching Fellow/STR
- Dr David Gamble - Honorary Research Fellow/CMT
- Dr Adrian D Wood – Honorary Research Fellow/AFP
- Dr Raphael Barlas- Honorary Research Fellow/AFP

UoA Staff/Student Affiliates

- Mr Tiberiu A Pana - Intercalating MRes Student
- Mr Jesus A Permodo-Lampignano- Final Year MBChB
- Mr Andrew Ablett -Final Year MBChB
- Miss Weronika Szlachetka- 3rd Year MBChB
- Mr Abdelrahman Abdel-Fattah- 3rd Year MBChB
- Miss Zarah Pasdar- 3rd Year MBChB

NHS Research Nurses

- Sirjana Devkota (RAINDroP)
- Pamela Paton (RAINDroP)
- Sandra Mann (Age-GB)

Visiting Staff/Students/External Affiliates

- Dr Stephen Makin- Senior Clinical Lecturer, Centre for Rural Health, IAHS
- Dr Stephen McCall- Assistant Professor, American University of Beirut
- Dr Mohannad Kafri- Assistant Professor, Birzeit University
- Dr Joao H Bettencourt-Silva, IBM
- Dr Andrew Hall- Honorary Research Fellow
- Dr Chun Shing Kwok - Honorary Research Fellow and Clinical Lecturer in Cardiology

Keele University

- Dr Emma Law- Honorary Research Associated (RINH) (NHS Tayside)
- Professor Hamid Baradaran- Honorary Visiting Professorial Fellow
- Dr Mouna Sawan- Honorary Research Fellow (University of Sydney)

Other staff and students currently working with us for ongoing research**UoA MBChB and Medical Science undergraduate students**

- Annes Ameidat, Katriona Hutchison, Phui Yuen Wong, , Jonathan Quinn, Andrew Wall, Ross Alexander Lilley, Kathrine Margaret-Greaves, Panyiotis Tanos

NHSG Academic Foundation Doctors

- Damjan Veljanski; Elidh Bruce; May Khei Hu; Sara Venturini; Genevieve Barlas; Subbramanian Palaniappan.

Administrator

- Mrs Morag McConnell



This report was prepared by Prof. Myint and Dr Soiza



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