

Academic Strategy for Nephrology in Sheffield 2018-2020

Sheffield Kidney Institute: Renal Services Directorate, Sheffield Teaching Hospitals NHS Foundation Trust; Academic Unit of Nephrology, University of Sheffield.

Executive Summary

Academic nephrology in Sheffield has a long and respected tradition expressed through research and educational activities at the Sheffield Kidney Institute (SKI) and the Academic Unit of Nephrology. Key research areas we have focused on include patient experience, polycystic kidney disease, renal bone disease and recruitment to portfolio clinical studies. In particular we have developed a strong interest in improving outcomes for people with kidney disease. A major theme is patient experience of dialysis with investigations into mechanisms to individualise therapy and barriers to patient centred and community therapy. We are currently leading two major national cohort studies in dialysis, developing an economic model of dialysis in partnership with SchARR and collaborating with the Academic Unit of Bone Metabolism to seek NIHR funding for new therapies in renal bone disease. We are also working closely with biotechnology companies to develop near patient testing and wearable dialysis systems.

Current Research Strengths

- Polycystic Kidney Disease/Renal Genetics
- Peritoneal Dialysis/Home Dialysis Therapies
- Research links with Metabolic Bone and SchARR
- Clinical trials – high recruitment rate, excellent research coordinator
- Good basic science laboratory infrastructure with International reputation

Current Research Infrastructure

Our Team

The academic research team is headed by Professor Albert Ong (academic head), supported by Professor Martin Wilkie (CRN Division 2 co-lead), Dr Arif Khwaja (CRN Renal Specialty lead and Clinical Research Lead) and Dr James Fotheringham NIHR Clinician Scientist.



The research team are supported by a renal nursing team within the NIHR Clinical Research Facility (CRF) based on the Northern General Hospital Site. We have strong engagement from consultant clinical colleagues, including nephrologists and renal failure surgeons, as Principal Investigators in NIHR portfolio adopted studies. Promising areas for development include ongoing collaborations with SchARR, Bone Metabolism and Cardiovascular Science within the Faculty of Medicine. We are focusing on home therapy research and research focused on patient engagement and education. This is led by Professor Wilkie who obtained a large Health Foundation grant to scale up Shared Haemodialysis Care (STH18999).

We have developed the renal research administrative team, providing assistance to the clinical teams and clinical research co-ordinator. The team includes an administrator and data co-ordinator; project co-ordinator for a large multicentre study (PDOPPS, STH18334), who also provides administrative support for Professor Wilkie with the Peritoneal Dialysis International; and we have recently appointed a South Yorkshire Regional Services (SYRS) Clinical Trials Assistant (CTA) to support studies that are active within the Renal, Cardiology and Vascular Directorates. The administrative team are working closely with colleagues within SYRS to form a unified SYRS Research Team. Throughout the term of this strategy we aim to ensure colleagues are able to provide cross-cover to account for any absences or losses to the team that may occur to allow continuous support to the clinical research teams.

We have had a number of extremely high-calibre academic nephrology trainees who have completed or are working towards higher degrees and have a proven track record of attracting competitive funding. They have made a significant impact on research activity at SKI and have the potential to transform the academic and research activities at SKI if they can be retained in Sheffield. These include:

- Dr Roslyn Simms (post PhD) – NIHR Clinical Lecturer (supervised by Prof Ong) who has completed research funded by an Academy of Medical Sciences project grant.
- Dr Syazrah Salam - Kidney Research UK Fellowship (supervised by Dr Khwaja and Professor Richard Eastell, Metabolic Bone). Currently writing up her PhD and has presented her data at national and international conferences and successfully published in high impact journals. She is currently applying for a NIHR EME grant.
- Dr Jiehan Chong – Currently awaiting an interview for a MRC Clinical Training Fellowship for research into polycystic kidney disease.
- We have appointed an Academic Clinical Fellow, due to start in September 2018.

Working Arrangements

Clinical Research

The clinical research programme is managed through monthly research executive meetings. This has been a successful initiative in maintaining research activity and identifying barriers to research. The terms of references of the executive are to strengthen the clinical research within the directorate by:

- Giving all renal patients the opportunity to participate in clinical research
- Ensuring a high standard of research governance
- Building on our reputation to deliver high quality research studies
- Strengthening our capacity to recruit participants to clinical research studies
- Securing reputable research grant income for innovative projects

Clinical study timelines and accrual is closely and actively managed in these meetings attended by the clinical research team, CRF representative (s), finance and Directorate Management.

Laboratory Research

Preclinical translational research is conducted in the Medical School and managed through monthly meetings of the Academic Nephrology Unit led by Professor Ong. Current research priorities are in the areas of molecular pathogenesis and treatment of ADPKD and kidney fibrosis although areas of

new development will be supported by recruitment of high calibre staff if aligned to research priorities.

Research Themes

- ADPKD and inherited Renal Diseases
- Dialysis outcomes research (Peritoneal and Haemodialysis)
- Complications of CKD including bone and cardiovascular disease
- Health economics in dialysis – linking with ScHARR
- Links with the UoS and STH cross cutting research themes including ScHARR, Clinical Trials, imaging, D4D and CLAHRC

Research Aims and Objectives

- Retain Academic Directorate Status
- Create a culture in which research is embedded into routine clinical activity with a strong basis in patient partnership
- Attract competitive research funding
- Increase high impact publication profile
- Ensure robust academic succession planning

Alignment with STH Research Objectives

We will continue to work with the STH research office to ensure that we are working to strengthen the organisational objectives for research development. We will support colleagues to apply to join the STH and ScHARR Sheffield Clinical Research Academy. We will work with our Clinical Director to invest PAs for research to individuals who are able to contribute most to the research programme based on track record and development opportunity.

Metrics by which our Performance will be assessed

We have identified appropriate measures that focus on our strengths and they are returned in our Annual Performance Review (2017-2018). Our primary metrics to assess progress are clinical research accrual and delivery (number of patients recruited to portfolio studies and the 70 day recruitment benchmark). We will also return grant income, high impact publications and trial finance as these are important to us but are more unpredictable given the small size of our Directorate. We will performance manage our activity against these metrics through the monthly clinical research executive meetings, and report as a key performance indicators to the monthly Directorate Management Team meeting and to the Clinical Research Office. Our clinical research co-ordinator will be responsible for completing and reporting our clinical research metrics.

Barriers to Achievement

1. Strengthening the Academic Team

Expand numbers of mid-level academics through supporting trainees to obtain competitive fellowships. In order to do this we are supporting them in applying for competitive external intermediate research fellowships. This will be supported by charitable and Directorate funding. In addition we will provide mentorship and support for entry-level researchers to encourage/support speciality doctors to apply for Academic Clinical Fellowships (ACFs), Research Training Fellowships and NIHR Clinical Lectureships.

If funding permits, employ a non-clinical lecturer/senior lecturer in laboratory science – preferably in the area of animal models to support research in ADPKD.

Employ an individual who can support grant writing supported by charitable funds.

Encourage non-medical staff to pursue research, if there is interest. This will be done by encouraging applications to the NIHR.

2. Increase Accrual to Clinical Studies

This is a key objective for the Directorate. Actions we have taken, and plan to take, include:

- Motivate our current clinical team, for example by incentivising clinical colleagues to participate in research activities – as highlighted by all our consultants being a PI on at least one NIHR study; we have incorporated time for research (i.e. PAs for doctors) as part of the annual job planning round allied to delivery of key targets within 2-3 years (including representation from the multidisciplinary team).
- Working with the research nursing team to continue to improve research effectiveness via the Clinical Research Facility in order to improve research effectiveness and increase nursing presence at key clinics.
- We are utilising the renal research administrative team to facilitate research within the directorate. The renal research administrator and CTA supporting the identification and recruitment of participants into studies, to help increase our key targets.
- Successfully ensured all speciality trainees are GCP trained and involved in at least 1 study per year as sub-PI as part of generic training in research.
- Secured funding from industry to fund an additional renal research nurse and admin activity.

3. Strengthen Clinical Research Infrastructure

To achieve this we will:

- Continue to provide administrative support for our clinical research co-ordinator.
- Support to grant writing – in the form of an individual of high aptitude who has experience in this area. We have appointed a renal fundraiser to support this activity.
- A new Renal IT system is being commissioned and we are working on ensuring it has the necessary functionality to support a vibrant clinical research programme.
- Continue to ensure that clinical staff who have a track record in research and attracting funding can be supported to develop clinical research further through flexibility in job planning.

4. Attract External Funding that Builds on Current and Potential Future Strengths

We will:

- Plan to continue to develop collaboration with UCB Pharmaceuticals and the University of Sheffield. We have developed a bio bank and are funding members of staff to facilitate enrolment into clinical trials.
- Build on existing NIHR and Charitable grant successes through ongoing collaboration with the Research Design Service.
- In conjunction with our collaborators (National and International) develop robust research proposals for key clinical trials.

5. Pump-prime the Development of Major Priorities

We will utilise Renal research funds held by Sheffield Hospitals Charitable Trust to support key posts. To develop this, we have recruited a dedicated Renal Fundraiser to focus on increasing funds available to us.

Additional funding sources include the Kidney Patient Charities – Sheffield Area Kidney Patient Association and small grants from British Renal Society and Kidney Research UK

Communication and publicity

We will increase our visibility and contacts locally, regionally, nationally and internationally through the following -

- Prominent National leadership – e.g. at NIHR CRN, CLAHRC, D4D and Renal Association level, work within International societies, International Society of Nephrology sister centres, lecturing Nationally and Internationally, key research collaborations and publications.
- Continue robust research collaborations – local (e.g. SchARR), National (e.g. University of North Staffordshire), International (e.g. Arbor Research – PDOPPS).
- Continue a robust output of high impact peer reviewed, scientific publications.
- Developing the considerable National and International ‘brand’ value of SKI as a centre of excellence for clinical training to further drive research activity. These include:
 - i) Building close collaboration with SchARR to develop a programme of research on patient centered outcomes for people with kidney disease this is being led by Dr James Fotheringham, NIHR Clinician Scientist.
 - ii) National educational study days in areas of expertise such as PD and ADPKD
 - iii) Continue to attract clinical researchers to SKI in PD based upon the reputation of Professor Wilkie as Editor in Chief of Peritoneal Dialysis International
 - iv) We have successfully developed and used a PPI group to support grant applications and continue to do so
 - v) Building close collaboration with the Academic Unit of Bone Metabolism to develop a portfolio of clinical research in renal bone disease
 - vi) Building upon a number of recent awards to SKI from the International Society of Nephrology to support visiting International clinical trainees

Future Directorate Aspirations

To establish the SKI as a premier centre of kidney research excellence in the UK.

Patient & Public Involvement

Increase the prominence of patient partnership in all aspects of our work – including in the outpatient clinic, as well as planning and delivery of clinical research. We will dedicate sufficient resources to this to ensure that patient partnership is explored and given priority. We have successfully appointed a Patient Research Ambassador, and review the effectiveness of the role continually. We continue to run an *ad hoc* clinical research panel to inform grant applications and ongoing research. World Kidney Day is an important event for the Kidney community nationally and internationally, and we will continue to hold events annually to increase awareness of Kidney Disease within our community and promote the research we are undertaking. The organisation of our event is managed by the renal fundraiser and research team.

Appendix 1 - SWOT Analysis for Academic Nephrology in Sheffield – Major Points

Strengths

- Polycystic kidney disease/Renal genetics
- Dialysis research
- Clinical trials – high recruitment rate, excellent research co-ordinator
- Good laboratory infrastructure
- Links with SchARR & CLAHRC
- Diversity of research interests

Weaknesses

- Split site for laboratory and clinical research and activity
- No agreed joint identity or research strategy between the university and NHS
- Low critical mass of senior researchers
- Lack of significant ongoing investment for new posts from NHS
- Recruitment very dependent on CRF staffing levels
- Lack of financial information impeding research funding

Opportunities

- Further NIHR and National charity grant applications
- Academically able junior clinical researchers – if they can be supported and retained
- Links with strong themes within the faculty – Bone, D4D
- Cross-faculty Interdisciplinary collaborate within university, particularly SchARR
- International links and regional networks

Threats

- Succession planning
- Lack of funded career track for younger trainees (ACF/ACL) alongside reduction in NTN
- Service pressures will make academic development secondary to service development
- Undersupply of trainees nationally
- Ability to continue clinical trial research is fragile and highly dependent CRF staffing support