

## Starting out in paediatric neurodisability research

Specialist Training Authority (STA) recognition of paediatric neurodisability as a subspecialty of paediatrics in 2003 forged a dedicated route that combines training in neurodevelopmental paediatrics, neurology and child and adolescent psychiatry. Opportunities to gain additional experience in allied subspecialties and professions such as clinical genetics and clinical psychology exist. Sub-specialty development provides a new platform for interdisciplinary research which will advance a deeper understanding of neurodevelopmental conditions. Research interested neurodisability trainees are ideally poised to understand and appreciate multidisciplinary translational approaches from basic genetic, neuroscience, behavioural and cognitive areas applied to clinical research.

## Routes into academic paediatric neurodisability

Major changes to postgraduate medical training implemented through Modernising Medical Careers (MMC) provided new routes into clinical academic medicine. There are several entry points into the integrated clinical academic career pathway (Figure 1).

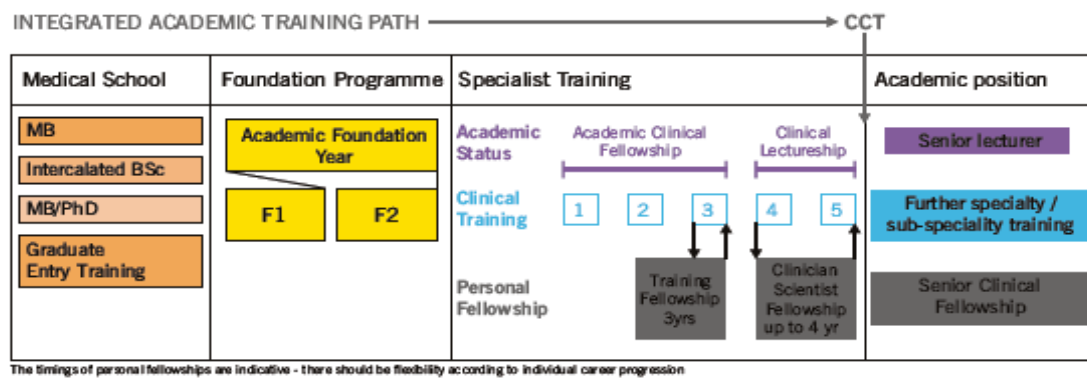


Figure 1: Integrated academic training path for researchers. Reproduced from the Report of the Academic Careers Sub-Committee of the Modernising Medical Careers and the UK Clinical Research Collaboration(2005)<sup>1</sup>.

### Entry during Foundation Programmes

Two separate programmes exist for F2 trainees depending on whether they wish to commit to a clinical academic career pathway or simply explore a potential interest in a research career. Trainees participating in these schemes must obtain the required F2 clinical and generic competencies within the time-frame of the foundation programme.

### Integrated academic F2 programme for trainees wanting to pursue an academic career

The integrated academic F2 programme consists of a year that has an underlying academic theme with academic activity throughout the year. Post structure may vary between institutions but is likely to include

allocation of an academic mentor, attendance at academic departmental meetings, project work and taught components. The year may include a protected four month period of academic work. It is anticipated that trainees will progress through a defined academic pathway following completion of the integrated academic F2 programme.

### **Stand-alone four month F2 academic rotations**

These posts are designed to allow trainees to explore their potential research interest without embarking on an integrated academic pathway. Trainees will have the opportunity to obtain both clinical and academic experience in their chosen specialty during this four month period.

### ***Entry during Specialist Training***

Following on from F2 training, dedicated academic training posts provide a clear pathway for academic career progression. This consists of two phases; posts are advertised nationally:

### **Academic Clinical Fellowship (ACF) period**

These posts last for up to three years. Year one consists of general clinical training as for standard clinical trainees. The second year will normally be in a teaching hospital and will comprise dedicated academic sessions alongside clinical training. This will allow trainees to prepare an application for a competitive research training fellowship e.g. Medical Research Council (MRC), Wellcome Trust or other research funders. Once a training fellowship has been secured the trainee will work towards a higher degree, which will usually be for a three year period.

### **Academic Clinical Lectureship (ACL) period**

Completion of a higher degree and attainment of appropriate clinical competencies will qualify academic trainees to enter a clinical lecturer post. These posts allow completion of clinical training in combination with the development of postdoctoral research career development. This may be supported by a Clinician Scientist Fellowship scheme or other postdoctoral support. Equal time will be spent in research and clinical training and service. Clinical lecturers usually have undergraduate teaching commitments.

Current neurodisability grid trainees who are well into the 'old SpR system' cannot qualify for ACF posts, and are most likely to enter an academic pathway by securing a clinical research training fellowship, or through project grant funding; SpRs apply for time out of programme for research (OOPR) granted by their deanery. Trainees completing a higher degree will be eligible to apply for ACL posts, for an interim period, until the first cohorts of trainees have completed the ACF phase of the dedicated programmes. SpRs with higher degrees, or those who have already completed a period of research are likely to be in a good position to obtain an ACL post; interested applicants are most likely to be successful when a Senior Lecturer or Professor in their department shares the applicant's research interest, therefore early informal approaches to clinical academics are appropriate.

Paediatric neurodisability trainees may wish to obtain research skills without undertaking a higher degree or committing to an academic career pathway. This will be beneficial in providing a greater understanding of

scientific methodology and disease mechanisms which will improve the ability to critically evaluate the evidence informing clinical practice. Funding is sometimes available through established clinical academics, who may have 1-2 years funding via project or programme grants. The Sheffield Hallam postgraduate diploma in paediatric neurodisability is currently undergoing revalidation for MSc status. This may include a research skills module, audit and dissertation which will allow trainees to acquire research and subspecialty skills without the need to undertake an extended period out of clinical training in research.

### ***Entry at consultant level***

#### **Seeking a consultant post with academic sessions**

Despite enjoying a period of research or a research degree, a minority of trainees go on to become clinical academics; this limits the number of senior clinical academics in the field and is a major barrier to developing research capacity. Following completion of appropriate clinical and academic training academic trainees will look for a Clinical Senior Lecturer (CSL) post in an appropriately supportive academic department; most Universities will expect the candidate to have a higher degree (MD or PhD). Some CSL posts are funded through partnerships between NHS Foundation Trusts and Universities; other posts are funded either in part or in full through competitive Research Fellowships (for example HEFCE Clinical Senior Lectureships, or NIHR/MRC/Wellcome Intermediate or Senior Clinical Fellowships). Some Clinician Scientist awards bridge from trainee to consultant level.

#### **Existing clinical consultants who wish to undertake research, or become clinical academics**

Historically, clinical NHS consultants have not had protected research time and have therefore undertaken research as part of usual clinical practice; undertaking a research project in either clinical or CPD time is challenging. However, in recent years, translational funding streams (such as the National Institute for Health Research - NIHR) have provided funding to clinicians to apply for funds to 'buy back' clinical sessions from the NHS Trust (ensuring another clinician is paid to do the clinical work, releasing the applicant to undertake research). Such NIHR funding is available through project based grants, but also through so called 'Flexibility and Sustainability' funding (this funding goes by different names in different NHS Trusts). This money is available to Trusts from NIHR and is allocated on a competitive basis to clinicians with a research idea which requires development. By either 'buying back' clinical time, or employing another member of the Multidisciplinary Team for half or one day per week, NHS trusts 'pump prime' projects with the aim of gathering pilot/feasibility data, which might in the future allow the consultant to make a successful application to fund a full project. For full applications, external funding bodies increasingly require some pilot/feasibility data to show that a project (particularly one carried out through a clinical service) is likely to be completed as described. Clinical consultants who develop a track record in carrying out high quality research may then have the opportunity to obtain regular funding for research sessions through either a Trust or University, and may wish to become Clinical Senior Lecturers.

### **Identification of a project, supervisor and research institution**

Identification of a suitable project, appropriate supervisor and research institution can be a daunting process for trainees wishing to enter academic paediatric neurodisability, or consultants wishing to undertake a research project. The combination of an appropriately skilled individual, a feasible project, carried out by a

team with a proven track record in that research field in an appropriate research environment is critical to the success of a project grant application, or clinical research training fellowship applications to any funding body.

The British Academy of Childhood Disability Strategic Research Committee (BACD SRG) comprises senior clinical academics and academic trainees all of whom are actively involved neurodisability research in the UK and are familiar with the process involved in applications to major funding bodies. Members of the group can provide advice to research interested trainees on the broad suitability of their project and put trainees in touch with appropriate academics within institutions with neurodisability research capacity. For those without clinical research experience we strongly recommend identifying a local or national clinical academic who can advise on how to start off when thinking about undertaking a research project, or a period of research. BACD offers a consultation service to give clinicians (doctors, and any member of the multidisciplinary team) advice about how to get started in research. Further information is available at:

[www.bacdis.org.uk/research/ConsultationService.htm](http://www.bacdis.org.uk/research/ConsultationService.htm)

In addition, the Royal College of Paediatrics and Child Health (RCPCH) has created a national network of Academic Regional Advisors who can provide guidance and support to academic trainees or those interested in considering a career in academic paediatrics.

## **Assessment of progress and competency in academic training**

For trainees, The Gold Guide identifies three key elements which will support trainees through the new postgraduate training structure: appraisal, assessment and annual planning. These three components form the basis of the Annual Review of Competence Progression (ARCP) which replaces the old-style Record of In-Training Assessment (RITA). The Academy of Medical Sciences, in collaboration with Postgraduate Deans, MMC and the National Co-ordinating Centre for Research Capacity Development (NCCRCDD), have produced guidelines for the monitoring of academic training and progress. These are primarily intended for use by ACFs and ACLs but are equally applicable to any trainee undertaking OOPR. The guidelines clearly set out criteria for the assessment of academic progress, expected academic skills and competencies to be achieved by academic trainees and guidance on recording academic progress in preparation for assessment. The guidelines are available at <http://www.academicmedicine.ac.uk/careersacademicmedicine.aspx>.

Many clinical research training fellowships allow the trainee to undertake a small amount of clinical work during the time of their fellowship. For neurodisability trainees this may provide a valuable opportunity to gain additional experience in allied disciplines such as child and adolescent psychiatry, clinical genetics or paediatric neuroradiology, or to further develop a sub-specialty interest by attending appropriate tertiary clinics. It is essential that all such activities are appropriately recorded and prospectively discussed with the appropriate CSAC chair so that such experiences can be appropriately accredited.

Consultants undertaking research receive feedback at annual Appraisal meetings. Clinical academics are likely to have their progress assessed against criteria, important to their University in obtaining government funding, which are determined by the "Research Excellence Framework" (for example amount of grant funding achieved, and number of publications in peer reviewed journals).

## **Managing the transition period when starting research**

Undertaking a period of research is very different from carrying out duties relating to clinical paediatrics. For some junior academics entry into the higher degree phase of their training may herald a period spent amongst non-clinician colleagues (for example teams of scientists in laboratories, or research psychologists); it is unlikely that a junior academic will have been in this position previously. This period can be unsettling, as new colleagues may speak the (initially) less familiar language of basic science and research principles, and the clinician may be unfamiliar with the tasks required of them. Thus overnight, clinicians move from a the highly structured, fast moving world of clinical paediatrics, in which they are an expert, to a different environment where previously acquired skills may not be needed. This is less likely to be a problem with the new integrated academic pathway where academic and clinical training occur in tandem, but may be a significant factor for old style trainees entering research later in their clinical careers. It is vital that academic trainees maintain their clinical skills through regular clinics, and peer group attendance at local and national meetings and training events. This ensures clinical skills and CPD are maintained, and ongoing links with their professional peers are continued. Regular discussions with a clinical supervisor are vital, as is access to a clinical mentor with whom these issues can be discussed.

## **Summary**

Integrated academic and clinical career pathways have streamlined clinical academic training and removed some of the traditional barriers to potential academic trainees. The formation of additional senior lecturer posts will improve capacity at senior academic level. Paediatric neurodisability trainees have skills in paediatric neurodevelopment, neurology and child and adolescent psychiatry placing them in a strong position to understand and appreciate multidisciplinary translational approaches from basic genetic, neuroscience, behavioural and cognitive areas applied to clinical research. NIHR funding available through NHS Trusts provides an opportunity for clinical consultants to develop clinical research through their services. It is vital that academic paediatric neurodisability capacity is increased in order to address the many outstanding issues facing children and families living with neurodisability.

## **References**

1. *Report of the Academic Careers Sub-Committee of the Modernising Medical Careers and the UK Clinical Research Collaboration (2005)*. [http://www.ukcrc.org/PDF/Medically\\_and\\_Dentally-qualified\\_Academic\\_Staff\\_Report.pdf](http://www.ukcrc.org/PDF/Medically_and_Dentally-qualified_Academic_Staff_Report.pdf)