Training in Research for the Benefit of Children

RCPCH

Royal College of
Paediatrics and Child Health

Leading the way in Children's Health

Training in Research for the Benefit of Children

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The Royal College of Paediatrics and Child Health(RCPCH) is a registered charity in England and Wales (1057744) and in Scotland (SC038299)

Abbreviations

ACF	Academic Clinical Fellowship
ACL	Academic Clinical Lectureship
ARCP	Annual Review of Competence Progression
CCT	Certificate of Completion of Training
LETB	Local Education and Training Board
LTFT	Less Than Full Time
NIHR	National Institute for Health Research
NTN	National training number
OOPR	Out of Programme for Research
RCPCH	Royal College of Paediatrics and Child Health
WCAT	Wales Clinical Academic Track

Foreword

Medicine is both art and science and the phrase 'evidence-based medicine', that is so central to health care today, is explicit acknowledgement of the latter. Research is the means to generate evidence so it is essential that all doctors acquire knowledge and experience that will enable them to recognise and support high quality research, and in due course, provide advice to trainees who wish to develop their research skills. All paediatricians have a part to play in research to benefit infants, children and young people and their health services, and their training must reflect these needs.

The RCPCH Trainees' Curriculum sets out the research competences required of all paediatricians. However, some doctors will aim to develop, or lead, research as consultant paediatricians or as appointees to academic positions. The RCPCH Academic Training Committee has, therefore, prepared this guide to assist trainees who wish to advance their involvement in research. The Guide provides information about the many opportunities available today, and sources of additional information. Medical research training is an area that is set to develop and expand and I would encourage the provision of revisions and updates in future years.

I congratulate the Academic Training Committee for having put together such an excellent resource and recommend this Guide to all paediatric trainees.

Neena Modi
Professor of Neonatal Medicine
Imperial College London

Science and Research Vice President
Royal College of Paediatrics and Child Health

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Contents

The inception of this guide was ‘for trainees, by trainees’. We hope that it is useful and informative. However, whilst we made every effort to ensure that it’s contents were accurate at the time of writing, training programmes change regularly and we apologise if there are any inaccuracies.

1. Introduction

Training in research for the benefit of children

All trainees have to attain research competencies. In addition, those who train in research are afforded unique opportunities to develop academic skills and undertake original research and, for some, develop an academic career. All of this can be achieved whilst maintaining and excelling in clinical training and gaining full accreditation as a paediatrician. This guide contains information for:

a) Trainees considering applying for a clinical academic training post

Are you an enthusiastic, able paediatrician-in-the-making? Would you like to contribute to an understanding of how we should practise? Would you like to learn academic skills, complementing those provided by your clinical training? Would you like to develop your career at the cutting edge of clinical or laboratory research? If so, this Guide provides some information on clinical academic training and how to get involved.

b) Trainees already part of the clinical academic training pathway

Academic training provides exciting opportunities which complement those provided by clinical training. This Guide provides information on administrative, research and clinical issues for clinical academic trainees and hints on getting the most out of academic time, primarily for those starting out in academic training.

c) Trainees who want to undertake research outwith the clinical academic training pathway

The clinical academic training pathway is not the only way to undertake research or the only route to an academic career. This Guide gives some information for trainees wishing to gain research experience and develop academic careers as part of the clinical career pathway by taking time out of programme for research (OOPR).

d) Trainers (Educational, Clinical and Academic Supervisors)

Clinical academic trainees need Clinical Educational Supervisors with additional, complementary skills. Knowledge of the structures for research training will assist trainees in both benefitting fully from their research experiences and ensuring that their clinical training runs smoothly.

The temptation with the current career structure is to get on your track and continue to the end. If you have an interest in research, then I would suggest looking sideways at other opportunities.

Dr Daniel Hawcutt
Academic Clinical Lecturer in Paediatric Clinical Pharmacology

2. Opportunities for training in research for the benefit of children

2.1 General competencies in research for all paediatric trainees

All trainees have to attain the research competencies in Assessment Standard 25 of the RCPCH trainees' curriculum which forms a firm basis of those aspects of research for the benefit of children, and appraisal of published evidence for patient management, needed by all paediatricians.

Opportunities to undertake research are available in many different forms, and at all stages within training, although it is usually not possible to foresee which exact practical research opportunities will be available. There are many types of research and different approaches suit individual trainees (Table 1). Some of the routes to undertake research and acquire academic competencies are given in this Chapter.

Table 1: Examples of types of research opportunities

Laboratory based projects: basic and translational science
Laboratory based projects: based on patient samples
Translational research: 'bench to bedside'
Clinical Research: eg randomised controlled trials of treatments
Epidemiological research: eg disease surveillance, data linkage utilising existing databases
Other observational studies

2.2 Research experience in clinical training programmes

Clinical trainees may wish to enhance further their academic and research skills, develop a more detailed understanding of the research process and of the applications of research to clinical paediatrics. Research experience can improve knowledge of the evidence base of clinical practice, encouraging critical appraisal of current practice. Thus, many trainees become involved in research at some stage, even if they do not wish to go on to undertake full or part-time academic careers. Of course, whilst these research opportunities are extremely worthwhile, undertaking a personal research project may not appeal to everyone. Trainees in paediatrics often seek opportunities to participate in research from within clinical posts, undertaking research projects with local supervisors and recruiting patients to multi-centre randomised controlled clinical studies. Involvement in research can be rewarding and contributing to understanding of a disease or how to treat it can be invaluable to both children and trainee paediatricians. Undertaking some research whilst continuing clinical training is definitely possible and should be encouraged but trainees

should be realistic about what they can achieve whilst undertaking a full time clinical post. Further information for trainees about research opportunities is given in Chapter 4.

Being able to contribute towards the understanding of a disease using cutting-edge technology, and being involved in both the clinical and the laboratory side of the study, has been so exciting and fulfilling.

Dr Kathleen Sim
Doctoral Research Fellow

2.3 The integrated academic clinical training pathway in paediatrics

2.3.1 What is the Integrated Clinical Academic Training Pathway for medical graduates?

Over recent years there has been an increased focus on the integration of academic and clinical training, particularly with the advent of the Modernising Medical Careers framework. The 'Walport Report' was published in 2005 by a sub-committee of the UK Clinical Research Collaboration (UKCRC) and the NHS Modernising Medical Careers (MMC). This report recommended initiatives to integrate the development of academic and clinical skills, starting at medical school, continuing throughout the career pathway of a trainee doctor, intended to culminate in a career as a senior academic clinician.

The National Institute for Health Research (NIHR) has developed an Integrated Academic Training Pathway for speciality trainees which consists of dedicated academic training programmes in host academic institutions, usually Universities, in partnership with local NHS organisations and Trusts. These Integrated Clinical Academic Training Programmes offer, at each stage of training, a percentage of protected time within the post or rotation for academic training. The key difference from other academic training schemes is that these are integrated with clinical training, facilitating parallel academic and clinical training.

Each of the four nations in the United Kingdom has developed their own integrated clinical academic programmes. Further information specific to England, Wales, Scotland and Northern Ireland is available on their individual websites.

2.3.2 What can Academic Clinical Fellows and Lecturers expect to achieve?

The ultimate aim of the integrated clinical academic training pathway is to provide structured training for doctors who have the potential to become leaders in clinical research and education. Clinical academic trainees undertake research and, at each stage of their training, can expect to achieve research skills and academic competencies laid out in the Academy of Medical Sciences supplementary guidance in addition to the clinical competencies laid out in the trainee paediatricians' curriculum.

If your Medical School does not require it, I cannot recommend intercalation highly enough to see if research really might be for you. I honestly believe the process of scientific rigour it started to teach me has made me a better paediatrician too.

Dr Daniel Hawcutt
Academic Clinical Lecturer

2.3.3 When can the clinical academic training pathway be entered?

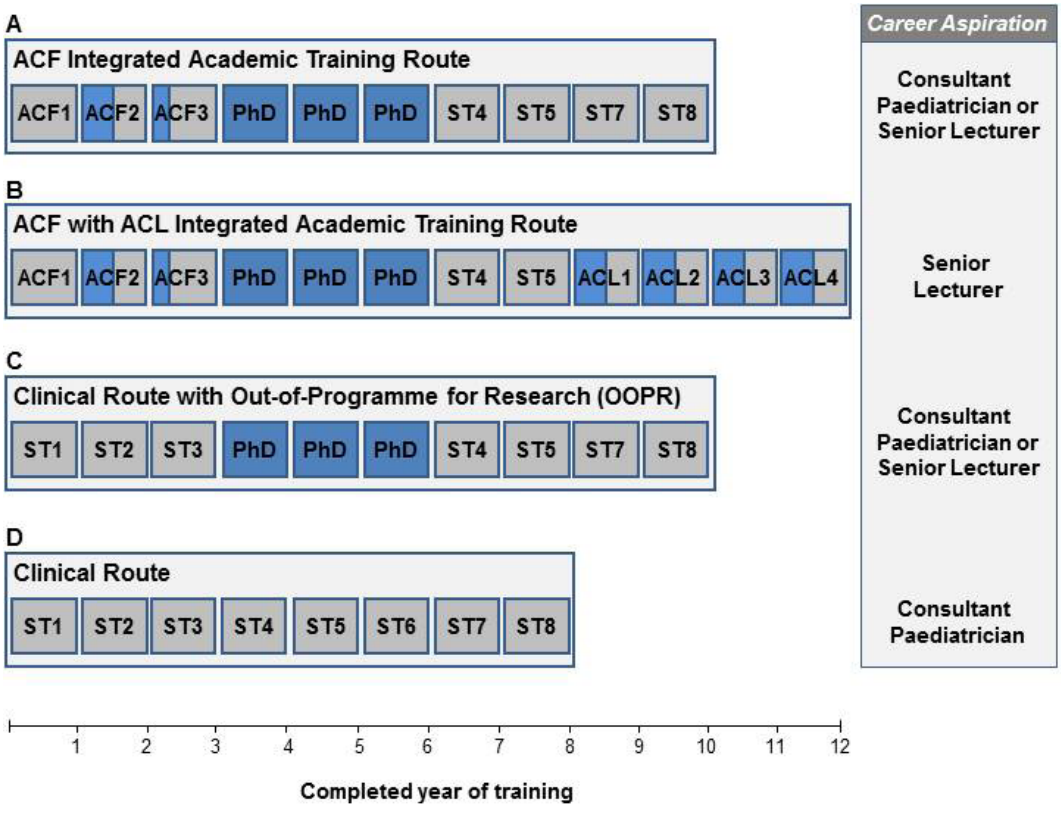
The pathway allows entry at several levels. Figure 1 shows current academic career pathways.

Trainees can join the integrated clinical academic training programme:

- as an Academic Clinical Fellow at entry into run through training at ST1 and, sometimes, when posts are advertised for entry at later stages of training (ST2-4)
- as a senior trainee in the final speciality training years and after completing a PhD/ research MD as an Academic Clinical Lecturer

RCPCH Academic Regional Representatives, Directors of Integrated Clinical Academic Training Programme in Universities and leads for recruitment in host Local Education and Training Boards (LETBs) can provide advice on the level of ACF posts to be advertised by their LETB and when ACL posts are due to be advertised.

Figure 1: Integrated Academic Clinical Training Pathway in Paediatrics[1]



2.3.4 Can maternity leave be taken and can clinical academic training be undertaken less than full time?

Yes. Maternity leave is governed by the same terms and conditions of service in the contract of employment which is with the NHS (for Academic Clinical Fellows) and with the host institution/ University (for Academic Clinical Lecturers). However, it is worth seeking advice from the potential employer's Human Resources department or University Director of Integrated Clinical Academic Training if you are changing from the NHS to a University employer (for example, when taking up an ACL), as maternity leave in the first year after the change may attract only minimal (statutory) rights. As with any employment, trainees have the right to return to the NIHR ACF or ACL on the same terms and conditions after maternity leave.

Less than full time (LTFT) Trainees are welcome in integrated clinical academic training and NIHR funded Integrated Clinical Academic Training Programmes which host ACFs and ACLs are expected to adhere by the principles of equality and to the Athena Swan Charter. The principles which govern this are available within the Gold Guide to Postgraduate Training available from the MMC website.

The General Medical Council which oversees all medically qualified doctors has issued in a position statement its requirements for the arrangements for LTFT Trainees. The principles are that there is a minimum percentage of full-time equivalent time which LTFT Trainees should work to train effectively. Of course, it is important to remember that paediatric training is a competency, rather than time, based system and it is demonstration of competencies which determine the length of training.

The NIHR funds ACF posts in paediatrics for a maximum of five years as long as the academic component remains at 25% of full time equivalent and it funds ACLs for a maximum of six years. Trainees who wish to train less than full time should seek advice from their RCPCH Academic Regional Representative and the Programme Lead for Integrated Academic Training Programmes so that the best balance is obtained. For example, as ACL posts contain 50% clinical and 50% academic training, LTFT Trainees can achieve equivalent opportunities in an ACL post by working as 0.66 WTE (0.33 clinical: 0.33 academic over six years making 48 months of WTE ACL training).

Although there never are enough hours in the day, particularly not with a young family, being able to both care for patients and contribute to better and less toxic treatment strategies is extremely rewarding and the best job I can imagine.

Dr Karin Straathof
Academic Clinical Lecturer

2.4 Academic Clinical Fellowships in England

2.4.1 What is the Academic Clinical Fellowship (ACF)?

The ACF is part of the Integrated Academic Clinical Training Pathway in Paediatrics and provides the opportunity for those planning a clinical academic career to gain research experience whilst continuing clinical training. Over the three years of the ACF, 25% of training time is devoted to academic training. This is either taken as time each week or in blocks of time (e.g. three or six month blocks) interspersed between clinical training posts.

Academic Clinical Fellows progress through their specialty training years in the same manner as specialty trainees on standard competency based clinical training programmes. All undertake training in research methodology and academic skills. As this is funded by the NIHR direct to the host institution (usually a University), no extra funding is needed for this part of ACF training. All ACFs also provide the opportunity to undertake academic training as part of an MSc or MPhil, although it is not mandatory to undertake a Master's degree.

'The ultimate aim of the three-year ACF programme is to secure funding to undertake a PhD/ research MD'

Academic Clinical Fellows gain experience of conducting research by working within an academic department developing a research project intended to lead to a proposal submitted to an external funding body for a research training (doctoral) fellowship.

When Academic Clinical Fellows are successful in obtaining funding for their PhD/ research MD, they take time 'out-of-programme for research' (chapter 4).

Choosing to do a PhD is a relatively major life/career decision but, with careful planning, it is achievable and a potentially very positive experience both personally and professionally.

Dr Alasdair Bamford
Research Training Fellow

2.4.2 Which sub-specialties in paediatrics have ACF posts?

Some host Universities and their LETBs identify ACFs within particular sub-specialties within paediatrics (e.g. Neonatal Medicine), whilst others advertise posts in paediatrics which can be undertaken in any research area within paediatrics which is supported in that University. Applicants are welcome to contact the local RCPCH Academic Regional Representative well ahead of the application deadline, to establish which relevant posts may be available. The Head of the local University Paediatrics Department, the University's

Director of Integrated Clinical Academic Training Programme and the host LETB should also be aware of their local posts.

2.4.3 How many ACFs in paediatrics are there?

This varies from year to year, and between LETBs. Information is available from the NIHR Trainees Centre, local LETBs and University Directors of Integrated Clinical Academic Training Programmes.

2.4.4 What happens at the end of the three year Academic Clinical Fellowship?

In their final years of training before Certificate of Completed Training (CCT), and after completing a PhD/ research MD, trainees are eligible to apply for an Academic Clinical Lectureship. Academic Clinical Fellows who entered training at ST1 may have to return to the clinical training programme and should discuss how to maintain their research interests with their Academic (Research) Supervisor and the local Academic Programme Director/ Lead for Academic Training in Paediatrics in the host University. Trainees who have gained a PhD in MD/PhD programmes and those who have achieved a PhD through time OOPR at other periods of training are also eligible to apply for an Academic Clinical Lectureship.

2.4.5 What if an Academic Clinical Fellow does not achieve funding for a PhD by the end of the third year of their ACF?

Although Academic Clinical Fellows enter the ACF programme with the intention of securing funding to undertake a PhD or research MD, funding for such doctoral fellowships is competitive and is not guaranteed. If at the end of the three year ACF, the Fellow has not achieved their doctoral fellowship funding, they join the clinical programme at their training level (i.e. with their peer group providing clinical competencies have been achieved as expected). Even when this happens, the trainee can still apply for time out-of-programme-for-research (OOPR) if their research funding is awarded later in the clinical training programme. It is very important to keep the Clinical Training Programme Director for Paediatrics in the host LETB informed of funding applications as many programmes request three to six months' notice to agree OOPR requests.

2.4.6 What if an Academic Clinical Fellow changes their mind about training for a clinical academic career?

Academic Clinical Fellows enter the ACF programme with the intention of achieving research and academic competencies towards a clinical academic career. Academic trainees who complete the clinical academic training programme are eligible for both senior clinical academic and NHS clinical consultant posts (Figure 1 – page 10).

However, during the training years, life-events can sometimes lead to a change in career direction and some trainees may decide after completing an ACF that a career as a

clinical academic paediatrician is not for them. Academic Clinical Fellows and Lecturers are appointed as run-through trainees to the academic programme (see NIHR Exit and Entry Points) so it is possible to leave the academic programme and return to full time clinical training.

Integrated Clinical Academic Programmes can assist with careers advice and trainees should discuss with their local Programme Director and RCPCH Academic Regional Representative. If the Academic Clinical Fellow moves into the clinical training programme, this would usually be in their host LETB.

2.4.7 What are the eligibility criteria and what is the application process?

Applicants need to fulfil the eligibility criteria for the appropriate entry level in paediatrics available from the RCPCH. Successful applicants will fulfil all the essential criteria on the application form available from the NIHR Trainees Centre.

Some trainees will have completed an integrated, or intercalated, BMedSci or BSc as part of their time at medical school, but many will not. Some trainees will have completed the Academic Foundation Programme prior to entry, others will have clinical Foundation Programme experience in paediatrics, but many will not. Foundation Programme experience in academic medicine or paediatrics are not requirements.
Those thinking about a career in academic paediatrics should try to get involved with research opportunities as early as possible. Becoming involved with ongoing research projects in local hospitals or Universities is a great way to get a taste of what a career in research might entail and to demonstrate academic interest. As ACFs are competitive, and some applicants will have a research background, it is important to emphasise any prior research experience in application.

ACFs are advertised nationally, usually in the British Medical Journal, NHS and academic recruitment websites and on LETB websites. The NIHR determines when posts are advertised and, at the time this Guide was written, this was in the Autumn each year so that applicants were aware of whether they were successful in getting an ACF before the clinical training interviews. However, the timetable can change and the NIHR Trainees' ACF website has information about the ACF applications process each year.

Applicants for ACFs need an academic referee who can attest to academic potential, in addition to clinical referees. Advice on academic referees is available from the NIHR.

2.4.8 How to prepare for the ACF interview

The research opportunities which are available to Academic Clinical Fellows will depend on the host University.

Many ACFs are offered a choice of academic supervisors and research projects. Not all academic Supervisors are clinicians as non-clinical scientists also supervise excellent

research of translational benefit to children. It is important to approach Supervisors well in advance of the application deadline to find out more about their areas of interest and discuss potential research projects. Some ACFs are offered an allocated Supervisor who will usually accommodate input into the choice of research project, although some ACFs are offered an allocated supervisor and research project. It's worth finding this out before deciding where to apply as there are advantages to every model.

As ACFs are run through speciality training posts, the interview will have both clinical and academic components. The clinical part of the interview should map to the RCPCH interview for entry into specialist clinical training and will seek to establish suitability to a career in paediatrics. This is most commonly conducted as an interview cycle through short interview stations. Guidance on clinical interviews in paediatrics is available from the RCPCH. The academic part of the interview will seek to establish academic potential. Applicants may be asked to provide a paper portfolio or a printed copy of their e-portfolio and copies of any publications and degree certificates. LETB Administrators can provide information on the ACF interview process but trainees may also contact the local Academic Lead in Paediatrics (who will usually be named in the job description or advert) or the RCPCH Academic Regional Representative for advice on local opportunities and how to prepare.

2.4.9 Useful contacts during ACF applications

The Royal College of Paediatrics and Child Health, NIHR Trainees Coordinating Centre, Modernising Medical Careers websites provide useful information.

The RCPCH has Academic Regional Representatives in each area who can advise on local opportunities and more broadly on how to approach training in research for the benefit of children. Each University which hosts ACF and ACL posts will have a Director of Integrated Clinical Academic Training who will co-ordinate the training programme and recruitment to posts. University Paediatric Departments which host ACFs and ACLs usually have a coordinator or Paediatric 'Academic Programme Director'. In addition, LETBs will have administrators for paediatrics, contact details for whom appear on LETB websites and on the NIHR Trainees website. Applicants may also want to contact previous or current ACFs where they are considering working. Again, this can be done through University Directors of Integrated Clinical Academic Training, Paediatric Academic Programme Directors, Academic Regional Representatives or by contacting LETBs directly.

2.5 Academic Clinical Lectureships in England

2.5.1 What is the Academic Clinical Lectureship (ACL)?

The ACL is part of the Integrated Academic Clinical Training Pathway in paediatrics and is awarded to post-doctoral trainees (i.e. those who have been awarded their PhD or research MD) to allow them to develop into independent researchers with a clinical academic career. Academic Clinical Lecturers aim towards applying for Clinician Scientist posts or University Senior Lectureships combining clinical and academic roles. ACLs are

for senior trainees, coming towards CCT but are not usually awarded in the final year before CCT.

For these senior trainees, Academic Clinical Lectureships provide 50% of training time devoted to academic training. As half of the Lectureship is spent undertaking research and academic training and half is spent achieving clinical competencies, training time is often lengthened and they are held for a maximum of four years.

'The ultimate aim of the four-year ACL programme is for development of independent research towards a career as a senior clinical academic'

Academic time is either taken as days each week or in blocks of time (e.g. three or six month blocks) and this is planned with the local Paediatric Academic Training Programme and Clinical Training Programme Directors to maximise academic and clinical training opportunities. ACL posts end at the award of a CCT.

RCPCH Academic Regional Representatives and LETB leads for integrated clinical academic programme recruitment can advise on when ACLs are due to be advertised.

In my experience, the lows were lower, but the highs were higher, than in clinical medicine and I loved research enough to then do an ACL post.

Dr Andrew Prendergast
Sparks Young Investigator of 2011

2.5.2 Which sub-specialties in paediatrics have ACLs?

Most ACLs are advertised in paediatrics rather than a fixed sub-speciality and can, therefore, be tailored to both the needs of the trainee appointed and the clinical training and research opportunities available locally. Applicants are welcome to contact the local RCPCH Academic Regional Representative ahead of post advertisement, to establish which relevant posts may be available. The Head of the local University Paediatrics Department, the University's Director of Integrated Clinical Academic Training Programme and the host LETB should also be able to advise on their posts and when they are likely to be advertised.

2.5.3 How many posts are there in paediatrics?

This varies from year to year, and between LETBs. Information is available from the NIHR Trainees Centre, LETBs and University Directors of Integrated Clinical Academic Training Programmes.

2.5.4 When does the Academic Clinical Lectureship end?

ACLs are awarded for up to four years (full-time; up to six years if training less than full time) but end at the award of a CCT if this is sooner.

2.5.5 What are the eligibility criteria and what is the application process?

All trainees will have completed a PhD or research MD.

Applicants need to fulfil the eligibility criteria for the appropriate entry level in paediatrics available from the RCPCH. Successful applicants will fulfil all the essential criteria on the application form available from the NIHR Trainees Centre. ACLs are advertised by host Universities nationally, usually in the British Medical Journal, NHS and academic recruitment websites but the timetable for adverts is not fixed. The NIHR Trainees' ACL website gives information about which ACLs are available each year and trainees who are interested in applying should liaise with the local RCPCH Academic Regional Representative and local University Director of Integrated Clinical Academic Training Programme.

Applicants for ACLs need an academic referee who can attest to their academic potential, in addition to their clinical referees. Advice on academic referees is available from the NIHR.

2.5.6 How to prepare for the ACL interview

The research opportunities which are available to Academic Clinical Lecturers will depend on the host University as well as on the research interests of the applicant. Therefore, it is important to explore local academic and research opportunities before the interview.
As ACLs are integrated clinical training posts and end at CCT, the interview will have both clinical and academic components relevant to their speciality level. Guidance on clinical interviews in paediatrics is available from the RCPCH. The academic part of the interview will seek to establish potential for an ongoing career as an academic paediatrician. Applicants may be asked to provide a paper portfolio or a printed copy of their e-portfolio, degree certificates and copies of publications. LETB administrators can provide information on the ACL interview process but trainees may also contact the local Academic Lead in Paediatrics (who will usually be named in the job description or advert) and the RCPCH Academic Regional Representative for advice on local opportunities and how to prepare.

2.5.7 Useful contacts during the ACL application process

The Royal College of Paediatrics and Child Health, NIHR Trainees Coordinating Centre Modernising Medical Careers websites provide useful information. The RCPCH has Academic Regional Representatives in each area who will be able to advise on local opportunities and more broadly on how to approach training in research for the benefit of children. Each University which hosts ACLs will have a Director of Integrated Clinical

Academic Training who will co-ordinate the training programme and recruitment to posts. University Paediatric Departments which host ACLs usually have a coordinator or Paediatric 'Academic Programme Director'. In addition, LETBs will have administrators for paediatrics, contact details for whom appear on LETB websites and on the NIHR Trainees website. Applicants may also want to contact previous or current ACLs where they are considering working. Again, this can be done through University Directors of Integrated Clinical Academic Training, Paediatric Academic Programme Directors or by contacting LETBs directly.

2.6 The Wales Clinical Academic Track (WCAT) Lectureship scheme

In Wales, there is the The Wales Clinical Academic Track (WCAT) scheme for trainees who wish to develop an academic career. In the WCAT scheme, there is a single Lectureship incorporating research (pre-PhD and postdoctoral research) and clinical training. Typically applicants enter at ST1 already in possession of a National Training Number (NTN) in paediatrics, although the scheme is open to those at more advanced stages of their training.

The first year of the WCAT scheme is usually spent undertaking clinical training (80%) with protected academic time (20%) to facilitate the acquisition of generic academic skills, attendance research meetings and exploration of PhD projects and supervisors. In some circumstances, trainees who have not already benefited from an introduction to research (e.g. during an undergraduate BSc) may be supported to undertake a MRes in the first year of the programme with the aim of progressing onto a PhD whilst more senior trainees may commence their PhD fellowship.

In the second, third and fourth WCAT years, trainees devote most of their time to their PhD Training Fellowship with usually one session per week of clinical training. From year five until completion of CCT, WCAT Trainees have 20% academic time and 80% clinical training time to complete clinical training, compete for external funding and pursue post-doctoral research.

2.7 The Scottish Clinical Research Excellence Development Scheme (SCREDS)

Academic training post-Foundation in Scotland is provided through SCREDS. There are, in addition, clinical academic opportunities for medical students and Foundation doctors in all regions. The main differences to academic training elsewhere in the UK are that trainees have to hold an NTN in order to be eligible for a SCREDS lecturer post and 20% of training time is protected for academic development. SCREDS lecturers are supported to apply for funding to complete a higher degree through OOPR. Advice on SCREDS opportunities can be sought through Training Programme Directors or academic leads in each of the Scottish Centres. More information can be found on the website.

2.8 Clinical Research Fellowships and University Clinical Lectureships

Funded clinical research posts are often advertised as clinical research fellowships in the medical press (e.g. British Medical Journal, NHS and academic recruitment websites). Most frequently, these are for pre-defined research projects but they can provide excellent research training opportunities. They are open for a range of applicants including trainees who already have a national training number (NTN) who can undertake them in time 'out of programme for research' (OOPR) as long as they are registering for a research degree.

Time taken out for research purposes is normally for a higher degree, e.g. a PhD, MD or Master's degree and will not normally exceed three years. Trainees in their final year of training will not normally be granted OOPR.

The Gold Guide
A Reference Guide for Postgraduate Specialty Training in the UK

Another way for trainees to undertake a dedicated period of research is to work with Academic (Research) Supervisors to devise specific research projects and make grant applications for funding in a way similar to the route that Academic Clinical Fellows achieve funding for their PhD/ research MD. These doctoral research fellowships are offered by several major funding bodies and charities. Trainees and Academic (Research) Supervisors should liaise with local Clinical Training Programme Directors so that time 'out of programme for research' (OOPR) can be planned relative to the starting time for the award. Further details how to obtain permission for training OOPR are given in Chapter 4.

'Orthodox' routes into an academic career such as ACFs/ ACLs are still not the only way in.

Dr. Hoong Wei Gan
Speciality Trainee, OOPR

2.9 Clinician scientists

NIHR Clinician Scientist posts are research-orientated posts awarded to individuals for a maximum of five years, either before or after CCT. They are designed for those undertaking a clinical academic career whether through the integrated clinical academic training pathway or who have undertaken a PhD or research MD and academic training independent of the ACF/ACL pathway. Clinical commitments for trainees pre-CCT are permitted for up to four sessions per week (two days). Clinician Scientists ultimately aim for substantive Senior Lectureship posts combining clinical and academic roles.

Up to one year of research may count towards clinical training with prospective GMC approval and if clinical competencies are attained, and fully documented, during the period of research (Section 4.3). Trainees should discuss with their Academic Regional Representative.

3. Making the most of Integrated Clinical Academic Training

3.1 Clinical Training for Academic Clinical Fellows and Lecturers

Academic Clinical Fellows and Lecturers are, first and foremost, trainee paediatricians. They need to attain the same competency in clinical paediatrics as their clinical-track trainee peers and opportunities to attain clinical competencies should be similar and fit for purpose. Clinical Training Programme Directors in each LETB work with clinical academic trainees and the Academic Training Programme Directors/Academic Leads in Paediatrics to provide the necessary clinical training posts and dedicated academic time. Provision for integrating academic and clinical blocks will vary and should be decided well ahead of time to fit with the needs of all trainees.

It was a bit tricky dovetailing my academic interests, clinical work and membership preparation, but I found my clinical placements were consistently very supportive and helpful.

Dr Felicity Fitzgerald
Academic Clinical Fellow

Academic Clinical Fellows and Lecturers register with the RCPCH, using the ASSET and RCPCH e-portfolio to follow the RCPCH curriculum obtaining the relevant competencies at each level of training and recording evidence of training and workplace based assessments. Newborn Life Support (NLS) Provider status needs to be attained before working on Special Care Baby or Neonatal Intensive Care Units and Advanced Paediatric Life Support (APLS) Provider status must be achieved before ST4. As Academic Clinical Fellows have nine months dedicated research time in the three years of the post, those appointed at ST1, for example, need to achieve their ST1-3 competencies in two years three months rather than the three years allocated for these for clinical trainees.

It is also important to consider when to sit the MRCPCH examinations in relation to the timing of the research time as studying for exams and starting up a research project at the same time can be challenging. The MRCPCH examinations must be passed for transition into ST4.

Organisation, particularly in finishing your MRCPCH, as well as submitting paperwork for ethical approval and funding is crucial... as is finding a supervisor who inspires you and who you work well with.

Dr Hoong Wei Gan
Speciality Trainee

3.2 Organising the research component of the ACF

Once appointed, it is important to decide on an Academic (Research) Supervisor (if one has not been allocated) and finalise the details of the research project in line with the interests of the trainee. Generally, at this stage, the final details of the research project are not set in stone and can be changed. Most projects will evolve during their course, often substantially, before submission for external funding. When planning research, it is important to ensure that the project is feasible within the time allocated, with sufficient time allowed to obtain a favourable opinion from relevant Ethics Committees for patient, healthy volunteer or animal research if this has not already been obtained.

The nine month period of protected research time over the three-year ACF, may be taken in blocks of time, or, for example, over a longer period (e.g. single days per week throughout the three years). There is no single preferred way of doing this and there are pros and cons to either approach although, generally, longer blocks allow trainees to immerse themselves in a project increasing the likelihood of generating results, and making it easier to become integrated into an academic research group. However, it is also important to consider whether long blocks of academic time will allow sufficient time in the training year for acquisition of clinical competencies and the work-place based assessments required for the Annual Review of Competence Progression (ARCP: Chapter 5).

There may also be times during the ACF when clinical training without dedicated research time becomes a priority. Different arrangements may suit different projects and these should be taken into account when planning the clinical and academic post rotation in discussions between the LETB's Paediatric Clinical Training Programme Director and the Academic Training Programme Director/ Academic Lead in Paediatrics. Academic plans should also be included in discussions with Educational and Clinical Supervisors and in ongoing personal development plans.

The opportunity to spend a block of time out of clinical practice has been liberating, and helps me to bring a fresh perspective to my research.

Dr Andrew McArdle
Academic Clinical Fellow

3.3 Organising the research component of the ACL

Academic Clinical Lecturers have a background in research and have already attained a doctoral degree. Most commonly, they will have discussed the opportunities to develop their academic career and research with the Head of the Academic Department to which they are applying before their appointment. Once appointed, it is important to finalise the details of research plans and the support which will be provided by the host University Department.

The ACL provides 50% protected academic and research time over its four years. This may be taken in blocks of time or over a longer period (e.g. single days per week throughout post). Again, there is no single preferred way of doing this, and how this time is taken will vary with the research being conducted and the Academic Clinical Lecturer's clinical training needs. It may also be desirable to change the pattern part way through the post with sufficient notice to the Clinical Training Programme Director and with the support of the Academic Training Programme Director/Academic Lead in Paediatrics. Academic plans should be included in the ongoing personal development plan and in discussions with Educational and Clinical Supervisors as well as with the Academic Supervisor.

3.4 Other practical considerations for those in ACFs and ACLs

Information on frequently asked questions about the practicalities of ACFs and ACLs is available from the NIHR TCC website.

3.4.1 Administrative requirements

Whilst Academic Clinical Lecturers have University contracts and are afforded automatic access to University support systems, Academic Clinical Fellows hold contracts with an NHS Trust. Some Universities which host ACFs will arrange honorary University Contracts for postholders, whilst others will grant University 'Associate' status. Either way, it is a good idea to contact the host University early as access to e-library, University computer systems, courses and buildings will be essential for the ACF. The University's Director of Integrated Academic Training will be able to assist.

Academic Programme Directors/ Leads for Academic Training in Paediatrics in the host University or Academic Supervisors should advise on whether University induction courses, safety training and risk assessments need to be completed before starting working in the host research facility.

For those in ACFs, the salary during the research time will usually be paid by the Trust by which the ACF was employed immediately before the research block. This can sometimes cause temporary problems, particularly if a Trust has not employed an Academic Clinical Fellow before and is not familiar with the system, so it is worth confirming that all parties are aware of arrangements with plenty of notice to ensure timely salary payment. Support should be available initially from LETB Administrators. Any further concerns should be raised with the Academic Programme Director/ Lead for Academic Training in Paediatrics or local Director of Integrated Clinical Academic Training.

For those in ACLs, the salary during both the clinical and research periods will usually be paid by the University hosting the research. Any banding payments for contracted out-of-hours work should usually be paid via the University but it is worth confirming that all parties are aware of arrangements with plenty of notice to ensure timely salary payment. Support should be available initially from LETB Administrators and the Human

Resources Department of the host University. Any further concerns should be raised with the Academic Programme Director/Lead for Academic Training in Paediatrics or local Director of Integrated Clinical Academic Training.

3.4.2 Out-of-hours work during academic time

Many blocks of academic time do not include regular on-call commitments and, therefore, banding payments may not be payable in these periods. Clinical rotas may benefit from out-of-hours work by academic trainees but this should be considered in balance with the possible compromise to academic time which can result from regular out-of-hours clinical commitments on full-shift rotas. Some academic trainees report that ad hoc locum shifts, whilst less financially secure, are more compatible with protecting academic time.

3.4.3 Study leave support for clinical training opportunities

Arrangements for study leave for all trainees can vary over time and this should be checked with the host LETB. Academic Clinical Fellows have to achieve the same clinical competencies as clinical trainees in the same time frame and should be eligible for equivalent study leave funding as their clinical-track peers to support their clinical training. ACLs should contact their LETB and University hosts as training time is increased and equivalent study leave funding to support clinical training needs may be spread across the whole training time.

3.4.5 Generic Academic Training and NIHR bursaries

The NIHR supports the general academic training of its Academic Clinical Fellows through formal taught Research Training Programmes within host Universities. These programmes provide generic training in research mapped to the Academy of Medical Sciences guidelines against which trainees are assessed at ARCPs (Chapter 5). Some Academic Clinical Fellows synthesise this training in generic research skills into a Masters Degree. University Directors of Integrated Academic Training which administer the training programme have details on how this training is accessed.

ACLs will have achieved most of these generic academic competencies during their prior PhD training programmes. Remaining competencies are undertaken as staff members usually on courses run by the host University.

The NIHR supports it's Academic Clinical Fellows and Lecturers with an annual bursary (£1000 per year at the time of this Guide). This bursary supports trainees in attending research meetings and conferences relevant to their academic training. Again, host Universities manage the funds and University Directors of Integrated Academic Training have details on how this is accessed.

As the bursary cannot be used for expenses to carry out the research or for consumables, Academic Clinical Fellows and Lecturers should discuss with Academic Supervisors as

soon as possible how support for their pilot data will be attained, for example, through small institutional grants or by applying for external funds which facilitates research and is good training for an academic career.

3.5 Taking time Out of Programme for Research (OOPR)

Within the Integrated Clinical Academic Training Programme, research time (25% of the ACF and 50% of the ACL) is within programme and approval for time 'Out of Programme for Research' (OOPR) is not required. However, once Academic Clinical Fellows have attained funding for a doctorate, as is necessary for the goal of an academic career, LETBs require appropriate time 'out of programme for research'. As clinical rotas need to be planned well in advance, most LETB Clinical Programme Directors will need a notice period for trainees requesting OOPR, so it is worth planning well ahead and liaising with the LETB Clinical Training Programme Director in Paediatrics over the start date of funding applications when applying for doctoral fellowships. Further information about OOPR is given in Chapter 4.

4. Taking time Out-of-Programme for Research

4.1 Seeking out research opportunities

Before entering research, trainees should consider their research and clinical interests. These may be in a general area or there may be a very specific research question. As this is what the trainee may be working on for some time, even some years, it is worth spending some time thinking about this.

The next step is to find an Academic (Research) Supervisor who shares this interest. This may be clear but may take a bit of initiative. Local Clinical Supervisors, Paediatric Consultants, the Head of the local University Paediatric Department, local University Paediatric researchers (who are usually shown on University websites), other trainees and the RCPCH's Academic Regional Representatives can all be good sources of information. Networking at conferences and scientific meetings, especially those in a subspeciality area of interest, can also be an efficient way to find a supervisor. The regular meetings of the Academic Paediatrics Association are attended by senior Paediatric Academics and academic trainees and can be a useful source of information and networking opportunities and are well worth attending.

Other than choosing a project that is in an area that you are interested in, it is really important to have a good supervisor. S/he will be instrumental in guiding you through the development of a rigorous research proposal, supporting you during the grant application process, and ensuring that your research career is progressing appropriately.

Dr Kathleen Sim
Doctoral Research Fellow

4.2 Seeking out funding opportunities

Some PhD/research MD posts are already funded, often by project grants focussed on particular research questions. These posts may not have a training budget and generic research training may have to be paid for in other ways.

Some trainees apply for personal funding, through a Doctoral Fellowship providing funding for the individual trainee and their research project. These can, therefore, give more autonomy, as well as funding training needs. Such fellowships are highly competitive, but trainees should use this knowledge to work with an Academic Supervisor to present a good project to the funding body. Many funding assessors, whilst established senior researchers, do not have a background in paediatrics and, therefore, it is important to present the relevance of the work to child, or ongoing, health and the broader impact that the work could have once it is completed.

The National Institute for Health Research (NIHR), Medical Research Council (MRC), Wellcome Trust and some Charities provide personal Doctoral Fellowships. Where the research project might form part of a project grant application being made by an intended Academic Supervisor, the trainee's salary costs might be included in the budget of the project. Some Universities offer Teaching or University Fellowships or Lectureships for the pursuit of doctoral training towards a PhD.

Towards the end of my second speciality training year, I started seriously thinking about research, and applied for a three-year clinical research fellow post. Although I didn't get that PhD post, I was offered one year of research. During that year, I was successful in getting a NIHR Doctoral Research Fellowship, which has provided funding for my research and training for the last three years.

Dr Andrew Prayle
Doctoral Research Fellow

4.3 Applying for permission to take time OOPR

I would advise anyone thinking of doing research to begin looking into projects and funding as early as possible because all of these processes take time and the LETBs require notice for time out of programme.

Dr Madeleine Adams
Clinical Research Trainee

The Gold Guide to Postgraduate Training states that trainees 'should be encouraged and facilitated to undertake research where they have an interest in doing so'. Trainees with an NTN who wish to undertake a substantial research project requiring dedicated time need to apply for time out of programme for research (OOPR). Academic Clinical Fellows also need to apply for OOPR for their doctoral training (the PhD/research MD) although not for the nine months of academic time within the three-year ACF itself.

Permission to take time OOPR is not automatic and Postgraduate Deans, who are responsible for allowing OOPR, need to see that the proposed time is funded, will lead to a higher degree, that the research and research training will be robust and appropriately supervised and that the trainee will gain generic academic skills (in line with the AMS guidelines). For trainees whose applications to retain their national training numbers (NTN) during time OOPR is accepted by their Postgraduate Dean, the Gold Guide to Postgraduate Training states that three years is normally the maximum time allowed out of programme and that OOPR will usually start from trainee's rotation date.

Trainees should consult, in addition to their Academic (Research) Supervisor, their

Educational Supervisor and Clinical Training Programme Director. The RCPCH website also provides advice on obtaining permission for time OOPR.

The process of seeking LETB approval for time OOPR begins when trainees complete the LETB's OOPR form with a copy of the research proposal and a description of the research training which will be undertaken and submit this to the local RCPCH Academic Regional Representative for RCPCH approval. The local Academic Regional Representative provides a recommendation for assessment by an independent RCPCH Academic Regional Representative before RCPCH approval can be granted. The permission of the Educational Supervisor, the Clinical Educational Supervisor and Head of the local Postgraduate School of Paediatrics is then required through their signatures on the OOPR form. LETBs often require applications six months in advance of the proposed start date and trainees also have a duty to inform their current employer at least three months in advance to ensure that local service needs are addressed. The local Academic Programme Director/Lead for Academic Training in Paediatrics or RCPCH Academic Regional Representative may be helpful in local discussions about an appropriate notice period, but trainees should ensure that they are planning well in advance.

Trainees who retain a clinical element to allow them to maintain their existing competences whilst out of programme may be able to count this clinical time, or some of this time, towards the award of a CCT. The trainee should seek advice from their Clinical Training Programme Director to ensure that the proposed clinical element is appropriate. The Research component of the OOPR can only be counted towards CCT if such research training is a mandatory part of the curriculum. The RCPCH local Academic Regional Representative can advise on this.

If any of the OOPR time is to count towards CCT, prospective approval of the GMC is required. Once the LETB form is submitted to the trainee's LETB, and LETB approval granted, the LETB offers this to the GMC for prospective approval for out of programme experience. The GMC does not accept applications directly from individual trainees and does not need to approve OOPR periods where the time is not to count towards CCT.

Guidance on how to apply for OOPR in Paediatric Training is available from the RCPCH website, from LETBs and in the Gold Guide available from the MMC website.

It seemed as though academic training was confined to the integrated pathway, and that I had missed my chance. Fortunately, a clinical research fellow post in my field of interest presented itself and this has subsequently led onto a PhD. This has been enlightening, frustrating at times, but a thoroughly enjoyable experience, and has confirmed my future interest in academic paediatrics.

Dr Christopher Gale
Clinical Research Fellow

4.4 Developing a clinical academic career after a PhD/research MD

Some trainees will re-join clinical training after completing their period of research OOPR. However, others may wish to continue their clinical academic training. Posts/ fellowships available to those who have completed a higher research degree include Academic Clinical Lectureships and Clinician Scientist awards. Planning an application to such posts requires advanced preparation, Academic Supervisors, local Academic Programme Directors/ Leads for Academic Training in Paediatrics, Heads of University Departments and RCPCH Academic Regional Representative can advise.

5. Support, supervision and assessment

5.1 Support schemes and mentoring

The Gold Guide to Postgraduate Training states that trainees 'should be encouraged and Academic medicine is different from clinical medicine.' Adjusting to a different way of working is rewarding but may be challenging. All academics have highs and lows and getting used to this is part of academic training. Having good support networks can, therefore, be particularly important. This support can come from various sources and it's important to find out which works best.

The Academic (Research) Supervisor is likely to be the main source of support for academic work and trainees also have an Clinical Educational Supervisor who must be different from the Academic Supervisor and who will oversee progress in clinical training. In addition, each Paediatric Department will have an Academic Programme Director/ Lead for Academic Training in Paediatrics and Clinical Academic Programme Trainees (ACFs and ACLs) also have University Directors of Integrated Academic Training.

Establishing a mentoring relationship can also sometimes be useful either from within the local academic training environment or from a different research area/department/ institution. The latter can be particularly helpful in discussing more general or long term issues regarding a career in academic medicine.

It is best to discover whether a mentoring scheme exists in the host institution early in a research post. If no such formal system is in place, the Academic Supervisor or Academic Programme Director/Lead for Academic Training in Paediatrics may be able to recommend someone to fulfil this role.

In addition, host institutions may have an ACF or junior clinical academic forum and the Academic Paediatrics Association can be an excellent place to meet trainees at all stages of academic training and research.

My mentor went out of their way to help me both practically, by providing encouragement and by inspiring me with stimulating academic discussions.

Dr Catherine Taylor
Academic Foundation Programme Trainee

5.2 Educational supervision and portfolios

As well as their Educational Supervisor for their clinical work, trainees have an Academic Supervisor for their academic training and research. This will normally be the research supervisor. Academic Supervisors, even those who are not paediatricians, should have access to the RCPCH e-portfolio and this is arranged through LETB Administrators for Paediatrics. Trainees should meet regularly with the Academic Supervisors to discuss progress against an Academic Personal Learning Plan which has been agreed six monthly

with the Academic Supervisor. The Personal Learning Plan should contain generic, transferable academic skills as well as specific research skills relevant to the trainee's research project.

The Academy of Medical Sciences guidelines provide information on the academic skills which are expected of academic trainees (Table 2). Trainees should record their academic objectives, skills and regular academic supervision meetings in the RCPCH portfolio.

5.3 ARCP and Revalidation

Each trainee who is training in research completes a Joint Clinical Academic Annual Review of Competence Progression (ARCP) every year, regardless of the percentage of time in the year spent in academic vs clinical work. The ARCP is coordinated by the LETBs who also coordinate the important process of revalidation in England and Wales.

Table 2: Summary of criteria for assessment of research experience

Research skills log

- Approaching for study consent
- Gaining study consent
- Randomising for study treatment
- Recording study data for a research study
- Making a research database
- Undertaking study data analysis
- Designing and displaying data graphically
- Designing a poster of research data
- Making a research presentation
- Laboratory technique
- Managing a research study

Research Training Assessment

- Achieving Research Competencies in the Curriculum (Assessment Standard 25)
- Progress with examinations (e.g. MRCPCH, PhD, Research MD)
- Generic research skills
- Research Methods
- GCP training
- Consenting Participants for Research Studies
- Critical Appraisal of Published Research
- Research Governance
- Research Funding Applications
- Undertaking Research/ Research study progress
- Presentations of Research
- Supervising Research
- Research Publications
- Progress of Personal Research Programme
- Teaching

Evidence provided for the Joint Clinical Academic ARCP includes research supervision records from research time and evidence of an annual meeting between the trainee, Academic (Research) Supervisor and the Academic Programme Director. This is similar to an academic training report. Trainees who have undertaken clinical training in the assessment year also complete a clinical training report with their Clinical Supervisor. Academic Supervisors cannot also be Clinical or Educational Supervisors to individual academic trainees. LETBs provide information to their trainees on the annual assessment process, the foundation for which are given in the Academy of Medical Sciences guidelines and the Gold Guide to Postgraduate Training.

6. Where to find further information

This Guide is based on advice and information from the National Institute of Health Research (NIHR) and The Gold Guide to Postgraduate Training.

Other helpful links are listed below.
RCPCH 2012 Turning the Tide: Harnessing the power of child health research. A report by the Royal College of Paediatrics and Child Health Commission on Child Health Research

'Walport Report'

Royal College of Paediatrics and Child Health

Academic Training in general

Out of Programme Information

Academic Regional Representatives

Academic Paediatric Association

The Academic Paediatrics Association has an active trainees' forum and annual trainees meeting – run by those training in research for the benefit of children.

Academy of Medical Sciences Paediatric Association

Website

MRC

Website

National Institute for Health Research Trainees Coordinating Centre

Website
Briefing documents

Wellcome Trust

Website

All websites were correct at the last access date of 07.03.2013

Contributors

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Appendix 1

Useful Clinical Academic Meetings include:

Academic Paediatrics Association

The Academic Paediatric Association of the UK and Ireland aims to promote academic paediatrics and child health.

The APA holds regular meetings with presentations of trainee research projects as well as workshops and discussions about issues related to Paediatric research (i.e. funding, mentoring). . It is highly recommended that all ACFs attend as many of these meetings as possible and present their research for constructive criticism and to develop their CV. Discounts are available on registration for trainees. One meeting a year is run by academic trainees for academic trainees.

Royal College of Paediatrics and Child Health

The RCPCH Annual Conference aims to promote and showcase research in paediatrics and child health. Prizes are awarded for the best presentations by trainees and there is always at least one session devoted to trainee issues.

NIHR Trainees' Annual Meeting

The NIHR holds an annual two-day conference for NIHR funded academic trainees. At the NIHR Trainees' Annual Meeting, Academic Clinical Fellows and Lecturers discuss issues regarding training and get useful advice on applications for grant funding. It is free and highly recommended. Meetings are usually in the autumn.

Sub-Specialities often have research societies which opportunities to present research for critical appraisal and suggestions. Many Societies have Young Investigator Awards (e.g. The Neonatal Society).

Royal College of Paediatrics and Child Health
5-11 Theobalds Road, London, WC1X 8SH