Record of changes to Clinical Scientist Guided Training Scheme ACS Route 2 Training Plan Template:

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| Section number | Log of changes since last issue date | Responsible person for authorising changes  |
| All sections | Specific competencies updated | Lauren Harrison  |
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Please complete the following template as the basis of your training plan to be submitted with your application. This should be a working document which you continue to use as the basis of your discussions with your External Advisor.

**Competency Tables**

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| **1 - Scientific** |
|  | **Area of Competence** | **Previous Experience**  | **Proposed Training** |
| Sci 1 | Understand the science that underpins the specialty (modality) and the broader aspects of medicine and clinical practice. |  |  |
| Sci 2 | Demonstrate a strong base of knowledge appropriate to the specialty and to the investigations and therapeutic options available. |  |  |
| Sci 3 | Have experience of searching for knowledge, critical appraisal of information and integration into the knowledge base. |  |  |
| Sci 4 | Apply knowledge to problems associated with the routine provision, and development, of the service. |  |  |
| Sci 5 | Identify the clinical decision which the test/intervention will inform. |  |  |
| Sci 6 | Make judgements on the effectiveness of procedures. |  |  |
| Sci 7 | Apply the knowledge base to the specialty (modality) and to the range of procedures/investigations available |  |  |
| Specific Competencies:* Perform and interpret specialist procedures, measurements, and calibrations, demonstrating an awareness of how they might impact clinical decisions.
* Critically appraise current procedures, applications, and workflows within a particular specialty.
* Demonstrate a broad awareness and relevant specific understanding of new scientific developments in the specialty.
* Collaborate in commissioning of specialist equipment, systems or facilities and producing protocols for safe and effective introduction into service.
* Critically review literature to formulate hypotheses, plan a study to test these, carry out scientific tests, critically review results and present conclusions.
* Understand uncertainties in measurements and include this in the presentation and review of data.
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| **2 - Clinical** |
|  | **Area of Competence** | **Previous Experience** | **Proposed Training** |
| Clin 1 | Understand the requirements of accuracy and precision of a procedure in the context of diagnosis, prognosis, monitoring and treatment and to use that information appropriately. |  |  |
| Clin 2 | Provide interpretation of data and a diagnostic (therapeutic) opinion, including any further action to be taken by the individual directly responsible for the care of the patient. |  |  |
| Clin 3 | Understand the wider clinical situation relevant to the service users presenting to the specialty. |  |  |
| Clin 4 | Develop/devise an investigation strategy taking into account the complete clinical picture. |  |  |
| Clin 5 | Understand the clinical applications of the specialty and the consequences of decisions made upon your actions/advice. |  |  |
| Clin 6 | Demonstrate awareness of the evidence that underpins the use of the procedures employed by the service. |  |  |
| Specific Competencies:* Understand the relevant patient clinical pathways, and the impact that the specialty has on patient management.
* Demonstrate an awareness of the consequences of actions taken on the individual patient or patient population.
* Understand the significance and validity of diagnostic results and other data.
* Formulate advice on the application of diagnostic or therapeutic techniques and/or validity of data in the clinical context.
* Maintain an up-to-date knowledge of clinical practice within a particular specialty and influence changes in practice as needed to take account of new developments, technologies and changing contexts.
* Design, introduce and evaluate new or improved methods used in diagnosis, treatment and rehabilitation.
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| **3 - Technical** |
|  | **Area of Competence** | **Previous Experience** | **Proposed Training** |
| Tech 1 | Understand the principles associated with a range of techniques employed in the modality including the appropriate use of information, communication and digital technologies. |  |  |
| Tech 2 | Have knowledge of the standards of practice expected from these techniques including positioning of patients for safe interventions. |  |  |
| Tech 3 | Perform these techniques. |  |  |
| Tech 4 | Solve problems that might arise during the routine application of these techniques (troubleshooting). |  |  |
| Tech 5 | Understand the principles of quality control and quality assurance. |  |  |
| Tech 6 | Use quality control and quality assurance techniques including restorative action when performance deteriorates. |  |  |
| Specific Competencies:* Demonstrate safe use of specialist equipment, calibration and quality control instrumentation and software.
* Interpret and apply current standards, legislation, codes of practice, guidance notes and related documents appropriate to a particular specialty.
* Organise and conduct appropriate audits and surveys and demonstrate awareness of the impact of such procedures.
* Review and analyse the results of quality control procedures and discuss with others the findings, implications and actions required.
* Contribute to the resolution of technical problems and issues, plan and review appropriate action in the case of incidents and near misses, and report according to policies and procedures.
* Analyse and formulate advice on health and safety issues within a particular specialty.
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| **4 – Research and Development** |
|  | **Area of Competence** | **Previous Experience** | **Proposed Training** |
| R&D1 | Read and critically appraise scientific literature and other sources of information. |  |  |
| R&D2 | Develop the aims and objectives associated with a project. |  |  |
| R&D3 | Develop an experimental protocol to meet the aims and objectives in a way that provides reliable and robust data (i.e. free of bias). |  |  |
| R&D4 | Perform the required experimental work to produce and present the results (including statistical analysis). |  |  |
| R&D5 | Recognise the value of research and critically appraise results in the light of existing knowledge and the hypothesis developed and to formulate further research questions. |  |  |
| R&D6 | Present data and provide a critical appraisal to an audience of peers – both spoken and written. |  |  |
| Specific Competencies:* Demonstrate knowledge of the wider healthcare context of a specific research project.
* Perform a literature review to build the knowledge base, then undertake critical assessment of the relevant literature, including assessment of limitations of research set-ups and methods.
* Demonstrate appreciation of the need for research governance and good clinical practice (GCP).
* Design and undertake research and/or service development projects.
* Critically appraise own study methodology, results and outcomes.
* Report study outcomes, including implications for local practice as a result of the study.
* Present research and/or service development projects locally, regionally or nationally in meetings, conferences or scientific publications.
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| **5 - Communication** |
|  | **Area of Competence** | **Previous Experience** | **Proposed Training** |
| Com1 | Assess a situation and act accordingly when representing the specialty. |  |  |
| Com2 | Respond to enquiries regarding the service provided when dealing with clinical colleagues. |  |  |
| Com3 | Communicate with service users, carers and relatives, the public and other healthcare professionals appropriately, modifying means of communication depending on circumstance and its audience. |  |  |
| Com4 | Communicate the outcome of problem solving and research and development activities. |  |  |
| Com5 | Present scientific material to peers, colleagues or other healthcare professionals. |  |  |
| Specific Competencies:* Actively listen and engage with the needs of service users, family/carers and the wider multidisciplinary team, and respond appropriately.
* Collaborate effectively with service users in communicating findings, resolving issues or developing services, within the remit of their own pre-registration role.
* Present material at an appropriate level and format for the audience in scientific publications and/or at meetings, or public engagement events.
* Contribute to the training, supervision and education of other staff/ students/ trainees.
* Apply the principles of equality, diversity and inclusion, respecting data protection, confidentiality and dignity.
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| **6 – Problem Solving** |
|  | **Area of Competence** | **Previous Experience** | **Proposed Training** |
| PS1 | Assess a situation. |  |  |
| PS2 | Determine the nature and severity of the problem. |  |  |
| PS3 | Call upon the required knowledge and experience to deal with the problem. |  |  |
| PS4 | Initiate resolution of the problem. |  |  |
| PS5 | Demonstrate personal initiative. |  |  |
| Specific Competencies:* Define and assess the problem, including consideration of risk.
* Utilise specialist knowledge and works collaboratively to formulate an action plan with a view to achieving a solution.
* Communicate and document intended actions.
* Prioritise actions and executes the plan to resolve the problem.
* Review the effectiveness of the action plan after implementation and suggest further actions as necessary.
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| **7 – Professional Accountability** |
|  | **Area of Competence** | **Previous Experience** | **Proposed Training** |
| Prof1 | Follow the Standards of Proficiency for Clinical Scientists as published by the Health & Care Professions Council. *(published September 2023)* |  |  |
| Prof2 | Take personal responsibility and justify your decisions. |  |  |
| Prof3 | Work within the legal and ethical requirements of the modality, recognise the importance of equality, diversity and inclusion, including these and other ethical aspects of practice and scientific research. |  |  |
| Prof4 | Practice safely and effectively within your abilities and recognise the limits of personal practice and identify when to seek advice. |  |  |
| Prof5 | Manage personal workload, prioritise tasks appropriately and look after your own health and wellbeing, seeking appropriate support where necessary. |  |  |
| Prof6 | Demonstrate competence in the principles of clinical governance including maintaining appropriate records, clinical audit and accreditation requirements relevant to the modality. This includes diversity and inclusion, confidentiality, informed consent and data security. |  |  |
| Prof7 | Contribute effectively to work undertaken as part of a multi-disciplinary team, working in partnership with service users, carers, colleagues and others. |  |  |
| Prof8 | Supervise others as appropriate to area of practice, demonstrating leadership qualities, behaviours and approaches, and engage with appraisals as part of staff management and development. |  |  |
| Prof9 | Understand the need and obligation for career-long self-directed learning, including appropriate use of technology, awareness of emerging technologies and new developments, and the importance of continuing professional development. |  |  |
| Prof10 | Establish and maintain a safe practice environment, adhering to Health and Safety requirements, including infection control, and recognise your role in health promotion and preventing ill health. |  |  |
| Prof11 | Work within the structure and organisation of the local service and demonstrate awareness of financial accountability, budgetary control and resource management and a general understanding of the way the modality is structured and practised in other locations within the UK. |  |  |
| Specific Competencies:* Demonstrate the ability to work within legal and ethical boundaries of the modality and recognise the limitations of their knowledge and skills.
* Is able to explain their own role and understand the limitations of their Scope of Practice.
* Justify and take appropriate actions within own Scope of Practice, and refers to other professionals as appropriate.
* Apply the principles of clinical governance and audits, reflecting on and reviewing practice.
* Adhere to standard operating procedures and quality systems.
* Operate within the requirements of professional accreditation schemes appropriate to the modality.
* Understand the principles of appraisal and the need for supervision in their area of responsibility.
* Support aspiring professionals during work placements or outreach events, and contribute to the induction of new staff.
* Understand and reflect on the importance of continuous development and the need to update practice in response to changes in clinical and/or service needs and new scientific and technical evidence.
* Demonstrate a basic knowledge of health and safety requirements including infection control as appropriate to the modality.
* Demonstrate a basic understanding of the structure and organisation of the department and its overarching governance structures, including relevant procedures and policies.
* Understand the importance of staff wellbeing, the role of employee support services and how to access these.
* Promote equality, diversity, and inclusion in all interactions, recognise bad practice and is able to suggest improvements.
* Apply the principles of equality, diversity, and inclusion in all communications, respecting data protection, confidentiality and dignity.
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**Training Timeline**

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| **Year** | **Training Activity** | **Competencies met by training** | **Date Completed by** | **Progress** |
| Year 1Months 1-6 |  |  |  | Not Started/ Ongoing/ Completed |
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| Year 1Months 7-12 |  |  |  | Not Started/ Ongoing/ Completed |
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|  |  |  | Not Started/ Ongoing/ Completed |
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| Year 2Months 1-6 |  |  |  | Not Started/ Ongoing/ Completed |
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|  |  |  | Not Started/ Ongoing/ Completed |
| Year 2Months 7-12 |  |  |  | Not Started/ Ongoing/ Completed |
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| Year 3Months 1-6 |  |  |  | Not Started/ Ongoing/ Completed |
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| Year 3Months 7-12 |  |  |  | Not Started/ Ongoing/ Completed |
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