

Portfolio Guidance Notes

The RCT Equivalence Standards - Engineering

In order to demonstrate to The RCT assessment panel that you are working at a sufficient level, it is necessary to produce a portfolio of evidence detailing how you meet each of the standards. Not everyone will have first-hand experience of every aspect and in these cases you will need to demonstrate an understanding of the subject in lieu of being able to present first hand evidence. First hand evidence is however preferential and in many cases without this you may not meet the requirements for entry. When compiling your report attention should be paid to your particular scope of practice, Renal, Rehabilitation, Radiation or Medical Engineering. References should be made with your report to also show how all of these are addressed.

To assist you with the production of your evidence portfolio further, The RCT has given examples of the types of evidence which could be seen as acceptable for each of the criteria, details of which are below.

A. Safe Working Practice

1. Provide evidence that you are competent with a range of generic skills, including infection control, basic life support and adhering to health and safety regulations.

- Explain in your portfolio how health and safety affects your day to day role.
- Provide details on infection control measures you adhere to when performing equipment maintenance.
- Show you have completed your mandatory infection control, life support and health and safety training and explain how this relates to your work.

2. Demonstrate an understanding of the application of health and safety and risk management principles to all aspects of the Clinical Technologists role.

- Can you demonstrate how your local health and safety policies cover your work, or show an understanding of the risks around lone working or working in clinical settings. Can you evidence how you meet these requirements in your day to day role?
- Show you have completed your mandatory health and safety training and explain how this relates to your work

3. Perform a range of risk assessments appropriate to your role.

- Have you performed any risk assessments? If not you may need to learn how to do one and carry out a range of assessments covering several aspects of your role. These may include COSHH, decontamination, moving and handling or aspects related to medical device procedures.
- If you are unable to perform a risk assessment you could review one already carried out and comment on its suitability and how it applies to the workplace.

4. Observe and perform a range of equipment management processes.

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- What policies and procedures are in place which affect your daily role, possibly as part of a quality system? Can you explain how you apply these?
 - Can you demonstrate an understanding of the central alerting system? Do you know what actions to take in the event of an untoward incident involving medical equipment?
- 5. Demonstrate an understanding of how the equipment life cycle applies to the role of the clinical technologist.**
- Explain the equipment life cycle from specification / tendering / supply / commissioning to disposal and show your involvement in every aspect of the life cycle.
- 6. Observe and assist Clinical Technologists in a range of environments adhering to safety restrictions and regulations.**
- Can you identify relevant legislation which governs your role? Are you able to identify the roles of others such as radiation protection advisors or health and safety assessors and how these affect you?
- 7. Perform health and safety risk assessments in accordance with standard operating procedures.**
- Does your workplace have a risk policy? This may explain your local method for carrying out risk assessments. Carry out a risk assessment using this local guidance.
- 8. Produce and critically review an incident report applying the relevant processes and procedures.**
- Are you involved with reporting or investigating incidents? Either provide evidence that this is part of your role or demonstrate an understanding of the processes involved.
- 9. Plan for and teach users, carers and other healthcare staff within the Clinical Technology environment.**
- Does your role include training other staff? This can include user training on medical equipment or training junior members of your team in how to perform their roles.
- 10. Produce appropriate technical and user documentation.**
- Have you produced any technical reports or user guidance? If not can you explain what guidelines you would follow and the governance and approval processes you would follow?

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B. Equipment Management, Quality Management Systems & Processes

1. Demonstrate an understanding of equipment management and quality management system, to support all aspects of equipment management activities.

- Does your department operate within an ISO9001:2008 quality system? If so you should be able to explain the procedures in place to support you in your role and the importance of having them.
- If you are not currently operating within a quality system, can you demonstrate an understanding of them and what such a system would include to help you manage medical equipment?

2. Apply equipment management processes to assist in the management of rental and loan equipment.

- Explain how you would manage equipment which is on loan from a supplier.
- Demonstrate an understanding of indemnities and how you would use records to manage the process.

3. Perform equipment management procedures in accordance with standard operating procedures.

- Can you explain your involvement with carrying out internal audits, if not can you explain the general requirements of a quality system with regards to control of documents and records?

4. Operate equipment, performing calibration and equipment quality assurance/control processes in accordance with standard operating procedures.

- Give examples of how you operate equipment and perform both user checks and maintenance procedures with reference to all relevant documentation.

5. Perform audit and checks on the work of third party service providers.

- What systems do you have in place to manage external contractors and how do you monitor and assess their work?
- If this is not your responsibility, can you demonstrate an understanding of what is required?

C. Equipment acceptance, installation, PPM & decommissioning

1. Demonstrate an understanding of the procurement process from working with the user to define the user specification through to the procurement process adhering to local processes.

- Have you liaised with manufacturers and users to arrange equipment demonstrations?
- Can you show an understanding of pre-purchase questionnaires?

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- Are you involved with equipment acceptance and installation including assessing installation requirements?
 - Show how you participate in the procurement of equipment, accessories or consumables.
- 2. Identify and make the appropriate choice of equipment for a desired application.**
- What involvement have you had with drawing up equipment specifications and investigating options which meet the user's requirements?
- 3. Complete equipment acceptance procedures and, where appropriate, additional installation procedures for a range of medical devices managed by Clinical Technologists.**
- Explain the acceptance testing procedures you follow and demonstrate how you ensure that equipment meets the requirements.
 - Can you show that you understand the environment in which equipment is installed and that the environment is configured to enable safe treatment to take place?
- 4. Perform a range of electrical safety tests and calibration checks and adjustments on medical devices with and without patient applied parts and demonstrate an understanding of the process.**
- Show evidence that you understand and can perform electrical safety tests on a wide range of medical devices including equipment with applied parts.
- 5. Perform PPM procedures, equipment modification activities and control checks and adjustments on a range of medical devices in accordance with standard operating procedures.**
- Show evidence that you participate in the PPM process for a wide range of equipment and that you understand all the requirements.
 - The report must include examples of understanding the principles of, and working on, a wide range of equipment appropriate to your particular specialism.
 - For those working in Renal engineering, examples are required which cover devices directly involved in renal replacement therapies and also the pure water systems that support haemodialysis equipment.
- 6. Recognise and identify common artefacts, hazards, interference and faults that are associated with medical devices and suggest and/or perform corrective action.**
- Provide evidence that you understand common faults with a wide range of equipment and show that you have experience in performing corrective actions.
- 7. Perform repair procedures on a range of medical devices.**
- Provide evidence that you are competent to repair a wide range of medical devices.
 - You should provide evidence that you understand prioritisation of workload to ensure effective technical support is provided to all end users.

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- For those who work with equipment whilst it may be connected to a patient, such as those working in Renal engineering; you will need to provide evidence that you can recognise and diagnose problems, user or technical, during a patient treatment and ensure that the correct action is followed to ensure the patient receives treatment while maintaining the absolute safety of the patient.
- 8. Perform assessments, interventions and equipment handovers in a safe manner while undertaking appropriate infection control techniques and other health and safety best practices.**
- Show how you communicate effectively with users before, during and after PPM and repair operations.
- 9. Decommission and dispose of equipment in a safe and appropriate manner according to local procedures and all relevant legislation, regulations and guidance.**
- Explain your involvement in the disposal process, making reference to any legislation such as WEEE or environmental directives. Explain your obligations on information governance during the disposal process.
- 10. Perform quality control procedures and review and interpret quality control results.**
- Do you carry out any quality control procedures such as taking water samples or performing daily or weekly checks on equipment?
 - If not you will need to demonstrate you understand the importance of carrying out such procedures.
 - For those working in Renal engineering it is expected that this will include demonstrating familiarity with guidelines set by the Renal Association and the international standards which govern purity of water and solutions used in renal units as well as general medical equipment safety standards.
 - Renal engineers must be able to provide evidence that quality control systems for water purity are understood and how, and under what circumstances, corrective action should be implemented.

D. Equipment Design & Safe Use

- 1. Teach/train healthcare staff how to operate equipment, use accessories and the correct storage of a range of medical devices and consumables.**
- Do you carry out any user training for healthcare staff? If not can you give examples of when you have identified how misuse of equipment or incorrect storage has resulted in failure and the steps you took to communicate this to the users.
- 2. Perform measurements, checks and tests required in order to prescribe or design technology solutions.**
- Have you undertaken an equipment evaluation to ensure it meets requirements?
 - If not can you explain what needs to be considered and how you would go about performing an evaluation?

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- Does your department manufacture equipment or components and if so what is your involvement?
- Can you demonstrate an understanding of the process for design and development of a new product?

3. Specify, design and facilitate the manufacture of new devices or modification to an existing device.

- Have you ever designed and manufactured a simple electronic device, maybe as part of an educational project at college or university?
- Have you ever identified a design flaw with some existing equipment and worked with the suppliers or manufacturers to find a solution?
- Have you been asked to investigate an innovative mounting solution for existing equipment which was not commercially available?
- If you have not been involved with any of the above then can you discuss the design of an existing piece of equipment and make recommendations for improvement, or explain why the design is the way it is.

4. Assess the solution identified against the outcome requirement, financial viability, time constraints and resource implications.

- Test a product to ensure it meets the initial requirements drawn up in the specification.
- Review the time, cost and resource implications of supplying a particular product.
- Identify modifications to an existing product which may make it more suitable.

E. Good Scientific Practice

1. Adhere to relevant standards of professional practice as defined in Good Scientific Practice. Demonstrate that you have read, understood and comply with this document in all aspects of work.

- Good Scientific Practice is a document written by the Academy of Healthcare Science, a copy of which is available here: [Good Scientific Practice](#)
- This document sets out the principles and values expected of the Healthcare Science workforce.
- You should demonstrate throughout your report that you have read, understood and apply this document in all aspects of your work.

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