The Scientists

A diverse team of scientific and technical professionals is required to ensure the successful management of medical devices. For example:

Engineers
Design and develop new medical devices, responsible for device improvement, safety and quality assurance and service management

Technologists
Responsible for equipment servicing and maintenance, use advanced design and medical image processing tools, utilise 3D printing and other devices for patient use or for research

Clinical Scientists
Support and manage medical devices, design and develop equipment for patient use or within research programs, and teach a wide range of staff and abilities

Quality Assurance Specialists
Ensure quality requirements and performance are achieved for medical devices, utilise different standards and regulations to ensure safe practice, and liaise with manufacturers, companies and organisations to manage device issues

... and many other exciting and life changing roles

Do you know Clinical Engineering specialists manage thousands / millions of medical devices each year to ensure they operate accurately and reliably?

Could you be one of these experts?

This series of leaflets highlights the science and the scientists behind some widely used medical techniques.

They are produced by the Institute of Physics and Engineering in Medicine.

To find out more about Medical Physics or Clinical or Biomedical Engineering, or to request free leaflets or posters in this series, contact us:

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The Science & The Scientists

Medical device management

Medical device management is a crucial process in healthcare to ensure devices are safe for use and fit for purpose.

The Science

Medical device management follows the steps to the right, under the framework of management systems:

Management systems

- Medical device management strategy
- Quality management system

Specification / assessment / purchase

- Clinical/technical specification to meet clinical need
- Device assessment, comparison and purchase
- Check devices are UKCA/CE marked

Acceptance testing / commissioning

- Agree device configuration
- Confirm any contracts are in place
- Confirm training has been completed
- Equipment is delivered and records are created
- Check delivery for damage
- Performance and safety checks

In-service tasks

- Planned equipment servicing and parts replacement
- Unplanned equipment repair
- Configuration changes/ software updates
- Electrical safety testing
- Performance checks and calibration
- Respond to field safety notices, device incidents

Device decommissioning & disposal

- Remove devices from clinical use when they can no longer be repaired or are not fit for purpose
- Dispose of devices appropriately and responsibly in accordance with relevant policies and procedures

Planning for replacement

- Perform risk assessments to aid the organisation with prioritisation of devices for replacement.

Life cycle of a medical device