CAMRIN

Collaborative Medical Physics Service

NHS
Cheshire and Merseyside

PROBLEM STATEMENT

- Medical Physics support is an essential service for radiology departments, currently, trusts do not have access to medical physics support and there are no alternative providers who are able to fulfil this request.
- "North West of England has 49% of the benchmarked Medical Physicist workforce, the lowest regional number in the country."
- After NHS England procured Advanced Acceleration Technology for MRI scanners, medical physics support became an essential prerequisite to ensure the successful implementation of the AAT and optimisation of scanning protocols.

APPROACH/SOLUTION

- **There were 3 options to address the problem statement:**
- **Do nothing.**
- **Continue with our current medical physics provider, CAMRIN has an existing SLA for radiation protection, however the provider does not have the capacity to optimise the MRI AAT project.**
- **Following the development of a business case CAMRIN was awarded funding from Cheshire & Merseyside Cancer Alliance to fund the service for two years.**
- **CAMRIN commissioned the Clatterbridge Cancer Centre's Medical Physics team to provide a medical physics service equivalent to 1 WTE MRI Medical Physicist Expert (Band 8a), this resource would be split equitably among trusts based on the number of MRI scanners in each trust.**

HOW BENEFITS WILL BE QUANTIFIED

- **Number of sequences that have been optimised (Increase)**
  - The total number of sequences that have been optimised across all trusts will be a key indicator of the success of the project.
- **Active protocol time (Decrease) or patient throughput (Increase)**
  - The active protocol time will be recorded for each protocol prior to optimisation work, this will act as a baseline.
- Following validation of new optimised protocols the active protocol time will be noted.
- **Image quality/Number of scans repeated (Decrease)**
  - Reducing the number of repeated scans would show an improvement in the efficiency.
- **Number of scans per sequence (Increase)**
  - Time savings achieved as a result of optimisation may not translate directly to an increase in throughput, this may be due to other processes associated with the scan such as preparation or cannulation, however if the time per scan is decreased then this may result in extra images being acquired in the same sequence.

FOR MORE INFORMATION

If you would like more information on this CAMRIN case study; please contact:

CAMRIN@liverpoolft.nhs.uk

OVERVIEW OF THE PROJECT

- To create a medical physics service providing trusts across Cheshire and Merseyside with support and expertise for radiological physics in non-ionising modalities.
- The aim of this service is to optimise MRI services offered across Cheshire and Merseyside, as well as ensuring the successful implementation of the MRI Advanced Acceleration Technology (MRI AAT).
- MRI AAT is a suite of software that was purchased by NHS England for implementation on to eligible MRI scanners. The software is used to reduce the acquisition time and improve image quality for MRI scans.
- In order to fully optimise the benefits of the MRI AAT, specialised MRI Medical Physics support is required to optimise scanning protocols and provide the greatest efficiency increases for each machine.

BENEFITS

For Patients:

- Improved patient experience as a result of reduced scan times.
- Having optimised imaging sequences and protocols reduces the number of repeat sequences that may need to be performed.

For Trusts: (Capacity, Efficiency & Return on Investment)

- Increased capacity on existing MRI scanners.
- Medical Physicist will be able to ensure that the return from the MRI AAT investment will be maximised.

For Trusts: (Quality and Safety)

- Clinical support with set-up, optimisation and research on new clinical techniques.
- Quality assurance to ensure optimised image quality which ensures more accurate diagnosis.
- Assist radiographers to tailor radiological treatments to optimise the services provided to patients, ensuring minimisation of radiation dosing and personalisation of treatment.
- Optimisation of the wide variety of different image sequences that are used whilst scanning to allow a diagnosis to be made for a patient.

NEXT STEPS

- CAMRIN will continue to evaluate the impact that this new service has on MRI services. This will include monitoring benefits, gathering testimonials and using feedback mechanisms to ensure that the service is used in the most effective way possible.

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