Undergraduate Radiography Student MRI Competencies: A Delphi of A Graduate Programme Provider

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BACKGROUND
In June 2010, nine 3rd year undergraduate students accessed two week Magnetic Resonance Placements (MRI) within an independent sector company who deliver a graduate MRI programme. As there are no national competencies for undergraduates undertaking placements within MRI, there was a need to develop in-house competencies so as to inform the design of both the placement and a placement workbook.

METHOD
A Delphi method was used to elicit attitudinal data from a panel of 9 people formed within the company (Hart, 2006). This included 3 Training Managers, 3 Senior Radiographers with training responsibilities and 3 Radiography Graduates. The initial competencies were drawn from the placement provider’s in-house graduate training programme which is guided by the Skills for Health (2010) clinical imaging competencies pertaining to MRI. Consensus was said to have been reached when 80% of the panel agreed on a statement (Last & Fullbrook, 2003).

RESULTS: AGREED COMPETENCIES

MRI SAFETY
Discuss MRI Safety Questions pertaining to patients, chaperones & staff
Describe missile effect and torque
State the procedure of what to do when there is a medical and fire emergency in the MRI scanner
State what Radiofrequency burns are and the procedures that can be adopted to eliminate them
Identify the role MRI plays in scanning pregnant patients including use as an alternative imaging modality and safety considerations
Describe what quench is relating to the MRI magnet

TECHNICAL MRI
Understand the following MRI Physics Principles:
- TR (Time To Repetition)
- TE (Time To Echo)
- T1/ T2 Weighting

Understand MRI Pulse Sequences:
- Spin Echo (SE)
- Fast Spin Echo (FSE)

Can distinguish between a T1 and T2 weighted images of a lumbar spine

Understand the following MRI hardware terminology:
- Magnet Types
- Faraday Cage
- Gradients
- Cryogens
- Coils

CLINICAL MRI
For MRI Lumbar Spine, Brain & Knee:
Describe the safe and accurate positioning of patients
List common clinical indications
Identify basic anatomical structures on a mid line slice
List common pathologies seen
Identify an axial, coronal and sagittal image

PATIENT CARE
Describe:
The basic principles of how an MRI scanner works to a patient/ chaperone

OUTCOMES
The authors believe this Delphi is useful because:
- Locally it informed the design for a workbook used by the students during the two week placement. All students accessing the placements commented on the workbook as a positive part of their placement with the content being pitched at the correct level.
- Nationally it informs radiography students and educators of the competencies that his provider of MRI Graduate posts deem necessary competencies for applicants who are newly qualified.
- It highlights that there are no national Undergraduate Radiographer MRI competencies and raises the question whether those suggested are sufficient to meet the current and future needs of workforce design or whether this is an area which needs further consideration as per current debates surrounding undergraduate academic programme design including MRI (Forsyth, 2007 & Hardy, 2010).

REFERENCES

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