

nominal group technique was used to optimise the MRI care pathway/service quality criteria; (c) a survey of MRI competence profiles (CP) from the major English-speaking countries was used to identify good practices in CP design; (d) an MRI CP was set up based on the results of steps (a)-(c) and validated with a multi-stakeholder group; (e) an inventory of biomedical imaging physics LO required to deliver the CP was developed via an analysis of textbooks and research literature and validated by a multi-stakeholder expert group. The multi-stakeholder group agreed that the current MRI service catalogue should be maintained, whilst proposing new specific services. The care pathway/associated quality criteria were optimised. CP from 6 countries were studied. A CP consisting of 43 competence statements was developed and validated. An inventory of physics LO closely integrated with the CP was developed and validated.

Conclusion: The process is sufficiently generic to be applicable to the development of physics learning outcomes for all radiography and radiology specialities.

B-1145 11:10

Periodic refresher course for the radiographers of multimodal radiology department: the role of IT technologies

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Purpose: To assess electronic-based educational programs' effectiveness in radiographers' professional development plan.

Methods and Materials: 18 MRI radiographers were included in study. We have used electronic testing system with ID binding, MR examination simulator. Electronic platform was created by IT specialist under MR technologist overview. On the first step, initial experience was evaluated by testing and interview and staff was divided in 3 groups (by knowledge level). Educational course was 2 days (12 hours in total) and includes lectures, MR simulator practice with case studies and final examination. After 6 months we have performed interim review (interview) and after 12 months final review with electronic testing and interview with feedback form.

Results: Based on 3 groups' scoring, radiographers were divided into qualification classes. 2 technicians were assigned to the highest qualification group. Moderate group was assigned to 11 employees. 5 radiographers were assigned to the lowest group of qualifications. All employees have passed re-certification in months 12 and the strong positive dynamic was revealed. 5 technicians from the lowest group increased their knowledge level and upgraded into group 2. 2 employees, received the highest qualification, were transferred to an expert multimodal centre for working with advanced technologies and to act as coaches. Personal satisfaction rate was revealed in 89%.

Conclusion: Electronic platform with face-to-face interviews, regular follow-ups and employees' motivation is the effective tool for staff development. For high-quality and full-fledged training of healthcare personnel it is obvious to use educational and development plans based on electronic technologies.

B-1146 11:18

Eyes on the future of mammography education and training: what needs to be focused to match the demands of the clinical practice?

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Purpose: The purpose of this study was to identify areas that require update on specific knowledge to allow the progression of radiographers' practice in mammography.

Methods and Materials: This study was a cross sectional online survey based on online questionnaire addressed to clinical radiographers in five European countries about training including perceived challenges and continuous professional development (CPD). The questions were closed-ended with possibility to add comments. Answers were dichotomous, multiple choice or with a five point Likert Scale. The data collected (N= 140) was analysed and redundant data was disregarded. Statistical data analysis was performed using the software packages SPSS (version 21, IBM) by using descriptive methods, Chi square and independent samples t-test.

Results: Regardless of country, radiographers considered positioning (86%) and coping with pain (88%), anxiety (83%) and imaging breast implants (71%) as the most challenging tasks. Respondents participated on CPD training about mammography (88%). However, 62% had less than 10 hours CPD per year. Congresses (70%) and conferences (41%) were the most common sources to update knowledge.

Conclusion: The majority of the radiographers reported the need of more training in mammography. The lack of evidence-based knowledge especially related to clinical image quality appropriateness criteria and related to optimal breast compression suggest the importance of well-designed studies on these topics. Variability found could encourage radiographers and teachers to question their own practice and to revise the training programs.

B-1147 11:26

Comparison of curricula, clinical experiences and attributes of radiography programmes delivered by four European educational institutions

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Purpose: To compare the curricula, teaching/learning strategies, skills, clinical practice outcomes and research of radiography programmes delivered by four different European educational institutions.

Methods and Materials: This study was developed in two phases: one focused on curricula analysis using an observation grid and another involving a survey performed on students and teaching staff. Questionnaires were design to explore teaching and learning strategies, skills and outcomes of clinical practice.

Results: ECTS dedicated per core area (natural sciences, clinical practice, research, imaging technology, humanities) differed between institutions. Research practice was similar for three institutions out of four. Students classified technical, practical and communication skills as the most important, while teaching staff highlighted critical thinking. The majority of students defined as "very good" their experience in radiography (58.5%) and computed tomography (45%). Magnetic resonance imaging training was considered "average" by 53% of the UK students and "good" by the others (40%). Mammography, nuclear medicine and radiotherapy were not always available for some students. For 71% (55/78) of the students, the research work contributed to the development of critical/reflective thinking.

Conclusion: The four radiography programmes analysed in this study presented variations on curricula, contact hours and clinical experiences with impact on the outcomes. The critical thinking was emphasised as one of the most important skills that a radiographer should develop and, for that reason, research should be considered as a core unit in radiography/medical imaging education. Further work is needed to assess the real impact of different programmes on professional and academic mobility across Europe.

B-1148 11:34

The development of a CAD tool employing TELTA, designed to support the training of radiographers in chest pattern recognition

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Purpose: Radiography is a dynamic profession that has undergone rapid technological advancements in recent years. The use of technology-enhanced learning, teaching and assessment (TELTA) to support innovative training options for radiographers to enhance their radiographic image evaluation and pattern recognition skills is warranted. However, a gap in current practice exists in the availability of custom designed computer-aided detection (CAD) tools to augment TELTA use in radiography.

Methods and Materials: A CAD tool for teaching pattern recognition in chest imaging was designed as a collaborative project between the Mechanical Engineering Science and Medical Imaging and Radiation Sciences Departments, the University of Johannesburg. A Design Science Research (DSR) paradigm was used. An initial needs analysis was performed involving a focus group interview of eight practising radiography educators. The findings of a systematic literature review coupled with the needs analysis outcomes were used to compile a software requirements specification document to guide the CAD tool development process.

Results: A CAD prototype was designed to function as a live tool for LTA purposes. The CAD tool design facilitates the collection of data on student tool usage, performance in automated assessments and managed progress based on user-tracked data. Important to the tool was that the students should be able to apply standard pattern recognition tools to manipulate the image without altering the original.

Conclusion: Details of how the prototype was developed will be given; the development base provides an evidence based mechanism for further prototype innovations. Initial data from prototype testing will be provided.

B-1149 11:42

Internship supervisors' perception of the radiography students in clinical environment

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Purpose: To identify and describe the perception of internship supervisors of the radiography students in clinical environment about their competencies, skills and characteristics.

Methods and Materials: A quantitative descriptive, correlational design was used. Data were collected through an adapted version of the Clinical Learning Assessment Inventory-Mentor (CLASI-M) questionnaire with a final sample of