

Appendix I: Medium/long term changes from the development and implementation of AI on the profession

		Professional practice	Professional Policy	Competences	Patient centred care	Feelings	New perspectives
Radiographers (n=215)	Positive impacts	<ul style="list-style-type: none"> • Support tool • Development/adaptation/transformation • Optimisation (dose reduction, protocol, post-processing, ttt plan, patient positioning) • Optimisation appointment scheduling • Change and evolution of the role • Better patient identity surveillance • Modification of the terms of reference • Reduction of administrative tasks • Facilitated work • Better workflow and workflow control • Post-processing reduction • Better Image reconstruction, artefact reduction, ttt planning, segmentation. • Less like physicians' assistants • Ergonomy • Security • Quality • Better medical records management • Time saving (exam, analysis) • No impact • Protocols diversity • Reduction of unnecessary examinations • Reduction of exam repetition • Justification • Errors reduction • Inter & Intraprofessional collaboration • Repetitive tasks reduced • New way to work • Better reproducibility • More time • Complexity reduction • Better organization • To be seen • Change in practice • Job more technological • More radiographers specialists by modalities • Increased number of patients • Precision • Better data transmission • Investment required (otherwise radiographers will become mediocre) • Improvement in working conditions • Job revolution • More IT management • Patient-computer interface 	<ul style="list-style-type: none"> • Radiographer role modification • Professional development • Independence relative to the physician • Change in profession • New positions • New profiles of students • More recognition • New profession with many specialisations 	<ul style="list-style-type: none"> • New competences • New responsibilities • Education (CPD & specific Master) • More IT based training • Autonomy • Improved and new knowledge • Expertise related to AI in imaging • AI integrated into Basic Training (Bachelor level) • Dosimetry more accessible in radio oncology • Contour organs at risk more accessible • Better communication • Better interdisciplinarity • Developing skills for more complex tasks 	<ul style="list-style-type: none"> • More time allocated to patients • Personalized care • Person-centred care • Change in patient management • Time saving for patients • Improved quality of care • Increased caregiver aspects • Interface between the patient and the AI (explain) / mediator between AI-patient • Patient focus • Personalized examination/protocol • Radiographer still needed for patient care • More accurate diagnosis • Decrease of waiting time before examination • Mainly human job 	<ul style="list-style-type: none"> • Attractivity • Valorisation profession • Solidarity • No fear 	<ul style="list-style-type: none"> • Complex tasks more accessible • Images reading/reporting with CAD (screening mammography, emergency) • Medical delegation • Data manager position • Advanced practice • Responsibilities with access to non-radiographers' tasks • Research • Pre-diagnostic • Pre-reporting • Independence (relative to physicians) • Opening of radiology center • Radiographers consultation • 2 different cursus: patient or programming • 2 different curricula: patient or programming • Physician's associate radiographer (no longer a subaltern) • Privileged links with clinicians or emergency unit • New positions: Quality assurance manager for AI-based systems or AI-mediator/explainer, algorithm design and training • Collaboration with engineer • Transfer of medical tasks to radiographers (post-processing, reading, and reporting)

	Negative impacts	<ul style="list-style-type: none"> • Procedures establishment needed • Replaced by AI • Increased workload • Increased work pace • Many tests to do for AI implementation (comparison with and without AI) • Bugs and problems • No time savings => AI errors • Relevant? Still under development • Automatisation / robotisation • IT work => new profession • More technological work • Image quality reduction • Asymmetry between centers with and without AI • Benefits to be demonstrated • Less contact with physicians • Technical problems and delays • Radiographer will have their "AI-assistant" • Practice less centred on image and image quality • Workflow • Time of adaptation and understanding needed • Fewer general radiographers • Do more with less 	<ul style="list-style-type: none"> • Positioning radiographers' profession to avoid disappearing • Lobbying • No lobby (prof. group too small): big loss (salary...) • Reduction of the number of jobs positions • Legitimacy • Costs /economic efficiency • Shortage radiographers • Replacement and hiring of medical assistant • /specialized nurses (eg: for radiography) • Hiring unqualified and cheaper people • Fewer resources (staff, time...) • Expanded radiographer activities but performed by other professionals • Trained radiographers = enhanced engagement • Job description modified • IT staff in the departments needed • Salary reduction • Facilitated training of medical assistants for cross-sectional imaging • End of profession • New sub-category of radiographers • Employer: find new tasks • Reassignment of radiographers to new positions • Justification of radiographers' positions • AI technologist • Two levels of radiographers: position patients/care givers & monitor function 	<ul style="list-style-type: none"> • Loss of competences • Loss of decision-making ability (protocol choices and adaptation) • Loss of expertise • Level regression • Loss of reflexivity • Button Pusher • Consideration of the ecological crisis: blackout that will prevent the use of AI (we will complain about not knowing how to do without) • Monitoring function only • Loss of technical skills • Loss of identity for our profession 	<ul style="list-style-type: none"> • Explain AI to patient needed • Changes in patient interaction • Patients' needs, expectations and problems are forgotten • Loss of caregiver role • Deterioration of the person's care • Reduction in patient comfort • Increased risk to the patient • Radiographer profile less human • Decrease in quality and comfort (factory +++) 	<ul style="list-style-type: none"> • Panic • Divestment • Disempowerment • Lack of interest • Fear • More stress • Less involvement • Burn out • Resign • Factory +++ • Diseases of youth: trial and error and uncertainty • Benefits to be demonstrated • Discouragement • Team exhaustion • CT and MRI: boring job • Fatigue • More trust in AI than in radiographers • Loss of motivation • Discouragements • Pressure 	
Physicians (n=27)	Positive impacts	<ul style="list-style-type: none"> • Support tool • Increased work pace • Repetitive and boring tasks reduced • Facilitated work • No impact (more for physicians) • Standardization • Quality (quality insurance, protocol, images, diagnostic performance, ...) • No special idea • Security • Optimization (time, images, efficiency, triage) • Simplification of complex tasks • Progressive improvement • Evolution of the profession in data science • New/better workflows • Transformation • More and more tasks performed by softwares 	<ul style="list-style-type: none"> • Professional development (as nurses) • Job description modified • Increased role of radiology in the health care system 	<ul style="list-style-type: none"> • New competences • Education (CPD) • New knowledges • New experiences • Responsibilities • Improved radiographers' performance • Better skills 	<ul style="list-style-type: none"> • Focus to patients with specific needs • More time allocated to patients care 	<ul style="list-style-type: none"> • Hype • Confidence • Adaptation • More interesting work • More involvement 	<ul style="list-style-type: none"> • CADx, Pre-CADx • Image reading assistant for physicians

	Negative impacts	<ul style="list-style-type: none"> • Controller function • Automatisation / robotisation • Overtime: duplication (human and AI) • No reduction in workload 	<ul style="list-style-type: none"> • Reduction of the number of jobs positions • Death of the profession in 50 years • Replacement by non-radiographers professional 	<ul style="list-style-type: none"> • Software dependency • Generational (or trained) radiographer shift • Algorithm transparency • Creative power decrease (software) 	<ul style="list-style-type: none"> • Less time allocated to patient • AI will set the standard 	<ul style="list-style-type: none"> • Slow adaptation • Confusion and difficulties 	
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Appendix II: Participants’ opinions about medium- and long-term impact of AI in clinical practice related to professional practice (theme 1)

“I don't see AI as a substitute, but as additional help and safety for patients” (radiographer)

On the other hand, the participants raised concerns about the negative impact that AI can have on radiographers’ practice, resulting for instance in an increase in workflow impacting care quality, critical thinking and de-skilled healthcare professionals leading to safety and ergonomic related issues.

“[...] If AI allows for more patients to be seen in the same amount of time, then employers will seize the opportunity...” (radiographer)

“Radiographers will become increasingly reliant on software and will gradually become slowly more robotic.” (physician)

Appendix III: Participants’ opinions about medium- and long-term impact of AI in clinical practice related to professional policy (theme 2)

“AI will allow employers to hire medical assistants or unskilled individuals at a lower cost to replace radiographers for routine exams.” (radiographer)

“AI will take over many tasks currently performed by radiographers. Consequently, the demand for radiographers will decrease drastically, along with significant changes in daily practice.” (radiographer)

“Increase in the number of patients but be cautious as I believe the risk of professionals leaving the field is also higher, and there's a risk of having exhausted teams if the workload increases.” (radiographer)

“To this question, I feel like saying “let's be bold”: Opening independent radiology centers with only radiographers who outsource the interpretation of exams to radiologists located abroad.”

The technologists will be able to perform any type of exam, whether it's CT, MRI, or X-ray, ensuring no emergencies at the end of the exam." (radiographer)

"The profile of individuals who will choose the profession will change." (physician)

Appendix IV: Participants' opinions about medium- and long-term impact of AI in clinical practice related to feelings (theme 3)

"[...] Always trying to do more in a minimum amount of time, even if it leads to a shortage of radiographers (burnout, resignations, etc.). This is already the case currently. [...]"

(radiographer)

"In conventional radiography, not much will change! In CT scans and MRI, working at the console might become tedious for the radiographer." (radiographer)

The physicians expressed more moderate feelings regarding the impact of AI on radiographers' activities, mentioning the "need for involvement", "slow adaptation", "potential confusion", and "some challenges". However, they also identified the opportunity to make the "work more interesting".

Appendix V: Participants' opinions about medium- and long-term impact of AI in clinical practice related to patient-centred care (theme 4)

"I believe our profession will no longer be solely technical but will be more focused on patient care and building relationships with the patients." (radiographer)

On the other hand, negative perspectives such as a "deterioration of patient care" due to a "time reduction with the patient", "forgetting about the patient's needs, problems and expectations", which could impair patient-centred care were also mentioned.

"There's a risk of forgetting our role as caregivers and that we have a human being in front of us with all their expectations and issues." (radiographer)

"Probably the radiographer will become more technical in aspects like data science and algorithms. And on the other hand, the time spent in patient facing activities will reduce."

(physician)

Appendix VI: Participants' opinions about medium- and long-term impact of AI in clinical practice related to competences (theme 5)

"We'll see the emergence of profiles of radiographers who are experts in AI. The profession will expand its areas of expertise. Radiographers will be able to collaborate with engineers in designing various algorithms related to the field." (radiographer)

"[...] Radiographers could be responsible for the quality assurance of AI-based systems, acting as communicators to both team members and patients to explain AI concepts. The shift of technological aspects towards AI might also strengthen the radiographers' caregiving skills."
(radiographer)

Appendix VII: Participants' opinions about medium- and long-term impact of AI in clinical practice related to new perspectives (theme 6)

"We can develop new roles and positions, such as advanced practice, research, and serving as mediators between AI and patients through radiographer consultations." **(radiographer)**

"Probably a reorganization of radiographers' practices, more radiography-related research, and increased expertise in AI imaging. Plus, new types of positions." **(radiographer)**

"A greater involvement of radiographers in diagnostic imaging with increased responsibilities, similar to the evolution of the nursing profession." **(physician)**