### The Spanish radiographer's role in advanced MRI research

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Learning objectives

A Radiographer, as part of a MRI research team, is more than just a professional obtaining patient’s images for either the investigational studies or clinical trials. Being part of the team means participating and understanding the project as a whole. It means one must know the study’s objectives, collaborate in the protocol design and optimization, and inform the patient about the exam and steps to follow in order to maximize their cooperation. Personal data protection and individual privacy must be guaranteed throughout all the process; a written informed consent should be signed by the patient as well. Taking care of all these particular aspects is very important for a successful completion of each study/trial.

Due to rapid technological advances, and the necessity to deal permanently with state-of-the-art scientific areas, Continuous Professional Development (CPD) for a Radiographer working in a research team is critical.

The radiographer is part of a multidisciplinary team, where each professional performs a very specialized task, combining efforts is crucial in order to produce a work of excellence that can be shared with the scientific community.

Thanks to the continuous investment in new technology, we have the opportunity, in our site, to conduct research in diverse areas, such as cardiology, traumatology, gynecology, obstetrics and neurology.

Throughout this presentation we'll share some of the research we're working on, as well as the importance of the Radiographer role in a research center.
Fig. 1: Neurological Diseases Research Center (CIEN) Carlos III Institute /Alzheimer Project Research Unit (UIPA), Reina Sofia Foundation for Alzheimer Disease Madrid. SPAIN

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Main

Outline:

The Radiographer must know the objective of the study, collaborate in the protocol design and optimization, and inform the patient about the exam and steps to follow in order to maximize his cooperation.

Taking care of all these particular aspects is very important for a successful completion of each project or clinical trial.

Study Description:

Understanding the study’s goals, collecting data from other related studies, knowing who we are working with and the nature of the project all help us to achieve this.

Study Implementation:

Radiographers provide the knowledge and the experience about the console interface because they are more familiar with the parameter combination supported by the scanner. They are involved in designing critical aspects related to the sequence features such as time of acquisition, signal to noise ratio, artefacts, etc.

Ensuring the subject is aware enough about the tasks to be performed in functional studies. Sometimes it means training the subjects to perform the tasks, and obtaining all these results in the shortest time.

Quality Assurance and Control:

Quality Control must be established both in protocol design and throughout the study. This means, first, making a Dummy with the chosen protocol and analyzing this data.

After this data is validated and the protocol established, it must remain consistent throughout the study.

The study must be carried out in a strictly systematic way, avoiding at all costs variability. This lack of consistency could be caused during the acquisition, the positioning of the volunteer, or the slices in the different acquisitions.

Finally we must have our own, on-site periodic control of quality of our scanner. This assures that we are consistently working with similar conditions in the long term.
Legal Aspects:

The radiographer at hand provides the patients with a questionnaire that asks for all their relevant clinical information for our records. This ensures that the volunteers show no incompatibility in order to do the MRI.

At this time the volunteers can also be informed about procedures and how they can cooperate better with us, which in turn helps us to establish a certain level of rapport and trust with them so as to later improve their cooperation.

Personal data protection and individual privacy:

Personal data protection and individual privacy must be guaranteed. Personal data must not be associated to the identity of the volunteer throughout the entire process of these investigational studies or clinical trials, including the post-processing of said data.

The informed consent as well as the personal data protection information is locked away and held in the custody of our organization, only to be accessed by authorized personnel.

According to Spanish law, we are obligated and protected by the Organic Law 15/1999, Personal Data Protection, in the Royal Decree 1720/2007.

Patient Care:

It is important to keep in mind that the most fundamental aspect of our investigation is the information that we provide to the patients, in our case, the volunteers.

We need to help the volunteer feels as comfortable as possible, ensuring that all of the safety measures surrounding the magnetic resonance equipment are taken.

We are also sure to inform the subject of the way that we can communicate with them during the scan in case of an emergency. We also recommend speaking to the subjects during the sequences and informing them of the time that is left to finalize the scan.

Continuous Professional Development:

Due to rapid technological advances, and the necessity to deal permanently with state-of-the-art scientific areas, Continuous Professional Development (CPD) for a Radiographer working in a research team is critical.

Outcome:
In spite of the obstacles that can appear, and I am sure they will appear, the motivation and effort of a team in a well-done and well-coordinated fashion will surely obtain promising results.

We can even find these results to be in the form of an innovative publication, an article in a journal which can impact the scientific world, etc. It is very important that we present these projects in courses and congresses in order to make them known to the rest of the scientific world.

**Current training needs of the radiographer in Spain:**

Radiographers in Spain experience great difficulties when it comes to trying to adapt to the equipment we work with, due to the inferior academic training that exists at this moment. We can not even begin to compare ourselves to our European counterparts.

The educational authorities in our country and our superior strata do not seem to be aware of the necessities that the Spanish Radiographer has. We need to be included in the rest of the radiographers throughout the scientific world, with the same qualifications and the same university training. We need to be part of this great team of professionals that are called ourselves Radiographers.

And we need to count on training that is oriented to investigation and research; something that we believe should be included in the training received while obtaining your degree.

Our ultimate goal, as is the case with any other researcher, is to improve our society with our small or large achievements. We are doing this through our participation in research projects, providing our knowledge and our experience.
Images for this section:

Fig. 2: 3T Scanner

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Fig. 3: Patient Care

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Fig. 5: Quality Control

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Fig. 4: TEAM

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Miami Beach, December 13-16, 2009


• Poster: "ASL Perfusion Quantification for Group Comparisons in Elder People"

Personal Information

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