



Hashemite University leads the way with first “Instant DR” in Jordan

DR Retrofit supports research and education goals of the Faculty of Allied Health Sciences, while enhancing care for staff and students at the university's health clinic.

Case study Hashemite University,
Faculty of Allied Health Sciences/Health Center, Jordan

AGFA 
HealthCare

Case Study

INTERVIEWEE:

DR. ALI AL RADAIDEH, Vice Dean of the Faculty of Allied Health Sciences,
Head of Medical Imaging Department



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– DR. ALI AL RADAIDEH, Vice Dean of the Faculty of Allied Health Sciences

The Hashemite University, in the city of Az Zarqa, continues to find innovative ways to follow its vision of acting as a pioneering educational facility in the Hashemite Kingdom of Jordan. In May 2017, the Faculty of Allied Health Sciences, and its Department of Medical Imaging, achieved another “first”, when they implemented Agfa HealthCare’s DR Retrofit solution: the first Instant DR in Jordan. The Faculty is using the advanced digital imaging technology to support its research, education and healthcare goals.



EXCELLENCE IN TEACHING

Those goals are quite ambitious, explains Dr. Ali Al Radaideh, Vice Dean of the Faculty of Allied Health Sciences. The Department of Medical Imaging, one of the Faculty’s four departments, aims to provide students with a theoretical and practical education that prepares them for a career in the field, where diagnostic technologists are in high demand.

The Department also prepares students who are interested in continuing their medical imaging education abroad, and envisages offering its own post-graduate program in the future. “There are a limited number of people with advanced degrees in this field in Jordan, and there is no in-country program,” says Dr. Al Radaideh. “Students must therefore go abroad for advanced studies, which can be complicated and expensive. Eventually, we want to offer the first post-graduate program in Jordan, which will open up opportunities to many more potential students.”

While the Department of Medical Imaging has received Special Accreditation from the Jordanian Ministry of Higher Education, it intends to add international accreditation as well, which will make it easier for students to complete their post-graduate education abroad. The requirements are stringent, including hiring more educators with PhDs and adding more advanced equipment. The DR Retrofit has a role to play in achieving these various goals.

FROM WET PROCESSING TO DR – IN AN INSTANT

In 2015, the university and Faculty determined to add digital imaging to the wet processing technology being taught and used by the Department of Medical Imaging. "Not only would this maintain our efforts to prepare students for real medical imaging environments, but it would enable us to participate in the worldwide trend to manage and reduce imaging radiation dose, and support our research," highlights Dr. Al Radaideh.

Before initiating the university's tender process, Dr. Al Radaideh investigated the available digital radiography solutions. He looked into the solutions being used by other universities and hospitals, and spoke with peers and experts.

The benefits of digital technology in general were clear: "Reduced image repeats, which also reduces the exam time, the dose, and the wear on our X-ray tube. The ability to work with the exposure contrast, window leveling and more, for added diagnostic value. Reduced costs of consumables – film and chemicals – including from waste: we are dealing with students, after all, who are just learning how to handle the products."

He continues: "Digital radiography is also a greener technology, using less water and eliminating the need to properly dispose of the chemicals. This fits with the university's ecological philosophy, highlighted by the Hashemite Sun Project." (See 'Did you know', on page 7).

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SCALABLE TO FUTURE GOALS

The university decided to tender for a direct radiography (DR) system. "This decision fit with our vision of being a leader, of offering our students the most advanced technologies possible. DR provides faster image viewing and potential dose reduction possibilities. We also wanted a scalable system that would adapt to our future needs and goals."

Based on the tender, the university chose Agfa HealthCare's DR Retrofit. "We weren't necessarily looking for the lowest cost, we were looking for the best value. Agfa HealthCare is very well-known and has a strong reputation in Jordan. With the DR Retrofit, we could immediately implement direct digital radiography, without replacing our existing equipment. We can also add digital detectors: in the future, I would like to have one for each bucky. Right now, we switch our detector between the table and wall buckys."

AGFA HEALTHCARE DR RETROFIT:

- All the workflow and image quality benefits of direct digital radiography
- Maximizes existing imaging investment
- Easy installation, quickly up and running
- Easy to learn to use
- CsI detectors, when used with MUSICA image processing, offer the potential for significant dose reduction¹
- Specially-tuned MUSICA, for gold-standard image processing
- DICOM compatible

¹ Testing with board-certified radiologists has determined that Cesium Bromide (CR) and Cesium Iodide (DR) Detectors, when used with MUSICA image processing, can provide dose reductions of 50 to 60%, compared to traditional Barium Fluoro Bromide CR systems. Contact Agfa HealthCare for more details.



DR RETROFIT SUPPORTS EDUCATIONAL, RESEARCH AND HEALTHCARE GOALS

EDUCATION

In the radiography lab, Department of Medical Imaging students learn the technical skills a radiographer needs, such as patient positioning, image acquisition, patient care and radiographic evaluation.

"Before, we could teach students the theory behind window leveling, adjusting brightness, etc. But with the DR Retrofit they can work on it in a practical way, which enhances their educational experience," explains Dr. Al Radaideh.

"We run a course of quantitative image processing analysis, as well. There are a number of quantitative techniques that aren't possible without digital imaging." DICOM compatibility is also important: "When we receive images as DICOM, we can archive them and then use them for teaching. Students also learn how to convert DICOM images to other image formats and handle them."

RESEARCH

The DR Retrofit is key to the research being carried out by faculty members, explains Dr. Al Radaideh. "There are many things you cannot do using film and wet processing. Our staff is interested in dose reduction and image quality research. I myself am interested in image processing analysis, which relates to quantitative analysis. The DR Retrofit enables us to do more comparisons, retrospective studies, to look into old and new exposure factors, absorbed dose, dose mapping, etc. It has opened up new research perspectives, that not only benefit our own faculty, but other faculties we work with, as well."

MEDICAL CLINIC

The DR Retrofit is set up in the university's medical clinic, which provides health services to staff and students. "We take care of 'basic' imaging: fractures, trauma, chest, skull, limbs, etc. Previously, the radiologists used lightboxes to view the films. But within only a few days, they were very happy viewing images on the screens. It saves them time and the images are easy to read. They can manipulate the images and compare different views. Before, as one radiologist explained, if an exposure wasn't optimal, he might not be able to detect an abnormality. Now, he can work with the image contrast to help improve diagnostic accuracy." The patients are also pleased with the new workflow, which reduces their procedure time, and enables the images to be checked more quickly.

ENSURING THE RIGHT FIT

As a long-term Agfa HealthCare customer, the DR Retrofit project strengthened the university's trust in Agfa HealthCare's professionalism, technical knowledge and support. "The Agfa HealthCare representative actually came to the clinic before submitting their offer, to take measurements, look at the dimensions and distances, and make sure their solution would fit. They were the only vendor to do this," recalls Dr. Al Radaideh. "Agfa HealthCare's response time is always excellent. The engineers are experienced, friendly and flexible: they do whatever is necessary for the customer. With the digital system, they can connect remotely, to fix almost any problem. The licenses are flexible as well."

Dr. Al Radaideh is convinced that the DR Retrofit was the right solution for his faculty and university. "Our vision is to always be a leader, which means you have to keep investing – but wisely. With the DR Retrofit, we have technology that will support our vision, our mission and our philosophy."

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DID YOU KNOW:

- The Hashemite University offers an undergraduate program leading to the B.Sc. degree in Radiologic and Medical Imaging. It teaches both conventional imaging procedures and advanced imaging techniques, such as MRI, CT and PET-CT.
- Faculty members pursue scholarly research in areas including high and ultra-high field MR imaging, image processing and analysis, image signal processing, and radiation dosimetry.
- The Hashemite Sun Project: Hashemite University is a leader in 'green' solar energy research and development. The university's project to generate solar power produces an electrical power capacity of 5 MW, covering twice the university's electricity consumption needs.





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