“Nothing beats the live experience”

Working together to create a ‘Clinical Skills room’, the University of Leeds, Leeds Teaching Hospitals NHS Trust, and Agfa are offering diagnostic radiography students a unique educational opportunity, while helping address a big healthcare challenge in the UK.

CASE STUDY
University of Leeds / Leeds Teaching Hospitals NHS Trust

AGFA

Case Study

INTERVIEW WITH
VOYIN PANTIC, RADIOGRAPHY LECTURER AT THE UNIVERSITY OF LEEDS
HELEN HARCUS, PROGRAMME LEAD FOR DIAGNOSTIC RADIOGRAPHY AT THE UNIVERSITY OF LEEDS

Voyin Pantic

Helen Harcus

"Radiography is not a 'quiet' profession, and it is becoming more dynamic and busier all the time. Our government is investing in imaging equipment, which requires qualified staff to operate. Yet the United Kingdom has approximately 11% deficit in the number of radiographers needed – a shortage that is expected to increase as many reach retirement age. We absolutely need to find solutions," begins Voyin Pantic, Radiography Lecturer at the University of Leeds.

Now, a new partnership between the University of Leeds, the Leeds Teaching Hospitals NHS Trust and Agfa, is taking on the challenge. At its heart is the Clinical Skills room, located in the Seacroft Hospital, just outside the center of Leeds. Fitted with Agfa's top-of-the-line DR 600 X-ray system, this hybrid live/simulation room creates unique opportunities for students to learn, practice and share, while offering the hospital additional X-ray capacity.
It's an outstanding example of academia, hospital and vendor working together to support a robust healthcare system, with a long-term perspective.

Increasing student numbers

For Voyin and his colleague Helen Harcus, Programme Lead for Diagnostic Radiography at the University of Leeds, the ideal initiative by the university to address the shortage of radiographers should do three things:

- increase the capacity of the university's radiography program,
- attract more students with interesting and innovative opportunities, and
- provide training that enables graduates to hit the ground running when they enter the workforce.

"In terms of capacity, we can fit as many students as needed in our university lecture rooms. The bottleneck is the limited availability of clinical placements in real radiography departments," explains Helen. "This live experience is a critical part of training new qualified diagnostic radiographers."

Combining theory and practice

So when Marc Laukam, Key Account Manager Imaging for Agfa, knocked on Voyin's office door, he found an interested audience.

"Marc wanted to find innovative ways for Agfa to promote radiography education in the UK. We came up with the idea of a live X-ray room where students could practice on real patients and develop their clinical skills, but separate from the clinical placement.

While not entirely a new concept, we hadn't been able to turn it into a long-term solution on our own. It needed a real partnership and shared vision between the different players: university, Trust and vendor," explains Voyin.

Although many universities have X-ray practice rooms on-campus, for safety reasons these cannot use radiation or real patients. "And of course, they are missing the element of the hospital atmosphere, where anything can happen, and usually does," comments Helen.

The Clinical Skills room at the Seacroft Hospital adds a unique new practical experience to the education diagnostic radiography students receive from the University of Leeds. "It does more than just close the gap between the non-radiation practice rooms and the 'real-life' hospital placements. It opens up entirely new possibilities, for the students, the university, and even the hospital and Agfa," Voyin adds.

Creating a real partnership

With the idea of the room raised, Helen knew of the perfect location: a former fluoroscopy room at Seacroft Hospital that was sitting empty. “It was a large space, a bit out of the way where it wouldn’t interfere with the hospital’s radiography staff. After all, you want to help, but not be a burden,” she says.

To get the project off the ground, identifying the right people to bring to the table was the next challenge, as Voyin and Helen describe. “This took a few tries, but eventually we ended up with a committed team discussing and negotiating how things would work. Each could see the advantages.”

Then Covid-19 struck. Meetings were delayed and often held remotely, slowing down the project. Yet, despite the interruptions, the Clinical Skills room at Seacroft Hospital opened on 29 November 2021.

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Voyin Pantic,
Radiography Lecturer at the University of Leeds

A true hybrid: simulation and live X-ray

The Clinical Skills room is set up for both simulation and live X-ray, and it is run by a full-time University of Leeds educator, who is also certified for radiography at Seacroft hospital. Four days a week, groups of six to seven students rotate through the room. No two days are the same.

Depending on the lesson for the day, students may be using the dummy, or working with a live patient. “We can do anything we could in an on-campus test room. But we can add the ‘unpredictability’ of working with real patients. After all, when a patient comes through the door, you never know exactly what you are getting. So the Clinical Skills room offers our students the best of both worlds!” says Voyin.

For live X-ray imaging, reception can earmark patients who fit the criteria for the day’s module, such as a patient in a wheelchair, for example. “Since our educator is a highly qualified radiographer, and the room is located in a hospital, the patients always get the high-quality, imaging they need,” adds Helen. “For difficult cases, our educator can also do the X-ray herself, while the students watch. It’s extremely flexible in how we can put it to work.”

But the room also enhances the value of simulations, familiarizing students with different equipment and situations. “Working with and positioning patients is a critical part of the radiographer’s job, so the more comfortable they are with different equipment and scenarios, the better,” comments Voyin. The University plans to furnish the room with a full-body phantom with bony anatomy, as well as a mobile X-ray machine and a non-functioning image intensifier.

Developing skills and empathy

As the room is set up specifically for education, the modules can be based on what students are learning at the moment. First-year students generally practice scenarios involving healthy, mobile patients. Third-year students, on the other hand, are learning to work with patients who can't communicate, for example, or who need to remain prone on their back. "How do you take a lateral X-ray in such a case? By matching the practice in the Clinical Skills room to the theory students are learning in the classroom during the same period, we can create a very robust learning environment," highlights Helen.

Exchanging experiences and best practices

The advantages of the room go far beyond the practical experience with live patients, Voyin explains. For example, students who are involved in placements in different hospitals can come together and exchange what they are learning. "Every radiography environment is unique, so you can have students working or observing in the Clinical Skills room who might say 'We aren't doing it this way at Trust X', or 'I had this experience at Trust Y', or 'Trust Z uses these protocols'. They can then discuss these differences, in a conversation that remains centered around the current module."

Even for training material like a 'GERT suit' or 'gerontology suit', the Clinical Skills room adds new dimensions. "Students put on these suits to better understand the experience of larger or less mobile patients. Before, they would try it on in the classroom. But in the Clinical Skills room they can really experience what it feels like to be a patient, coming into the room with all the equipment, being positioned by the radiographer, and then X-rayed. They can develop a lot more empathy for vulnerable patients. And the other students learn how to assist and position less-mobile patients. Then, all the students can review the experience together, from both perspectives."

The room can also be used to give potential or new students a 'feel' for the radiography atmosphere, and what the job of a radiographer involves, before they even begin classes. And for second-year students, whose year is focused on specialist imaging methods such as CT, MRI, ultrasound and isotope imaging, the Clinical Skills room offers a place to maintain the X-ray skills learned in year 1, which they will return to in year 3.

A top-of-the-line working X-ray room

The core component of the Clinical Skills room is the DR 600, supplied by Agfa. “It was clear we needed a direct radiography (DR) room, as few Trusts still have computed radiography (CR) these days. We have to mirror and match what the students will work with and see in practice,” says Helen.

In the same way, the advanced features and functionalities of the top-of-the-line system contribute to a more extensive education for the students. “With the DR 600, the students can prepare for different equipment situations they may come across. For example, the auto-positioning is very useful, but of course not all X-ray systems offer it. On the DR 600, it can be turned on or off, so the students can experience both ways, and can also see how it affects their work.”

The high-quality X-ray room is also a draw for the Seacroft Hospital. While the room is used 4 days a week by students, on the 5th day the hospital has full use of this top-performance room, significantly increasing X-ray capacity.

The relationship and partnership with Agfa have been crucial to the success

of the program, Voyin and Helen agree. “Agfa provided the DR 600 and trained the staff on using it. In fact, it was very easy to learn to use. Furthermore, Agfa gets back to us right away when we have a problem or question. Support and back-up are excellent,” says Helen.

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Agfa's Contribution:

DR 600 X-ray room

The top-performance, ceiling-suspended DR 600 delivers a streamlined workflow, increased patient throughput, excellent image quality, and potential for dose reduction. It maximizes operator and patient comfort, in a complete and integrated solution offering maximum versatility.

Like all of Agfa's DR systems, the DR 600 is powered by MUSICA®. The MUSICA® Imaging Workstation enhances workflow and productivity, with a single, intuitive interface for smooth, efficient DR imaging. Agfa's gold-standard MUSICA® image processing software provides "first time right" imaging, supporting ALARA (as low as reasonably achievable) principles for radiation dose.

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A model example

The DR 600 Clinical Skills room has become a model for similar practice rooms, even for the University of Leeds itself. “Our postgraduate ultrasound team wants to set up a Clinical Skills room at Seacroft, not far from ours. So there is scope to expand this training area, to create a full ‘education suite’ for the University of Leeds, within the Seacroft hospital, and benefitting both,” says Voyin. “The Clinical Skills room also positions Seacroft Hospital as an innovative training hospital and a desirable employer for new radiographers, and helps put Leeds on the map as center of excellence in radiography training.”

For Agfa, the bidirectional collaboration between industry and academia at a core educational level opens up a new platform for testing innovation in the areas of intelligence and user models, explains Georges Espada, Head of Digital & Computed Radiography at Agfa. “By enabling opportunities to monitor and learn, it offers an incubator for possible future extensions of our AI (Artificial Intelligence) applications. And it will be the source of new white papers and other educational material that will benefit the healthcare sector at large.”

Voyin and Helen see many future possibilities for the Clinical Skills room. “Our clinical assessments, for example, are currently carried out in practice with the radiographers as part of the clinical placements. Instead, we could do a type of structured exam, in which the student enters the Clinical Skills room, picks up a mock request card, positions the dummy, does the X-ray, etc. That would take some of the pressure off the busy radiographers,” describes Helen.

Voyin and Helen also believe that other universities may look at the University of Leeds’s model to enhance their own programs. “We have been able to increase our student numbers thanks to the Clinical Skills room, while providing a unique and valuable learning experience. Students coming out of this program will also have an experience that differentiates them, which will hopefully give them a stronger position for the specific jobs they want. Of course, we and the Trust will be delighted if they decide to stay in Leeds, as they can see we are working to provide radiography excellence,” concludes Voyin.

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Did you know?

- The University of Leeds’ Diagnostic Radiography BSc offers comprehensive training in technical knowledge and professional skills, with first-class placement opportunities and excellent employment prospects.
- The University of Leeds was ranked 1st for radiography in the Times and Sunday Times, Good University Guide 2022, and as the top University in the UK for medical technology in Universities offering diagnostic radiography in the Complete University Guide 2022.
- Leeds Teaching Hospitals is one of the biggest NHS trusts in the country, offering a range of both general and specialist hospital services. 1.5 million patients are treated every year, including more than 200,000 emergency patients. The hospitals employ more than 20,000 staff and work with academia and industry to play a leading role in education, research and innovation.

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