

PHILIPS

Azurion

Testimonial

Philips Azurion delivers
next-generation benefits
for Nottingham City
Hospital

Nottingham University Hospitals NHS Trust is a regional centre for specialty cardiac care. The Trent Cardiac Centre is based at City Hospital and provides a large outpatient service, and a successful primary Percutaneous Coronary Intervention (PCI) service.

Challenge

Delivering a high throughput of complex cases, with a lower staff and patient dose.

Solution

Philips Azurion image-guided therapy platform



Andy Rogers
Head of Radiation Physics, Nottingham University NHS Trust

As a tertiary referral centre, the team at Nottingham University Hospitals Trust provides a cardiac service to around 2.5million people from Nottinghamshire and surrounding counties, delivering approximately 1,200 PCIs every year.

It is an incredibly busy department where most interventional procedures take place in just two interventional labs. When the team were offered the opportunity to trial the new-generation Philips Azurion image-guided therapy platform, they jumped at the chance.

Andy Rogers, Head of Radiation Physics, leads the team of scientists and technologists that support imaging and radiation safety across the Trust. He said: "Because we were first-of-a-kind there was lots that could have gone wrong but the support we got from the global team and from Philips UK&I was exemplary. The project management and attention that we've had has proved invaluable."

Andy described the issues facing the department as one typical of most NHS trusts. "The main challenges faced by the cardiology department at Nottingham are essentially workload and the need to keep the waiting list down with stretched resources," he said. "The Azurion has addressed these challenges mainly by its ease-of-use, but there are also lots of scientific improvements that we can make."

When the Azurion project began, the team had recently upgraded to a Philips Allura with Clarity IQ, and were already very pleased with the improved image quality processing.

Andy explained: "Having this first-of-a-kind Azurion lab next-door to a very modern but previous generation lab, provides us with a very good comparator if we want to conduct impact assessments. We can start changing practice, improving practice and measuring the impact of that change - which is something we often don't do very well in a clinical environment."

He described the Azurion's ability to integrate advanced interventional tools, including third-party equipment, into the operating system, as, "a massive leap forwards."

He added: "If we have stable staffing and we're able to really drive all the workflow benefits from this machine then we might be a bit quicker. It is not that we'd do 20 cases instead of five in a day but each small improvement over the course of a year takes the pressure off, makes for a better working environment and eventually means more patients can get treated. There are lots of incremental improvements we can make that overall could add up to a big improvement."

One of the biggest attractions of the Philips Azurion is the opportunity the technology provides to reduce radiation dose.

Andy explained: "We're hoping to reduce doses to patients mainly because it has a bigger, more efficient detector and that means that we can use less dose to start with. When we might have used more dose in the past to look at small regions and magnify the image, now because of the better image quality we might just be able to do an electronic zoom, as people would do on their mobile phones. This means instead of magnifying the image in real terms, which has a dose penalty for the patients, we can just make it look bigger on the screen so they can see more detail."

Innovative training

The team at Nottingham are full of praise for Philips' three-staged approach to training on the Azurion. Philips trains 'SuperUsers' who are responsible for cascade training to other colleagues. Due to the easy user interface new users pick up the processes very quickly.

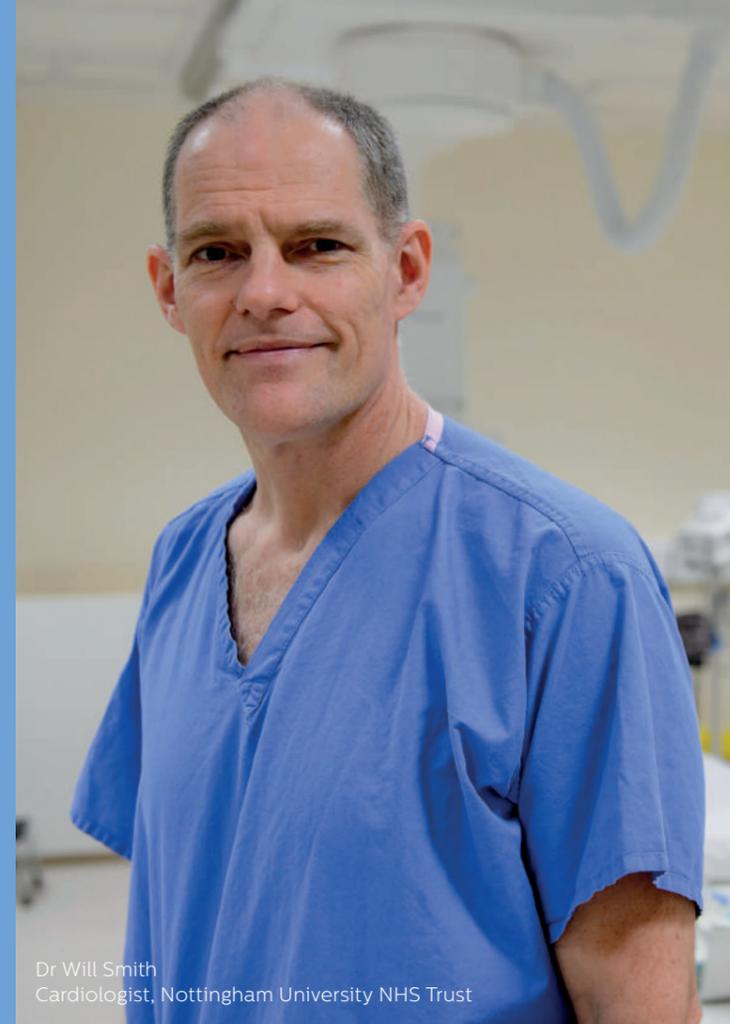
Andy Rogers added: "The training approach in this new project has been both innovative and effective. Coming back after a few weeks, and then again after a few months to test how well that training has been embedded in people - I think is a really good approach."

Cardiologist Dr Will Smith is already making the most of these cutting-edge features. He said: "We undertake some quite complex work and particularly with my interest in chronic total occlusions (CTOs), we were finding that the x-ray dose that the operator received was often quite high. We have had to take a number of measures over the years that I have practiced here, to try to mitigate that."

"One of the key reasons for upgrading the laboratories was to have a more modern system and to be able to reduce the operator dose. Of course, that has an impact on patients as well, because many of them come back over the years for repeat visits. For patients that have one procedure after another, cumulative dose lifetime is also important."

Dr Smith has found that the new system is delivering high-quality diagnostic images with a lower than expected dose. He described a typical complex procedure: "In a 90 minute case with 30 minutes' screening time we only used half a gray of radiation to successfully treat a blocked right coronary artery. And that really means that effectively we do not have to worry about stopping a procedure because we have used too much radiation."

He continued: "We have a big renal unit here and for patients with kidney disease minimising x-ray contrast is very important. The system allows the flexibility for a special protocol, so when I am working I will use fluoroscopy at a lower frame rate. I can make an acquisition at the full 15 frames a second, allowing us to get a high quality before and after picture. The image quality is excellent and the really impressive thing is it manages to achieve that with very little dose."



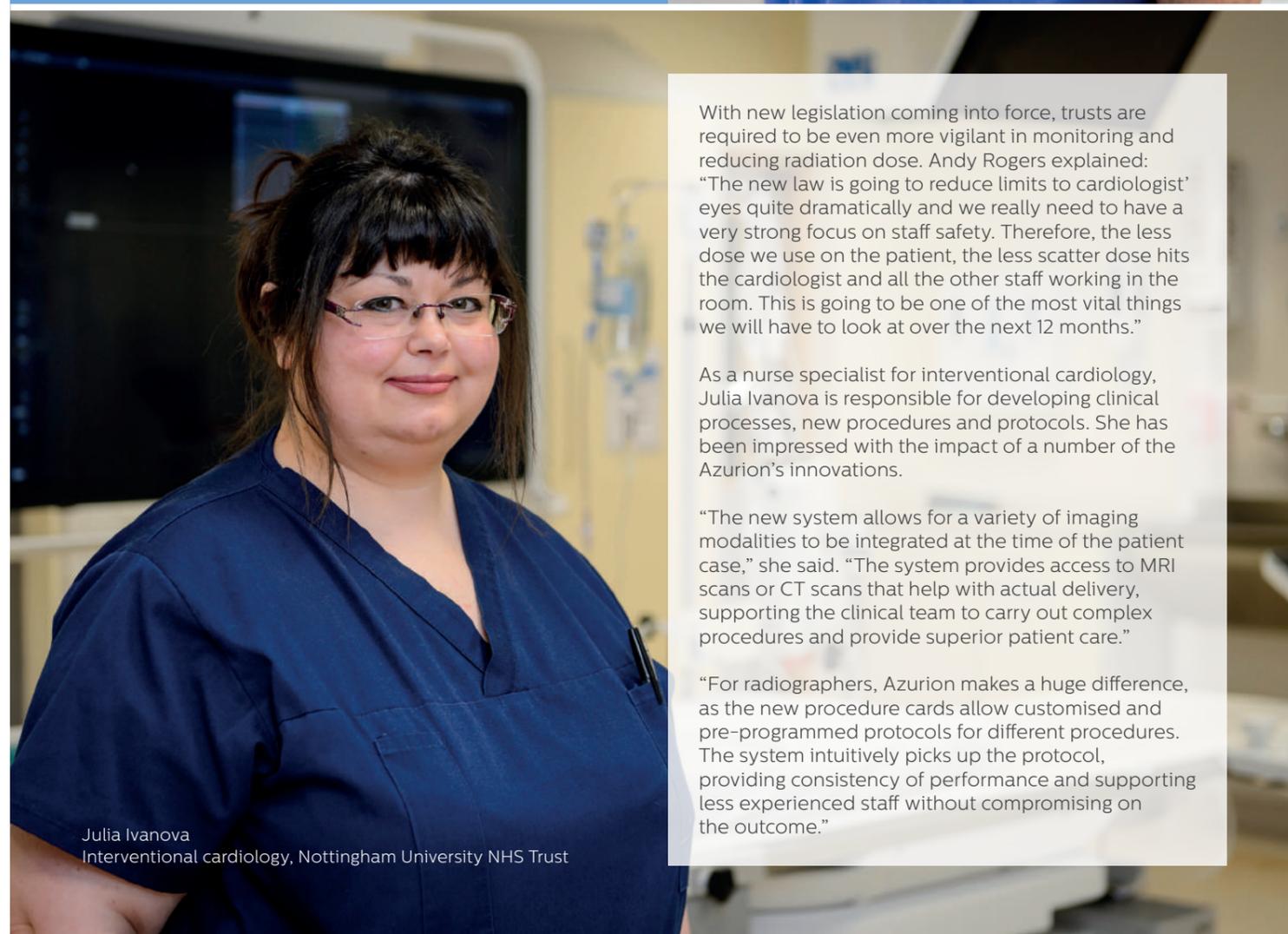
Dr Will Smith
Cardiologist, Nottingham University NHS Trust

With new legislation coming into force, trusts are required to be even more vigilant in monitoring and reducing radiation dose. Andy Rogers explained: "The new law is going to reduce limits to cardiologist' eyes quite dramatically and we really need to have a very strong focus on staff safety. Therefore, the less dose we use on the patient, the less scatter dose hits the cardiologist and all the other staff working in the room. This is going to be one of the most vital things we will have to look at over the next 12 months."

As a nurse specialist for interventional cardiology, Julia Ivanova is responsible for developing clinical processes, new procedures and protocols. She has been impressed with the impact of a number of the Azurion's innovations.

"The new system allows for a variety of imaging modalities to be integrated at the time of the patient case," she said. "The system provides access to MRI scans or CT scans that help with actual delivery, supporting the clinical team to carry out complex procedures and provide superior patient care."

"For radiographers, Azurion makes a huge difference, as the new procedure cards allow customised and pre-programmed protocols for different procedures. The system intuitively picks up the protocol, providing consistency of performance and supporting less experienced staff without compromising on the outcome."



Julia Ivanova
Interventional cardiology, Nottingham University NHS Trust



She notes that the new tableside touchscreen has been a revelation to staff who are familiar with using touchscreen technology in their everyday communications. “It’s possible to access a variety of features that navigate the whole system via the tableside touchscreen,” she explained, “so for example, even where there is no radiographer, it could be manipulated by the medical staff which makes the system more user-friendly.”

Julia also believes that some dose-saving features could also make procedures more efficient. “CardioSwing allows you to pre-programme the angles of the actual investigation and as the system rotates it takes all the pictures with one injection of contrast,” she explained. “It reduces the

procedure time significantly, so definitely will have impact on utilisation of the lab. Not every procedure will be quick and straightforward but for diagnostic procedures, it will help to make a difference.”

Being consulted by Philips, networking and collaborating with other teams and the ability to contribute new ideas to the development of the Azurion, is something that the team have found professionally rewarding. “It has been an interesting project working with Philips,” added Julia, “and we are proud to be one of the first centres to be experiencing the new technology.”

A personalised view

The team has found the ability to adapt the view on the large FlexVision monitors to an individual’s way of working as both clinically effective and practical. Dr Will Smith said: “The big screen is particularly nice when I’m doing coronary work. I like to have a roadmap next to the image I’m working with. It’s very nice that we can adjust those to be right next to each other, just for me. Other people like to have a small reference down in the corner out of the way.”

