

The Philips logo is displayed in a white box with a blue border, set against a background of a large, arched glass entrance of a brick building. The building has "ST MARY'S HOSPITAL" written on the top edge. A blue sign with "Cambridge" and "St Mary's Hospital" is visible in the foreground.

Radiology Operations  
Command Center

Customer story

## Philips Radiology Operations Command Center (ROCC) at Imperial College Healthcare NHS Trust

### Who

Philip Gregory  
Clinical Director (London Imaging Academy) and Practice Educator at NHS Trust

David Tao  
Clinical Service Manager, Imaging (current)/MRI Modality Lead, St. Mary's Hospital (former)

Katie Pantling  
Practice Education Facilitator

### Where

Imperial College Healthcare NHS Trust,  
London, UK

### Challenge

Imperial College Healthcare NHS Trust faces challenges common to many healthcare organizations today: having enough skilled technologists across sites to meet the demand for imaging exams, particularly for more complex exams such as cardiac MR.

### Solution

The Trust conducted a 12-month pilot with the virtual imaging support solution ROCC to assess whether its use provides a scalable solution that could reduce training time, increase capabilities and capacity, and reduce scan time and recalls.

# Increasing NHS cardiac scanning capacity using virtual training

**The Hammersmith and St. Mary's Hospital sites in the Imperial College Healthcare NHS Trust have high patient volumes, six MR scanners connected to ROCC with three command centers (two fixed and one non-fixed) and MR services that vary by site. Each site, both the Acute site at St. Mary's and at the CDCs (Community Diagnostic Centers), face capacity pressures, particularly with regard to cardiac MR. Workforce pressures include high staff turnover for positions, a shortage of experienced staff, and inefficient use of medical and non-medical staff time.**

ROCC is a multi-vendor, multi-modality, multi-site virtualized imaging support solution. It is backward-compatible, safe and secure and can smoothly connect imaging experts in a command center or workspace with technologists at scan locations across their organization. A technologist near the console scanner can receive guidance from a senior or more experienced colleague (expert user) in real time even if they are on separate floors or in entirely different locations.

### Putting ROCC to the test through a pilot study

In conducting a pilot study of ROCC, Imperial was hoping to reduce training time, increase radiographer capabilities and increase the proportion of radiographers trained in cardiac MR scans in general and particularly in sites that lost this capability during the pandemic period. The Trust was interested in assessing if the remote training experience is effective and scalable across the Trust and, ultimately, across its' integrated care systems. Metrics included the ability to reduce the average scan time for cardiac MR scans and the number of recalls, rescans and repeated sequences.

# Pilot program goals

ROCC was assessed during this 12-month pilot to see if it could help meet the cardiac scanning goals at sites in the NHS Trust.

- ↓ Reduce average scan time for cardiac scans
- ↓ Reduce the number of necessary recalls, rescans and repeated sequences
- ↓ Reduce training time
- ↑ Increase radiographer capabilities
- ↑ Increase the number of radiographers who are trained in cardiac MR

## Results from use of ROCC for training at Imperial College Healthcare NHS during the pilot<sup>1</sup>

**9%**  
increase  
in total scanning  
throughput<sup>2</sup>

**2x**  
the number of  
radiographers trained  
and in half the time (10 weeks  
vs. previously required 20  
weeks)<sup>3</sup>

**91%**  
increase  
in cardiac MR patients  
scanned in the evening shift<sup>3</sup>

**0%**  
exam recall rate  
when ROCC was  
involved<sup>4</sup>

**50**  
additional cardiac  
patients scanned  
due to higher percentage  
of staff trained in cardiac  
MR opened capacity<sup>4</sup>

**7**  
minutes faster  
average scan time for  
routine Cardiac MR exams  
reduced 11%<sup>2</sup>

**6**  
minutes faster  
average scan time for  
complex MR Stress  
perfusion exams  
reduced by 9%<sup>2</sup>

**38%**  
more consistent  
scan times with 9 min  
reduction in  $\sigma$ (SD) in  
complex Cardiac  
Stress MR<sup>2</sup>

1. Data and results based on NHS England VST Pilot Program.

2. Average MR scan time decreased by approximately 2 minutes per scan. For cardiac MR, scan duration decreased by 11% (7 minutes) and for cardiac stress MR it decreased by 9% (6 minutes) from radiographers trained via ROCC. During the pilot 40% of the exams involved removal of unnecessary sequences.

3. In addition, ROCC enabled training of twice as many radiographers in the same period of time (10 radiographers trained in 10 weeks, when usual training would have required 20 weeks). This training increased facility capacity, allowing for a 91% increase in cardiac patients scanned in the 17:00-20:00 shift (271 cardiac patients scanned during this shift in 2023 vs 142 in 2022). Results from July through December.

4. The pilot demonstrated a 0% exam recall rate when ROCC was involved. Historically, all cardiac patients have been scanned on two out of four scanners at the sites. The use of ROCC during the pilot allowed an additional 50 patients to be scanned on a third scanner from July through December 2023. This was made possible by a higher percentage of staff trained in cardiac MR.



Philip Gregory, Clinical Director (London Imaging Academy) and Practice Educator, Imperial College Healthcare NHS Trust.

## Creating value for radiographers and for patients

Philip Gregory is a practice educator, facilitating postgraduate education and training, in addition to developing an imaging academy for NHS England. He notes the need to be sure that the NHS radiographers are taught to the highest possible degree to be able to get the most from the equipment and achieve the best outcomes for patients. He says his real challenge is how to introduce education, training and support in busy environments and how to make best use of the most skilled radiographers of NHS. He has seen the value ROCC brings across scanning, particularly in cardiac MRI.

**“Because we’ve been able to essentially duplicate our control room, it means we can have our expert sitting at the command center, and then rather than having one trainee sitting at the control panel itself at the scanner, you can have two trainees,” he says.**

He notes the effect that this is having, saying, “We’ve roughly doubled the number of staff that we can train in the same period by using ROCC. A super user can come in, access the command center and within a minute they’ve got viewing access to multiple scanners across multiple sites, and that’s pretty unique.”

ROCC is also worthwhile for expert radiographers because it promotes their expertise and gives them new opportunities to effectively share their knowledge with colleagues in the sector, in the region and around the country. It’s valuable to patients because time saved during a scan is less time spent inside the scanner. Gregory points out the benefit of staff retention as well. “It means that all radiographers have the opportunity to upskill, so we keep hold of them,” he says. Because ROCC is vendor-neutral, it can be used to efficiently train radiographers on different systems in different locations, which aids workforce mobility within NHS.

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Philip Gregory



**David Tao, Clinical Services Manager, Imaging, Imperial College Healthcare NHS Trust (Current). MRI Modality Lead, St. Mary's Hospital (Former).**

## Training that is supportive

Currently Clinical Service Manager for imaging at Imperial, previously David Tao was managing an MRI department at Imperial during the pilot program.

**“ROCC allows NHS to train in way that allows radiographers to be independent so they’re able to flourish and unlock their potential professionally.”**

A crucial aspect to Tao is that training with ROCC is very similar to training side by side, except that it’s faster and more streamlined. “The quality and the standard are the same,” he says. “What is different is the speed at which we train, and the efficiency.”

“I think the most unexpected thing for me with this technology is how easy it is to use. I could log on, I could view, I could supervise. It is actually quite a user-friendly technology. Speaking for the colleagues who have used it as a trainee, they felt a lot of support from the super users,” he says.

**“ROCC allows NHS to train in way that allows radiographers to be independent so they’re able to flourish and unlock their potential professionally.”**

David Tao



Katie Pantling, Practice Education Facilitator, Imperial College Healthcare NHS Trust.

## Spurring engagement with training in a meaningful way

Katie Pantling, Practice Education Facilitator, works with undergraduate students across sites at Imperial College Healthcare NHS Trust. Her goal is finding ways to facilitate training and placements to accommodate the increase in the number of students across the universities. Because undergraduate training tends to focus on plain film X-ray, she is interested in enhancing training in MRI to help meet the need of the Trust. She values use of ROCC in helping the Trust create an environment outside of the clinical environment where she can effectively train students in the complex modality of MRI.

Pantling says, "I've been able to sit with three different scanners in the background and I can help three different colleagues as they go through their scans....I do think it has a positive impact on the confidence of the radiographers that are training. Because I've got three different screens, there could be a metallic artifact on one of my patients. Then I can say, 'OK, have a look at this. Now tell me what's on this image. Let's have a talk about it. Have a look at my three scanners. One of these patients is moving. Tell me which one and tell me how you know.'"

"We can talk about the physics, and we can talk about the weightings because there's almost guarantee between three different screens that there will be a T2 on one of them, a T1 on one of them and if there isn't there'll be another one in 30 seconds. So, it's quite good as a teaching tool where in real time there's enough that's changing and enough for me to talk about, so that we can really get into what can be a very difficult modality for them to understand. In terms of the technology, the physics and the anatomy, it's just so different than plain film."

Pantling values the richness of the content that is available when she is teaching while scanning is happening in real time. She says, "I find--both from my point of view and the students' point of view—that they're quite dynamic teaching sessions. It's not me in front of a PowerPoint presentation, going through structured notes. It feels a lot more genuine, it feels a lot more exciting, it feels a lot more, 'Oh, look at this, this is interesting, have a look, there's a pathology here, tell me what you think is unusual. Okay, we've got a really nice image that's just come up. Let's talk about the anatomy.' And I think that's really helped with their engagement."

**"I think it's a much more beneficial use of our more experienced staff's time being able to spread them across the whole department rather than localized across just one scanner and examination."**

Katie Pantling



## Conclusion

Use of ROCC has allowed Imperial College Healthcare NHS Trust to increase its cardiac MR scanning capabilities, while benefitting less experienced radiographers, radiographers with a great deal of experience, and – most of all – patients.

**To find out more about what ROCC could do for you, contact your Philips representative, or visit Philips-ROCC Solution.**

Results are specific to the institution where they were obtained and may not reflect the results achievable at other institutions.

Disclaimers: ROCC is not to be used without a trained and qualified user at the scanner. All scanner provided (safety and performance) instructions shall be adhered to. ROCC does not replace any of these.

ROCC is intended for remote support only and does not have a medical purpose.

Minimum hardware and software requirements apply.

Minimum IT specifications apply.



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