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# Radiology Operations Command Centres: Tackling healthcare inequalities

Philips United Kingdom and Ireland

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# The challenge facing UK healthcare

**The UK's health system is facing unprecedented pressures.** As we move into managing a long-term relationship with COVID-19, radiology departments are confronted with an ageing population with increasing co-morbidities, a challenging workforce crisis, significant patient backlogs and increased pressures on imaging services.

According to The Royal College of Radiologists (RCR) Radiology workforce census<sup>1</sup> “without significant investment in workforce, equipment and new ways of working, patients will suffer; diagnoses will be further delayed, and fewer patients will benefit from life-saving minimally invasive interventional radiology.”

The ambitious plans set out by the Department for Health and Social Care<sup>2</sup> to introduce legislation that enables the speed of innovation and integration of health and care services in England is a welcome step forward.

However, as we look to support the NHS in its digital transformation, these challenges require more immediate action. Difficulties with training across radiology teams and variances in practice across facilities have intensified the need for innovative and virtual imaging training and delivery capabilities.

Further, Philips' research<sup>3</sup> in partnership with Imperial College Consultants (ICON) showcased how the COVID-19 pandemic has emphasised existing healthcare inequalities across the UK, particularly as the pressure on imaging services builds.

The report suggests recommendations for embracing new approaches to help address these disparities – namely, the introduction of a network of elective Community Diagnostic Centres (CDCs), providing access to diagnostic centres closer to patients' homes.

The UK is at the forefront globally when it comes to setting ambitious sustainability targets to safeguard the health of our planet, for example the NHS is the first healthcare system in the world to commit to net zero. We should rival these aspirations in developing a world-leading healthcare model that not only tackles the challenges we currently face, but also enables more people to live longer, healthier lives, both now and in the future.

Philips believes that through the implementation of new programmes, new technologies and new patient pathways, we will future proof healthcare in the UK and Ireland.





## Piloting new methods of healthcare delivery

Professor Sir Mike Richards' Independent Review of Diagnostic Services for NHS England highlighted that new community based patient pathways are required to accommodate the major expansion in diagnostic services required over the next five years, particularly as the potential for expansion on acute hospital sites is very limited<sup>4</sup>.

This is crucial when NHS England's February 2021 statistics<sup>5</sup> compared with February 2020 showed the total number of patients waiting six weeks or more for 15 key diagnostic tests increased by 297,800, while the proportion of patients waiting six weeks or more increased by 25.7%. This is an understandable but concerning increase driven by the pandemic.

At the time of writing this report, hospital waiting lists have reached a new high of 4.7 million people, with almost 390,000 of those reported as waiting for over a year. This is a 240-fold rise on the year before, when just 1,613<sup>6</sup> people waited more than 12 months.

While new methods of healthcare delivery are needed to help clear peak demand, there is a significant opportunity for new patient pathways to manage the ebb and flow of demand in future years. Working with newly created Integrated Care Systems there is an incredible opportunity to innovate in radiology. Through greater adoption of AI-enabled technologies, hospitals can process, prioritise, and generate an accurate diagnosis in a notably reduced time.

By piloting newer methods of healthcare delivery, we have the potential to not only optimise operations and resource but also support the drive to alleviate healthcare inequalities and improve the health of the nation.

# A new vision for radiology testing

As radiology services across the UK continue to navigate clearing backlogs and begin preparations to manage increasing demand, Philips has pioneered a first-of-its-kind Radiology Operations Command Centre (ROCC) to provide an additional layer of remote, senior specialist support to radiology services across the country. ROCC delivers a new level of interoperability between radiology departments, enabling a multi-modality (MR and CT) virtualised imaging capability that connects the entire imaging network.

As a multi-vendor virtualised imaging solution, ROCC connects imaging experts at a central command centre with radiographers and onsite staff in locations across an entire enterprise for real-time, over-the-shoulder collaboration and support. ROCC enables remote access to scanners across the whole network at any given time.



A key benefit of ROCC is the compatibility of its remote scanner connections with older, legacy imaging platforms, allowing Trusts to create a 'hub and spoke' model for imaging within their existing base of devices. Given one of the biggest challenges facing the NHS is to continue to meet the best standards of diagnosis and care with limited resources, being able to connect legacy devices to the network without the need for upgrade, improves efficiency for the Trust and significantly reduces upfront costs.

Research shows that patients in the UK are potentially missing out on cutting-edge, life-saving surgery. Almost half (47%) of NHS Trusts and health boards do not have the staff or transfer arrangements needed to run safe 24/7 radiology services.<sup>7</sup>

ROCC is well-placed to maximise the value of experienced staff, by creating access to a network of imaging experts at its command centres in support of radiographers at remote scanner locations.

Similarly, as the NHS continues to tackle the testing backlog caused by COVID-19 and the subsequent restrictions this has placed on scanning services, ROCC presents a new opportunity for radiology services to expand access and improve quality to mitigate the potential of a 'postcode lottery' for screening. Research commissioned by Philips and conducted by Imperial Consultants (ICON) at Imperial College London<sup>8</sup> found the COVID-19 pandemic has emphasised existing healthcare inequalities and the disproportionate impact to people living in the most

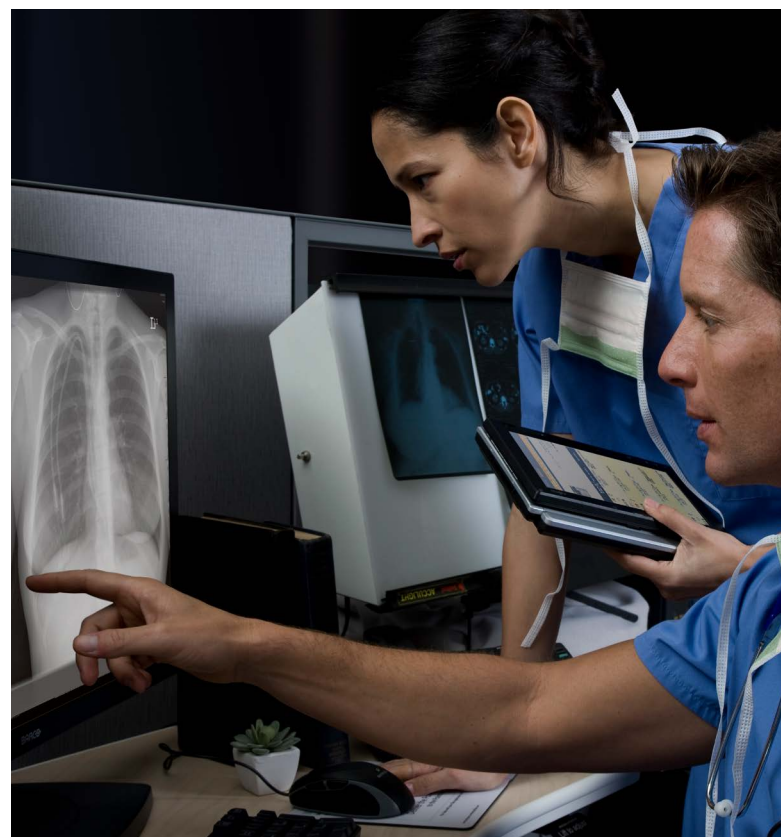
deprived areas of the UK. Subsequent recommendations accompanying the research outlined the need for further digital transformation to improve interoperability.

ROCC delivers this interoperability and fosters a spirit of collaboration. The healthcare sector is faced with a unique opportunity to safeguard business continuity at

this challenging time for the health service and improve workforce engagement when the need for radiology expertise is at an all-time high.

“Through this approach, the NHS can rethink their traditional operational model by leveraging their expert talent, harnessing the virtual and digital benefits of ROCC. Philips’ vendor agnostic approach means hospitals are not limited by what systems they have, providing more opportunities for collaboration and expertise sharing across the network. With supporting technology like ROCC, the NHS can have greater assurance in producing first time right scans meaning greater confidence in diagnosis.”

**Stephanie Holden**, Managed Services Director, Solutions Centre of Excellence, Philips UKI



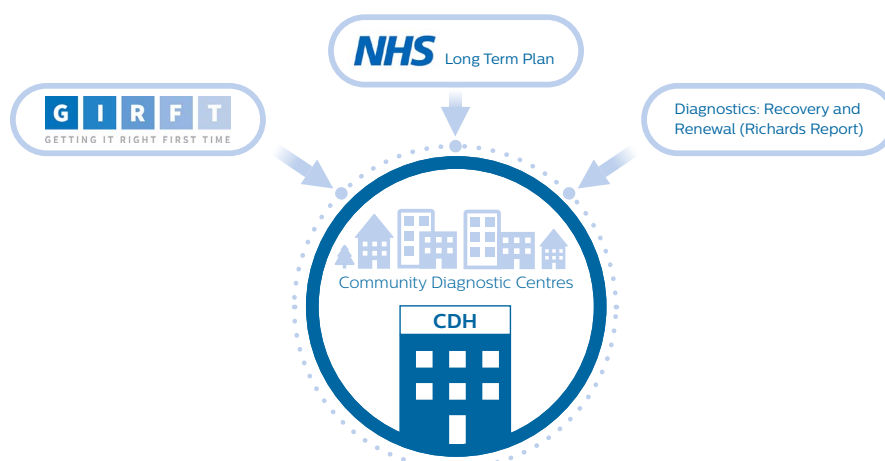


## Expanding access, improving quality and reducing costs

ROCC is central to reducing healthcare inequalities across the UK, but delivering it will take dedication, determination and collective resource and partnership across government and industry. Addressing healthcare inequalities requires innovation to deliver diagnosis and care in new ways – at the heart of local communities.

When it comes to diagnostic testing, people living in communities where social deprivation may be a reality can be faced with longer waiting times. There is an added complexity that a higher percentage of the local population may be averse to entering hospitals. This trend was exacerbated by the pandemic when fear of catching the virus was high. Following the first national lockdown in 2020, 50% of British adults reported that they were reluctant to attend a hospital appointment, driven by their fear of contracting COVID-19<sup>9</sup>. As transmission rates continue to fluctuate in 2021, there is a strong risk that reluctance to access care if COVID-19 is present will continue to remain in some areas.

Moving diagnostics into community-based locations – through a network of elective Community Diagnostic Centres (CDCs) as previously proposed by Professor Sir Mike Richards Independent Review of Diagnostic Services for NHS England<sup>10</sup> – will reduce pressure on hospitals and enable patients to be tested in a place of convenience such as their local high street. It is believed by many across government, industry and academia that doing so will improve levels of confidence in receiving required diagnostic services.



Added access enabled by ROCC will reduce the waiting times for people in deprived communities. Given the Richards Report found “demand for almost all aspects of diagnostics has been rising year on year and for some diagnostic modalities demand was outstripping capacity before the pandemic” ROCC can be used to help meet this demand.

The inability of patients to access diagnostic services when required is a major contributor to people falling further unwell, impacting their quality of life and a clear symptom of healthcare inequalities. Reducing health inequality means giving all individuals an equal chance to a live a long and healthy life, regardless of where they live.

CDCs will provide patients with treatment and services that are accessible and will extend the life expectancy of the more vulnerable members of our society. Further, moving non-urgent care into the community allows hospitals to become more specialist and use funding more efficiently, adding value to their patient care. ROCC could be an enabler in designing a healthcare system built on value-based outcomes, rather than a model in which funding is calculated on activity per hospital. We now have the chance to rethink the funding equation for patient treatment and use ROCC to enable value-based healthcare outcomes.

### The model enables the following outcomes:



Extend access to complex procedures and specialty subservices, adding an additional layer of senior specialist support



Enable radiology teams to expand or make their scope of service hours (nights and weekends) more flexible and convenient for patients



Reduce recalls and repeats due to improved image quality and additional expertise using the ROCC service, enabling radiology services to deliver ‘Right First Time’ diagnosis and drive quality and value



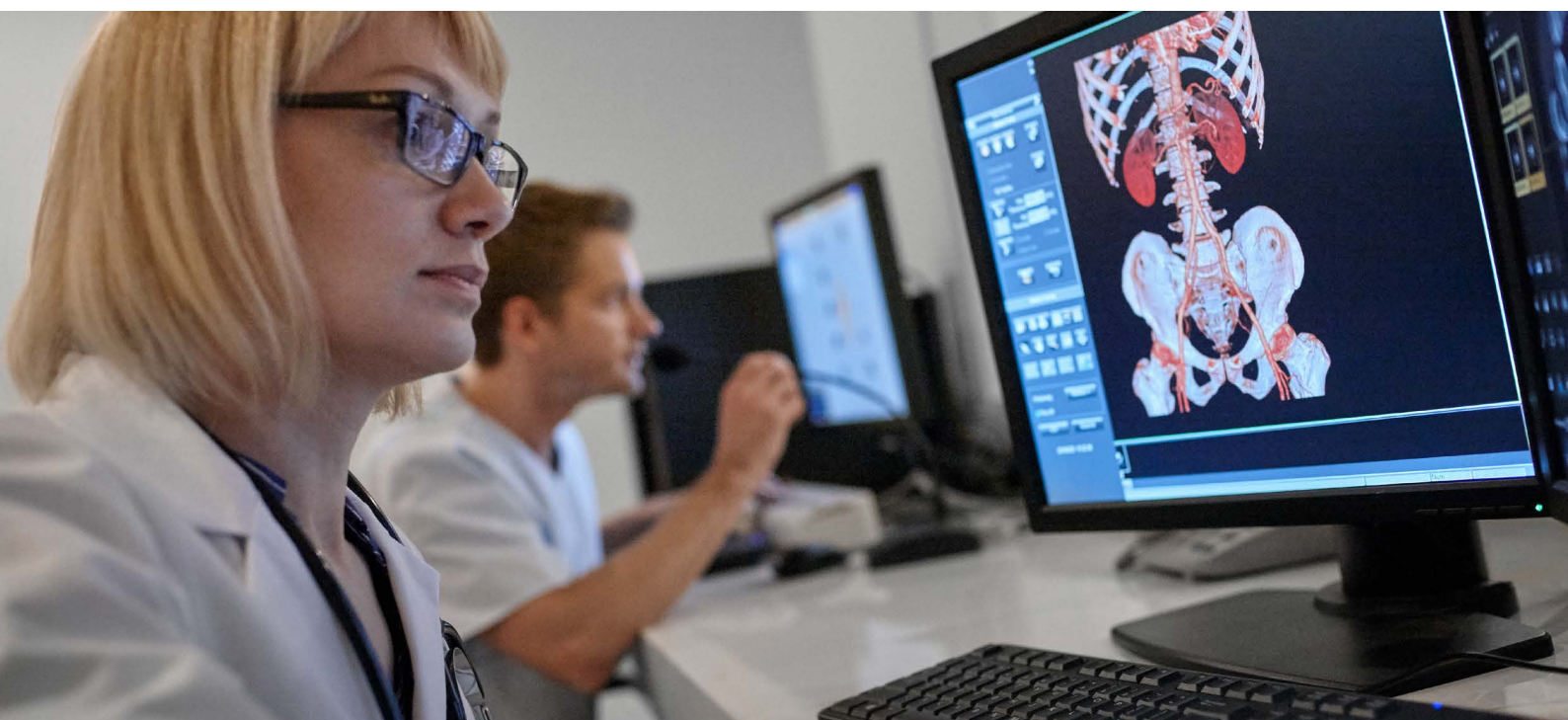
## Safeguarding business continuity

ROCC helps radiology services reduce disruptions to imaging services resulting from staffing schedules and unforeseen circumstances, ensuring business continuity of services with both routine and more complex procedures.

This value can be delivered immediately because ROCC is multi-vendor, meaning it can be plugged in and used irrespective of the technology and systems used by a Trusts' radiology service. The CT and MR scanner

connections are compatible with older imaging platforms, allowing Trusts to operationalise a 'hub and spoke' model for imaging within their current install base.

ROCC also enables real-time collaboration and virtual imaging assistance, even when a patient is on the scanner table, breaking down communication barriers and helping maximise value of staff, without compromising imaging quality, privacy, safety or security.



“We are already deeply involved with using remote operation of our scanners. We use this to distribute expertise. Our cardiac imagers on one site are helping at other sites. Junior radiographers running a problematic prostate MR scan have the opportunity to be supported by more senior colleagues at a central site. We also use ROCC to centralise training. We bring colleagues in and let them watch multiple exams on the same day from the central site.”

Explained CTO & Director of Imaging, **Dr Lawrence Tanenbaum.**



“ROCC was able to help us identify a critical finding, an acute brain tumour, when a junior radiographer reached out to me from a different centre for assistance with something they saw on an MRI scan. This all took place in real-time, while the patient was on the table. We were able to notify the patient’s referring doctor whilst the diagnosis was taking place so the patient could be cared for immediately.”

**Clinical Manager**, Diagnostic Imaging Chain.

# Supporting the workforce: engagement, retention, and satisfaction

We must ensure that healthcare professionals are fully supported in meeting the challenges they face today, so it's vital that innovations and advancements in radiology and imaging bring value to all aspects of these services.

With radiology services facing challenges around skills and staff shortages combined with pressure created by the pandemic, ROCC provides a critical connected network that both strengthens radiology networks and improves the quality and delivery of services.

Tele-augmentation of available expertise and resources addresses staff shortages, currently estimated to be 3,500<sup>11</sup> radiographers. ROCC's telepresence capabilities can be used to connect radiographers with imaging experts, in any location, in real-time. This collaboration provides radiographers with greater access to senior and specialist support. This is highly beneficial for staff development whilst providing insightful guidance during more difficult imaging procedures.

ROCC strengthens the role radiographers can play in their network. The remote expert will allow radiography staff to perform scans with more confidence, precision, speed and quality. By improving imaging exam quality,

ROCC can also help decrease the number of recalls or repeat scans – which are often costly and detrimental to the patient experience. This more connected and collaborative approach helps to address the variabilities that currently exist in imaging expertise and can improve procedure quality across locations.

The ability to remotely assist an onsite radiographer through the ROCC model helps to drive significant efficiencies for radiography teams, significantly helping to counter the 'burn out' which is prevalent in the radiography sector today. 'Burn out' is a state of emotional, physical and mental exhaustion caused by excessive and prolonged stress on radiographers due to a lack of time, operational inefficiencies and staff shortages within the industry. Therefore, the greater levels of support, accuracy and flexibility that ROCC delivers means that it can play a key role in enhancing the wellbeing of staff.



The pandemic has highlighted the need for a new approach towards working practices in radiology and imaging. During this time ROCC can play an important role in connecting radiographers who can no longer meet in person. It allows for those who may be isolating to continue working in a safe setting whilst also supporting broader areas of business continuity and development that have otherwise been stopped or hindered by the pandemic.

In the future, remote image acquisition may provide greater flexible working arrangement for staff who prefer to work remotely and flexibly from their homes for family or personal reasons. The expansion of more flexible and remote working will also help in the recruitment and retention of more staff and could even lead to retired professionals re-entering the workforce.



## Enhancing the UK's healthcare system for a brighter future

ROCC is a key example of how innovation can be utilised to support healthcare providers in meeting the healthcare needs of the nation. The healthcare system across the UK and Ireland will change forever following the pandemic and ROCC can be a crucial positive element of future transformations.

Philips believes that ROCC cannot be delivered in isolation. Helping communities to address their health will require a collaborative effort from industry, government and healthcare practitioners to encourage genuine interaction and engagement with the centres.

ROCC should therefore be part of a longer-term approach that involves changing the way the NHS delivers healthcare and will set patterns that other countries can follow, demonstrating the UK and Ireland as successful trailblazers around the world.

It is crucial to move from cure to prevention, from hospital to community, from centralised to local, from incentivising on activity to incentivising on outcome. ROCC will support the vision to genuinely move care into the community as well as the key objectives to reduce healthcare inequalities and improve the health of the nation. Philips UK and Ireland looks forward to working with partners across healthcare to transform diagnostics and care in communities across the country.

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