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Innovating in diagnostics with new models of out of hospital care

Partnering with healthcare providers to pioneer
Community Diagnostic Centers (CDC) across the UK

Innovating in diagnostics with new models of out of hospital care

There is a tension at the structural center of healthcare today. As challenges rise, more pressure is exerted on hospitals; bricks and mortar environments that were not designed to manage all of healthcare's needs in the 21st century.

Fast forward to 2021 and hospitals are currently delivering care with significantly limited resources and staff are under pressure to treat more patients with chronic diseases. According to NHS figures¹, hospital waiting list numbers in England have doubled since last year and are expected to continue to rise, due to aged equipment, workforce shortages and COVID-19 pressures.

The time has clearly come for innovative new models of care, starting with out-of-hospital solutions; a need that has also been identified in the NHS Long Term Plan and the Report of the Independent Review of Diagnostic Services for NHS England as conducted by Professor Sir Mike Richards, both of which can be viewed as a call to action for industry and the NHS to work together.

This case for more care provision to be placed outside of a hospital setting is, of course, not a new one. Yet it's a cry that has gained new urgency due to the COVID-19 pandemic, the global health crisis that has accelerated change in all sectors, including healthcare.

“And yet, where to start? According to a new strategic partnership between Philips and an independent healthcare provider, a focus on diagnostics innovation represents the fast start opportunity to structurally embed out of hospital care and enable a significant leap forward in patient-centric, future forward care.”

Jeevan Gunaratnam, Director of Independent Sector & Community Diagnostics at Philips.



What is the NHS Long Term Plan?

The NHS Long Term plan will drive the NHS in England to introduce a new model of care focused on providing patients a range of options, better support, and joined-up care at the right time in an optimal care setting.

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Diagnostics is central to efficiency of care.

Diagnostics is central to effective care and yet there are increasing radiology challenges. Ageing equipment, an increase year on year in diagnostics demand for long term conditions, COVID-19 implications and workforce shortages all combine to paint a grim reality. Chronic workforce shortages permeate virtually all parts of radiology departments, and healthcare more broadly. The world needs an extra 18 million health workers, roughly a fifth of its current capacity to care².

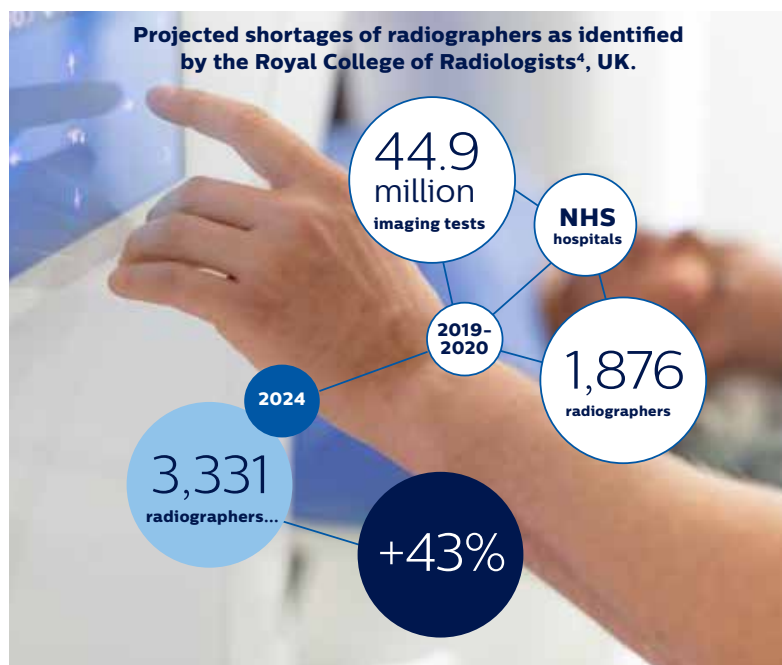
Radiology is of particular concern. The massive growth in the use of medical imaging and interventional techniques has resulted in a huge gap between the demand and supply of radiologists. There is too much work and too few people to do it. Between March 2019 and March 2020 NHS hospitals in England performed 44.9 million imaging tests, including 23.2 million X-rays and 10.3 million ultrasounds, putting diagnostic care at the center of all patient experiences³. Worryingly, the Royal College of Radiologists⁴ asserts that the UK radiology workforce is currently understaffed by 1,876 radiographers, with this understaffing forecast to rise to 3,331 (43%) by 2024. This widening gap will be driven by increased demand for diagnostic imaging and interventional procedures⁴.

“Diagnostics is at the center of every patient pathway. If you see a doctor about anything, it will usually need a diagnostic intervention and, in the case of diseases like cancer, there are repeated interventions. If you have a backlog in diagnostics, you have a backlog in care and the way you treat patients,”

Jeevan Gunaratnam, Director of Independent Sector & Community Diagnostics at Philips.

He continues: “Imaging demand will only increase in the future driven by a rise in chronic diseases such as diabetes, obesity, COPD and cancer. That’s created this steady state of increase in demand for imaging modalities. What we see is a steady 6/7% YOY increase⁵.”

The impact on a hospital’s operating costs of radiology workforce shortages is massive: in 2018 the NHS spent £116 million to outsource patient scans in response to the shortage of radiologists. Outsourcing costs doubled in three years in the U.K. (to 2018) from £58 million to £116 million⁶.



COVID-19: the urgency to reimagine healthcare

The need to address diagnostics innovation is one of the key lessons to emerge from the COVID-19 pandemic, when the demand for diagnostics spiked and increased delays to cancer diagnosis and treatment. Disruptions led to about 2.4 million people waiting for cancer screening, treatment or tests, according to Cancer Research UK⁷.

It also fast-tracked the impetus behind new models of care which envisaged diagnostic services – or hubs – outside of the hospital walls. In order to prepare for the future of healthcare, new services built around MRIs, CTs and PET scans can live “off campus” leaving critical and specialist care onsite.

2. WEF, ‘5 Ways to Bridge the Global Health Worker Shortage’ <https://www.weforum.org/agenda/2019/07/5-ways-to-bridge-the-global-health-worker-shortage/>
3. Document template (england.nhs.uk) NHS Diagnostic Imaging Dataset 2019-20
4. The Royal College of Radiologists, Clinical Radiology Workforce Census Report 2019 https://www.rcr.ac.uk/system/files/publication/field_publication_files/clinical-radiology-uk-workforce-census-2019-report.pdf
5. BM2025Pu-item-5-diagnostics-recovery-and-renewal.pdf (england.nhs.uk) sec2.5
6. The Royal College of Radiologists, Clinical Radiology Workforce Census Report 2019 https://www.rcr.ac.uk/system/files/publication/field_publication_files/clinical-radiology-uk-workforce-census-2019-report.pdf
7. Cancer Research UK, <https://www.cancerresearchuk.org/about-us/cancer-news/press-release/2020-06-01-over-2-million-people-in-backlog-for-cancer-care>

Healthcare's steady shift away from the hospital as the pressure grows on health systems, is also a result of changing patient behaviors and the consumerisation of care. For example, proximity to care is becoming a key demand. Around 50% of healthcare-related Google searches on mobile devices include the words "near me", reinforcing that healthcare is now about service and convenience⁸. Patients who now understand themselves to be consumers, are demanding proximity.

Jeevan Gunaratnam explains: "The out of hospital care model wasn't always viewed as practical, but the pandemic has been the accelerator that will make new diagnostic care models workable in the future. We need to focus on cancer, as one in two are developing cancer in their lifetime⁹ ... and we need an educational program to address healthcare's workforce issues."

Partnering in diagnostics through Community Diagnostic Centers

With government funding and the recommendations for public-private collaboration as evidenced by Professor Sir Mike Richards' report, total market commitment has started to, at last, fall into place.

One such example is the way that Philips is partnering with healthcare providers to pioneer Community Diagnostic Centers (CDC), together with the NHS. This accelerated out of hospital model looks likely to transform current care models by bringing "first time right" medical imaging and other treatment services closer to where patients reside. "One stop shops" in the community, CDCs are modern facilities with evidence-led design and the best technologies intended to improve patient outcomes and patient and staff experiences.

Able to host training academies to support learning and development, the ultimate vision is that these centers will specialize in providing services that meet cardiovascular, fitness, wellness and health themes across Radiology, Cardiology, Oncology, Respiratory and Sleep health spaces. They could also support further NHS-commissioned specialist services such as general practice, pharmacy and tele-dentistry services, supporting the elderly and patients with underlying health conditions by improving access to expert health services whilst reducing travel.

With 150 possible CDCs being planned, this Philips and NHS partnership approach enables the extension of diagnostics and addresses the unmet need of patients, while reducing the burden on hospitals. More low acuity patients can be directed to a local diagnostic center and leave hospitals to manage higher risk patients. CDCs will also be 'cold' facilities (facilities with no infectious diseases) as opposed to 'hot' zone hospitals, which can be closed off to contain the treatment of infectious diseases.

Jeevan Gunaratnam explains: "A lot of the healthcare needs could be addressed without ever stepping foot inside a hospital. If you do that across the board, you will reduce traffic inside the hospital and can reconfigure that hospital to deliver the more complex care and procedures that really add value. Patients also won't have to travel great distances for scans. Ultimately, this model supports the NHS and health providers to spread resources, knowledge and learning across the country".

According to the review of the planned services carried out by Professor Sir Mike Richards on behalf of NHS England, "the new facilities should be developed on available high street locations, retail parks as well as on NHS sites⁹." The report recommended this expansion take place as soon as possible, estimating a need for three hubs per million population initially. In addition to this, the review also recommended the doubling of CT scanning capacity and that tests for heart and lung disease be enhanced, given the link to the coronavirus.

Jeevan Gunaratnam concludes:

"The benefit of growing imaging services beyond the hospital is momentous. They have the potential to ease staff burdens, improve patient outcomes, with more diagnostic care services closer to where the patient resides. It will allow for skills to be spread more evenly across large geographical spaces, and potentially breathe new life into communities in duress. Community Diagnostic Centers can't happen soon enough. Healthcare should, after all, be accessible to everyone."

8. Using New Technologies to Improve the Prevention and Management of Chronic Conditions in Populations Brian Oldenburg, School of Population and Global Health, University of Melbourne, C. Barr Taylor, Adrienne O'Neil, Fiona Cocker, and Linda D. Cameron

9. Conducted by investigators from Cancer Research UK, the figure from the new study surpasses the previous estimate, which claimed 1 in 3 people in the UK will develop cancer in their lifetime, Cancer Research and British Journal of Cancer, DOI: 10.1038/bj.c.2014.606, 2015



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