



Opportunities and challenges for innovation in dealing with the clinical backlog

Perspective from Barts Health NHS Trust

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October 2021

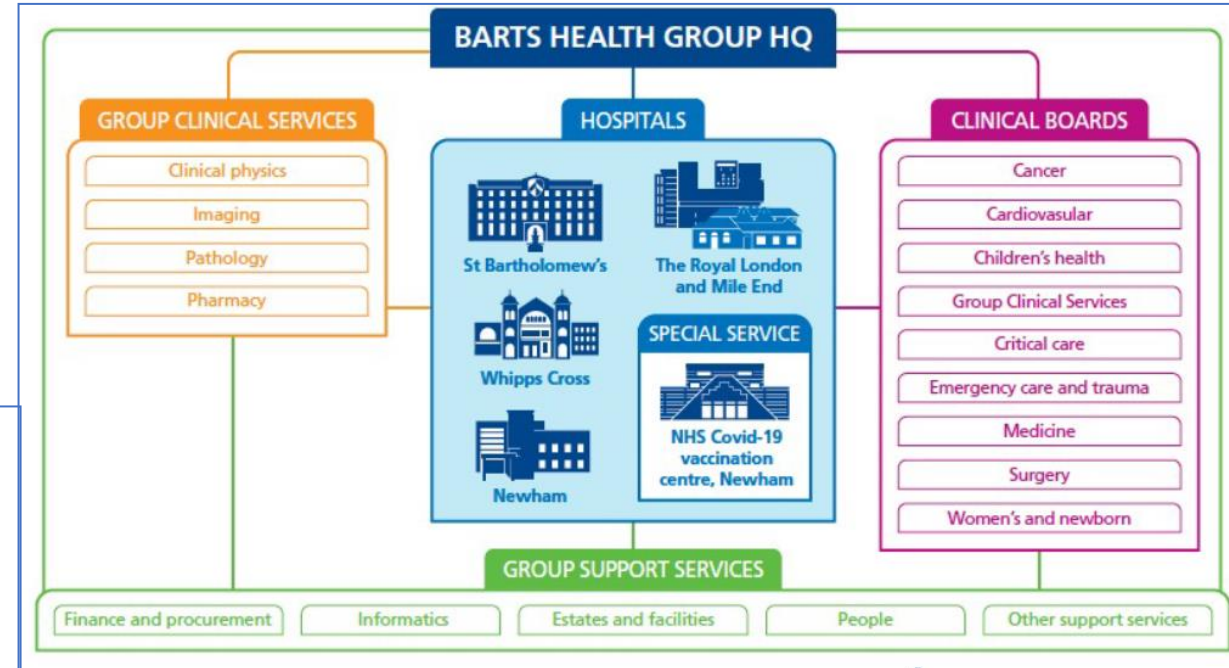
Trust overview

Barts Health provides a full range of specialised and general clinical services across 5 hospitals in East London, serving some of the most diverse communities in the country, facing significant health inequalities. East London has amongst the highest predicated population growth in the country over the next 15 years.

The heart of east London



- Newham: district hospital with orthopaedic centre
- Mile End: shared facility including community services
- St Bartholomew's: London's oldest hospital and national centre of excellence for cardiac and cancer care
- The Royal London: home of the London's Air Ambulance and leading stroke and renal units, dental hospital and large children's hospital
- Whipps Cross: large general hospital
- Covid-19 vaccination centre, Newham at the ExCeL

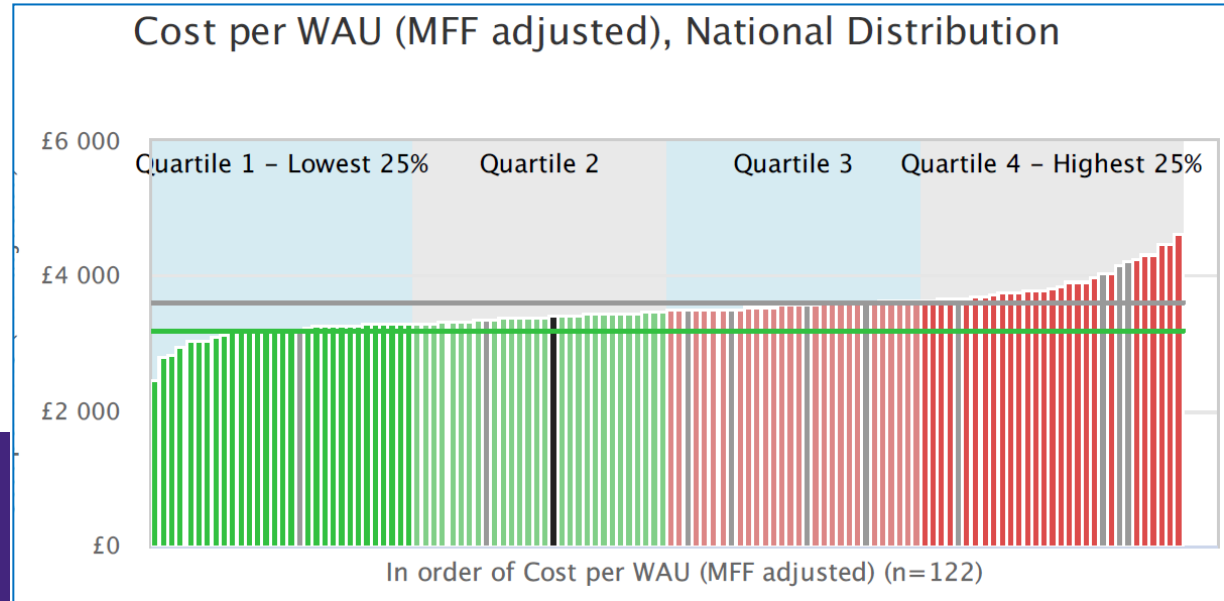


Barts is the second largest provider organisation in the NHS and is currently exploring deeper collaboration with our neighbouring trust, BHRUT. Our operating model combines strong local hospital leadership with clinical boards and networks that set strategy and standards across the group, supporting by support services operating at scale.

A journey of improvement

The trust was placed in quality special measures in 2014 and began an intensive process of quality improvement, enabled by changes to the operating model. This led to the trust exiting special measures in 2019 with greatly improved ratings. The trust is now working with the IHI to embed quality improvement and achieve consistently good and outstanding care.

2019 Barts Health NHS Trust CQC ratings		NHS Barts Health NHS Trust				
	Safe	Effective	Caring	Responsive	Well-led	Overall
Newham	Requires improvement	Requires improvement	Good	Requires improvement	Requires improvement	Requires improvement
The Royal London	Requires improvement	Good	Good	Requires improvement	Requires improvement	Requires improvement
St Bartholomew's	Good	Good	Good	Good	Outstanding	Good
Whipps Cross	Requires improvement	Good	Good	Requires improvement	Requires improvement	Requires improvement
Barts Health NHS Trust	Requires improvement	Good	Good	Requires improvement	Good	Requires improvement

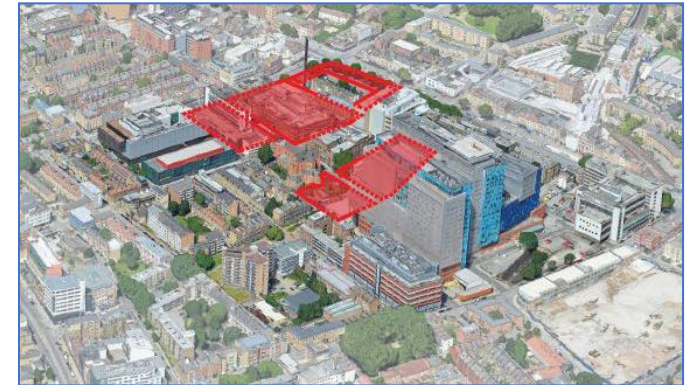


The trust was also placed into financial special measures in 2015 due to longstanding efficiency challenges and the burden of PFI costs. The trust exited FSM in 2020 following a wide-ranging financial improvement programme. While challenges remain, the trust's overall efficiency was above the NHS average and ahead of most peers prior to the pandemic.



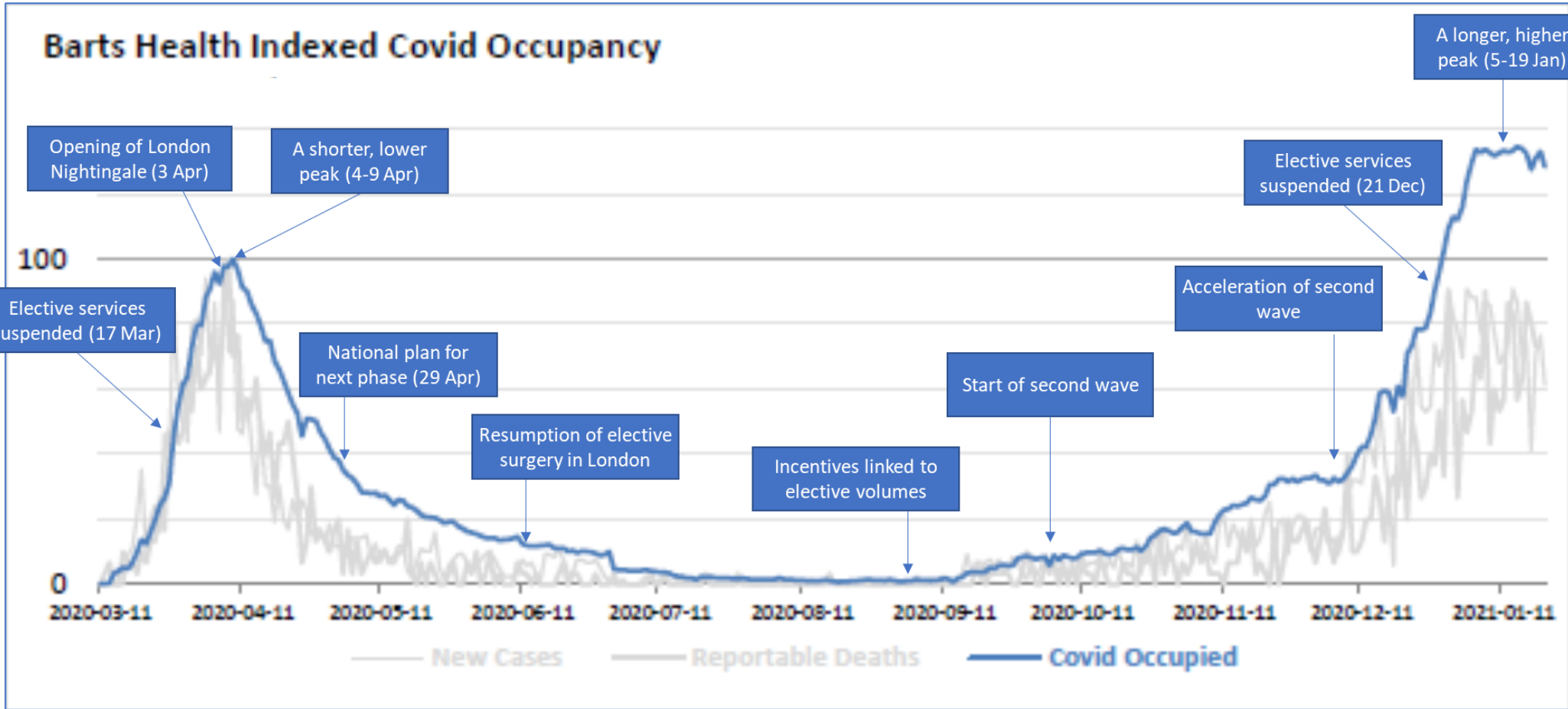
Redevelopment of Whipps Cross – the trust’s vision is to redevelop the Whipps Cross site in Leytonstone, replacing a 100+ year old facility with a brand new hospital, providing new models of care enabled by our digital strategy. The wider site will be redeveloped to provide affordable new homes and support local economic development. The schemes is one of the eight pathfinder schemes in the New Hospitals Programme with estimated completion in 2026.

Barts Life Sciences – in partnership with Queen Mary University of London, the trust has an ambitious life sciences strategy focused on precision medicine, enabled by data on our uniquely diverse population. A new life sciences campus is being developed adjacent to the Royal London to bring new companies and strategic bodies together alongside the hospital, the university, the new Civic Centre and the new Crossrail station.



East and Southeast London pathology partnership – Barts has led the development of a new pathology partnership with Homerton and Lewisham which went live in May 2021. The partnership is hosted by Barts and runs 7 laboratories across London with a major hub laboratory at the Royal London hospital. Implementation of digital pathology is due to commence later this year.

Impact of the pandemic: overview

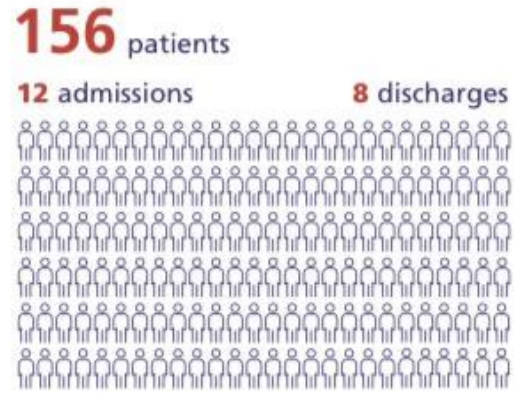


During the pandemic, the trust has expanded its capacity to treat over 800 Covid positive inpatients at the height of the second peak in January. The trust also operated the London Nightingale hospital from April 2020, including developing fully digital patient care in a matter of days. A major new critical care unit was put in place on the top floors of the Royal London and this capacity remains available to help cope with a third wave. Along with third wave planning, our current focus is on staff health and wellbeing and recovery of our elective services.

Impact of the pandemic: critical care surge and redeployment

At the height of the second wave in January, critical care capacity was trebled across the trust, requiring mass re-deployment of staff and suspension of elective services for a number of weeks.

Our peak day across both waves was 19 January 2021



136 patients on a ventilator (usually 22)

5 intubations
7 surgical procedures
5 transfers to scan



31 patients proned

It takes **7** people to prone a patient

ITU nurses hooked

1,500

litres (300 bags) of dialysis fluid to machines



36

patients on renal replacement therapy (usually only 5)

A multidisciplinary team came together to care for patients in the second wave

Workforce

439 Nurses redeployed

- RLH – 207
- SBH – 123
- WX – 47
- Newham – 24
- ARMY – 38

Ad-hoc support:

- St John's Ambulance
- 1,000 Doctors in nursing shifts
- Physician assistants
- Medical students
- AHPs

Doctors

- 55** Consultants
- 91** ITU trainees
- 75** Redeployed (other specialties)
- Tracheostomy teams
- Transfer teams
- Lines teams

Family Liaison and Support Team

- 3,624** calls
- 1,500** virtual visits
- 70** compassionate visits
- 104** end of life visits
- 184** bereavement calls

Therapies & Pharmacy

- 1600** drug infusions prepared
- Saving **5 hours** of nursing time per day

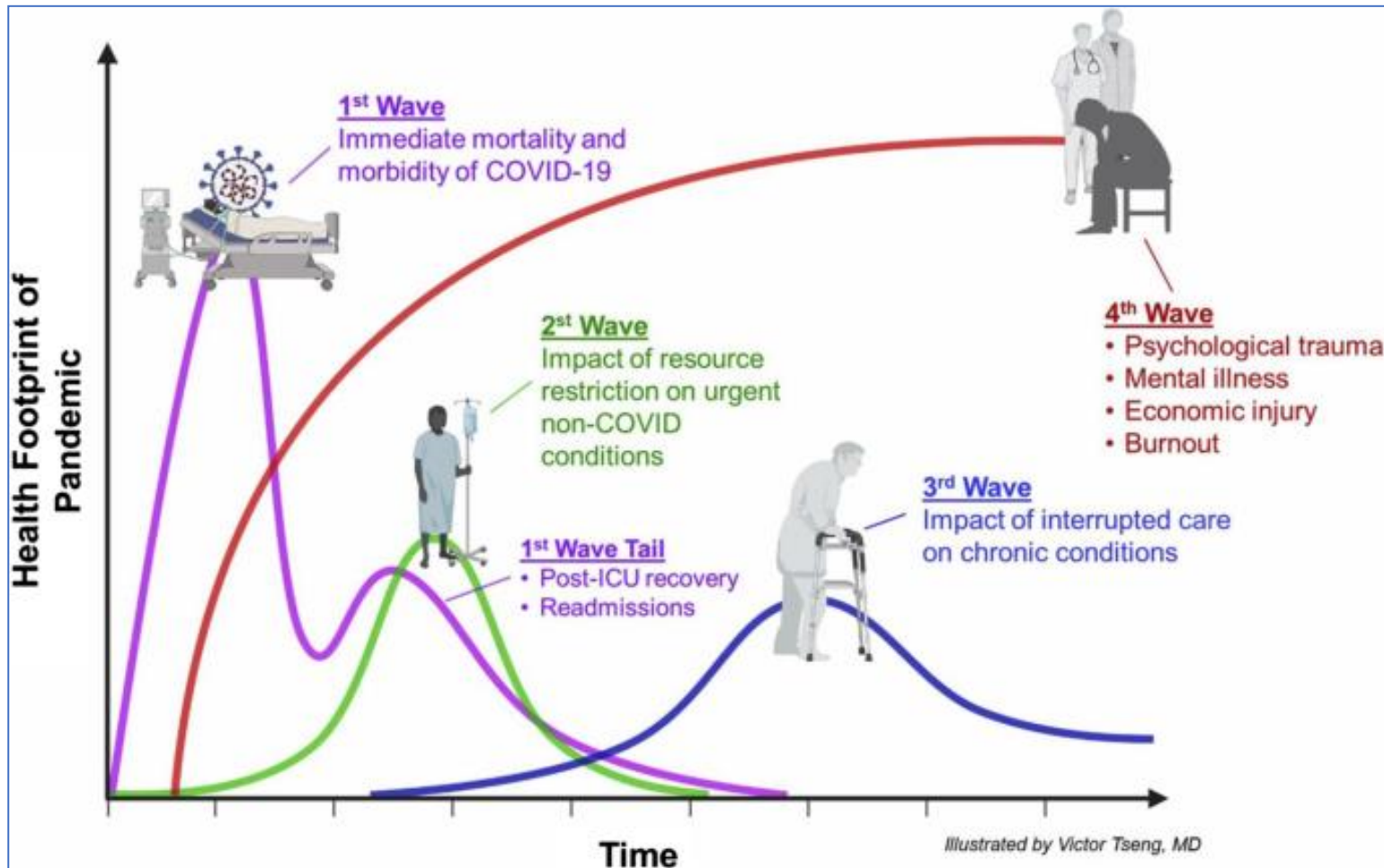
Dialysis nurses

- 100** Dialysis sessions
- Reduced ITU nurses' workload
- Better patient experience and rehabilitation

Service managers

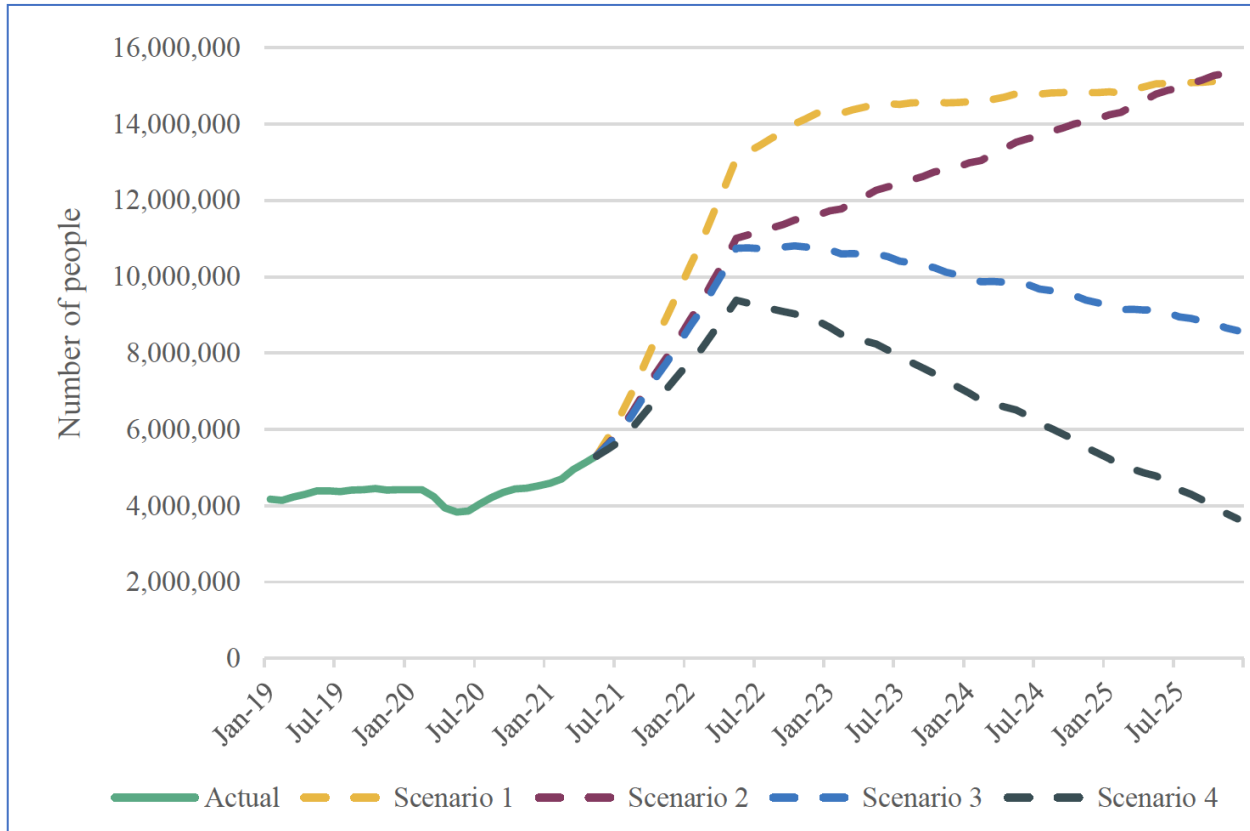
- Safety and logistics
- Fire marshals
- Stocks and materials
- Staff wellbeing

Impact of the pandemic: wider impact



Looking ahead, we anticipate a range of health impacts from the pandemic over time. As well as the ongoing burden of Covid, we are now focusing on the elective backlog created by the suspension of services and the resumption of non-elective and trauma demand. Over time, we also expect a high impact on mental health and an impact from long Covid and increased paediatric respiratory disease.

Impact of the pandemic: elective wait scenarios



Scenario	% of missed patients who still need treatment	NHS capacity for 2021 and 2022 compared with 2019	NHS capacity for 2023–25 compared with 2019
1	80%	90%	100%
2	65%	95%	95%
3	75%	100%	105%
4	70%	105%	110%

The elective waiting list has already been affected significantly. The future trajectory depends on our ability to increase capacity and also on the degree of unmet need which now manifests, something which remains highly uncertain. Containing waiting list growth is now a central priority for the NHS, subject to the on-going path of the pandemic.

Clinical backlog: overall approach

Optimising traditional methods

- More physical capacity
- More staff
- Higher productivity
- Better scheduling
- Outsourcing / insourcing



Innovation and new models

- Re-thinking care models
- Re-thinking the role of the patient
- Re-thinking the role of technology and AI

Coming to terms with the clinical backlog means a combination of doing traditional things at greater scale and innovating to create new interventions. Different approaches to the model of care, the role of the patient and the role of technology and AI are needed to ensure that we can sustainably treat elective demand and care for long-term conditions.

Clinical backlog: re-thinking care models



New care models for diagnostics and surgery are already being implemented through the development of hubs for high volume surgery and community diagnostics.

These models focus on concentrating activity and expertise in order to increase productivity and improve workforce resilience. In addition, the focus is on segregating elective and non-elective services as far as possible to protect elective capacity, particularly in light of on-going infection control requirements.

Clinical backlog: re-thinking the role of the patient

Patient-initiated follow up pathways



Only patients who need an appointment are seen, helping to reduce waiting lists



Care is better suited to a patient's individual needs and preferences which means better outcomes



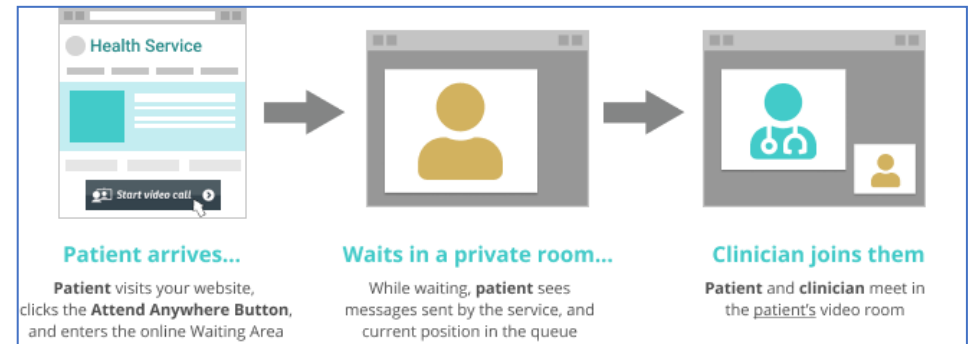
Empowers patients and their carers to take control over their own care

Patient portals and health records



- Health records
- Appointments
- Care management
- Device linkages

Video conferencing and appointments



For outpatient services and long-term conditions, a key area of focus is on empowering patients to have more control of their care. This can be enabled by new patient portals giving access to records, video appointments and scheduling, health monitoring and linkages to devices and wearables. These interventions aim to greatly increase patient satisfaction while over time lowering the demand for face-to-face appointments to manage care.

Clinical backlog: the potential of AI



AI for advanced cardiac MRI analysis for better patient care - Fully automated real-time analysis of cine cardiac MR images and shown that it outperforms a clinical expert using clinically-meaningful metrics – this is the first time this has been achieved in cardiology

Healthcare Scientist: Musa Abdulkareem

PIs: Steffen Petersen & Aaron Lee

The development of digital visual biomarkers to enable child-friendly vision assessments for treatment planning in optic pathway glioma
PI: Samantha Gordon, Consultant Paediatric Ophthalmologist and Research Lead, Barts Health



Looking further ahead, Artificial Intelligence has the potential to further transform care, through a wide range of applications to diagnostics, treatment and prevention.

As part of Barts Life Sciences, the CAP-AI programme has sponsored two waves of AI projects that are helping to generate new insights and innovation in this area.

A number of these projects focus on innovation in diagnostic pathways to speed up and improve the quality of diagnostic processes

Summary

1

The pandemic has had a highly disruptive impact on healthcare supply and demand and the dynamics between clinicians and patients. The full impact of this cannot yet be known but the consequences for healthcare delivery will be lasting and profound.

2

Coming to terms with the 'backlog' in planned care will mean re-thinking the models of care we offer, the role of patients in the organisation and delivery of care, and the role of technology (including Artificial Intelligence) in care delivery.

3

There will be widespread opportunities for innovation within this changing landscape, including in the development of a range of patient-held products, new diagnostic techniques and new facilities for diagnosis and treatment.