BMA

REPORT NO. 1

Building the Future

Brick by brick: The case for urgent investment in safe, modern, and sustainable healthcare estates

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Summary

This report examines the alarming condition of the UK's healthcare estate, shining a new light on its impact on doctors and the patients they care for, and making a powerful argument for urgent investment in the bricks and mortar of our health systems.

New BMA research has cast new light on the dire condition of the healthcare estate across the UK and the impact underinvestment is having on the safety and wellbeing of doctors and their patients.

Our members have given stark testimony of the appalling conditions they work in, laying bare the poor state of many hospitals and GP practices across the country. Their experiences shine a glaring spotlight on the impact of crumbling estates on the working lives of doctors. They also throw into sharp relief the risks to patient care created and exacerbated by longstanding underinvestment in healthcare infrastructure and shortfalls in capital funding.

Without immediate action, this crisis will only deepen, so the BMA calls upon the UK's four governments to urgently prioritise substantial investment into their healthcare estates.

The report covers primary, secondary, and community care, as well as mental health estates, presenting the experiences and views of doctors working across these sectors. It also presents a UK-wide perspective, acknowledging that the challenges posed by and to healthcare estates are largely consistent across NHS England, HSCNI (Health and Social Care Northern Ireland), NHS Scotland, and NHS Wales.

Key findings

- Healthcare estates have been starved of capital funding, with long-term underinvestment creating vast maintenance backlogs, preventing vital expansion and modernisation, and undermining the wellbeing and safety of staff and patients
- An alarming 38% of doctors answering the BMA's 2022 estates and IT survey say the overall physical condition of their workplaces is poor or very poor
- Critically, 43% of doctors surveyed told us that the condition of their workplace has a negative impact on patient care – illustrating the extent of this crisis
- Crumbling buildings and infrastructure often force wards and beds to close, compounding a wider lack of space across healthcare estates and contributing to ever-expanding waiting lists
- A lack of space for hospitals beds and GP consulting rooms limits access to care for patients and can lead to longer waiting times and care being provided in corridors
- Insufficient space in hospitals and GP practices is hindering doctors' training and is preventing the recruitment of additional staff
- Over two thirds of respondents to our survey felt that the condition and configuration of their workplaces would not allow for appropriate ventilation and IPC (infection prevention control) measures in the event of a further wave of COVID-19 or a future pandemic
- Much of the healthcare estate is incapable of supporting badly needed digital transformation
- Car parking charges at and poor transport options to the UK's healthcare estate continue to be a lingering issue amongst doctors, as well as limiting efforts to reduce the carbon footprint of healthcare services
- Estates are the primary contributor to UK health services' climate impact, with outdated heating systems and inefficient buildings increasing both costs and emissions – but governments and providers are failing to adequately invest in addressing this challenge
- Doctors are inadequately involved in the planning of estate projects, meaning infrastructure plans all-too-often fail to capture their extensive insight into how healthcare estates do, could, and should serve the needs of frontline staff and patients

Key recommendations

- Significant increases in capital funding must be provided in order to address long-term underinvestment in healthcare estates.
- All UK governments must launch transparent and independently audited national reviews of the condition of the primary and secondary care healthcare estates, building on existing work where appropriate, assessing the availability and standard of staff break space, the quality of staff training spaces, and the efficacy of IPC (infection prevention control) and ventilation measures.
- All UK governments should provide ringfenced funding to clear existing maintenance backlogs to protect doctors and patients, produce plans for when and how those backlogs will be resolved, and publish full maintenance backlog figures annually.
- Every doctor must have access to quiet, comfortable office spaces where they can discuss confidential matters in private.
- All providers should ensure break spaces are available for all staff, and that all new buildings and expansions include guaranteed, high-quality break spaces compliant with BMA guidelines.
- All UK governments and health services must link their estates and digital transformation programmes and provide necessary funding to ensure that all healthcare environments are capable of supporting new technology, IT systems, and high-speed Wi-Fi.
- Capital investment must be provided to create additional beds and clinical space in hospitals and GP practices, through both the safe expansion of existing premises and newbuilds where needed. This must include affordable funding options for GP premises expansions and improvements, to properly accommodate nationally-mandated recruitment of additional staff.
- All healthcare providers and systems must carry out an assessment of transport options available for staff and patients. Healthcare providers also improve car parking facilities, particularly where alternative transport options are not viable.
- Funding should be made available to GP practices and hospitals to improve their accessibility, particularly for people with disabilities and limited mobility.
- UK governments must better support healthcare organisations to meet their carbon reduction targets; this support must include ringfenced capital funding for improving the sustainability of health service estates across the UK.
- All estates planning – including plans for individual hospitals and buildings – should closely involve doctors, staff, and patients.

Introduction

High-quality estates are essential to deliver safe healthcare services, ensure those that need care get it, and to protect the health and wellbeing of staff. Though there are high-quality, modern estates found across the UK, we know that many healthcare facilities are not fit for purpose, with spiralling maintenance backlogs, and aging buildings, due to severe underinvestment leaving much of the UK's healthcare estate outdated, outmoded, and crumbling.

All too often, the condition of doctors' workplaces is poor and, in some cases, unsafe for them and their patients – impacting both their morale and their ability to provide the best possible care.

Given the immense pressures currently facing the UK's health services and the underlying workforce crises compounding them, it is unacceptable that doctors must go to work caring for patients in such poor conditions. Doctor morale is at an all-time low due to feeling undervalued, underpaid, and overworked – when the physical environment in which they work is equally neglected, it is like pouring salt in a wound. More importantly, there are serious safety considerations that can no longer be ignored. It is scandalous that we find so much of the UK's healthcare estate in such a dire condition, with many facilities in desperate need of basic maintenance and modernisation, and that some buildings present genuine risks to patients and the staff that care for them. The fact that even one patient admitted to hospital should have cause to worry about whether the roof above their bed might collapse should be a source of shame and serve as a clarion call for urgent reform and investment.

For this reason, this report argues that even against the backdrop of a public sector funding squeeze, capital funding for healthcare estates must be prioritised, and investment increased to ensure patients can access health services in facilities that are safe, modern, and promote health and wellbeing. To ensure money is spent where it is most needed a comprehensive audit of the state of the UK's healthcare estate is also required.

This report uses first-hand accounts and perspectives of doctors working in England, Northern Ireland, Scotland, and Wales, providing not just new insight into the healthcare estates' crisis, but also a powerful argument for urgent investment in the bricks and mortar of our health services.

It examines the current physical condition of the UK's healthcare estates, pinpointing severe challenges posed by unsafe buildings, enormous maintenance backlogs, poor IPC (Infection Prevention Control), and the inability of some buildings to support advancing technology and reductions in carbon emissions.

It lays out the impact shortages in – or poor use of – space have on system capacity, patient privacy and safety, the accessibility of healthcare services, and the wellbeing of doctors and staff working in them.

It considers the role of estates in the UK's efforts to tackle climate change – both in terms of how they contribute to emissions now and how they could help reach net zero targets in the future.

Finally, the report examines the pivotal role capital funding has to play in improving the quality and safety of healthcare estates and, notably, the impact underinvestment and even disinvestment in capital budgets has had on the condition of hospitals and GP practices throughout the country.

In combination, these points must serve as a wake-up call to the UK's governments and health systems and show them that urgent action is sorely needed to put them on the path to safer buildings, safer care, and safer working lives for doctors.

1 Physical condition

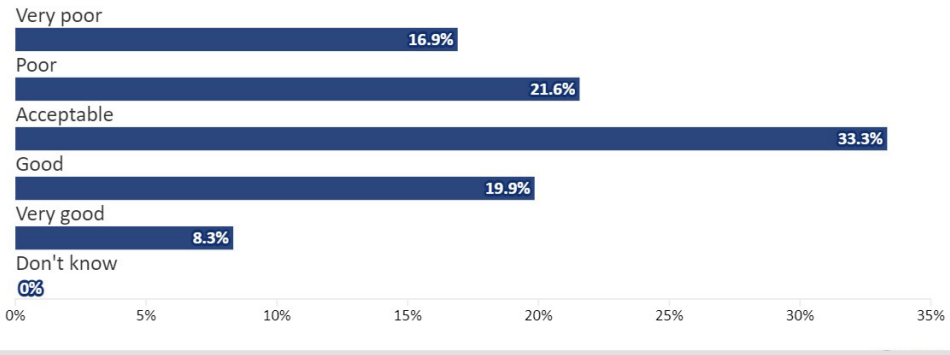
Healthcare estates are in urgent need of maintenance and modernisation

The quality of healthcare estates has a direct impact on the health, safety, and wellbeing of staff and patients. Healthcare facilities in poor condition present a greater risk to staff and patient safety and both create and exacerbate negative working environments.

The findings of our 2022 estates and IT survey reveal that an alarmingly high proportion of the BMA members who responded believe that their workplace is in poor physical condition. Over a third (38.5%) of respondents to our survey told us that the physical condition of the building they work in is poor or very poor (see Figure 1).

Figure 1:
Many healthcare buildings are in poor physical condition

How would you rate the physical condition of the building in which you work?



Many respondents to the survey also reported specific problems they experience as a result of the poor physical condition of their workplaces, including damp and leaks, unhygienic conditions, and poor temperature control. Notably, some pointed to these problems as being a potential driver of poor patient care or of them leaving the health service altogether.

> *"Every day I go to work in a ratty, smelly building with peeling paint, loose handles, poorly ventilated and baking hot offices, and loose and pock-marked toilet seats is another day closer to leaving this decaying system for good." – Doctor working in secondary care*

> *"The hospitals are disgusting. Paint peeling, ceilings leaking, break spaces revolting. Canteens tiny and gross. Woeful parking. Everyone is MISERABLE as a result and of course that leads to poor patient care." – Doctor working in secondary care*

> *"The space and equipment is outdated, poorly decorated at best and shambolic at worst." – Doctor working in secondary care*

The poor condition of estates is a major issue in primary as well as secondary care

Our survey also found that while the condition of the estate is the most acutely negative in the eyes of respondents working in hospitals, problems persist within primary care and GP practices too: over one in every four respondents (26%) working in primary care said the building in which they work is in a poor or very poor state. As with hospitals, some GP practices have also faced decline due to a dearth of capital funding or investment across the UK's health systems, with too little support made available to practices to expand or make improvements.

> *"Damp. Poor ventilation, working with open windows. You get used to it, with double clothing in winter. Distracts from patient care." – Doctor working in general practice*

> *"Poor morale through outdated premises and [poor] heating/air flow. Patients not encouraged to be respectful of the practice as [it] looks tired." – Doctor working in general practice*

Inadequate estates present a particular risk for mental health services

Estates which provide mental health care have specific requirements. Unfortunately, some buildings – especially old or repurposed ones – have features that are inconvenient, or worse still, put staff and patients at risk – such as ligature points[1] or potential escape routes in mental health wards for patients who are being kept in hospital because they are a danger to themselves or others. Significant progress in treatment methods can also often mean that even comparatively newer buildings are not fit for purpose.

Two of our survey respondents working in psychiatry provided examples of this:

> *"We have had patients with psychiatric conditions smash and leave through sash windows in our 1850s building." – Doctor working in secondary care*

> *"The alarms, keys and doors can be poor quality which in psychiatry is a safety issue." – Doctor working in secondary care*

It is essential that the greater focus on mental health services and funding in recent years is extended to include the facilities in which they are offered, too. The Royal College of Psychiatrists has made similar calls, including for the construction of eight new mental health hospitals,[2] and Simon Wessely's review of the Mental Health Act has called for new capital investment to modernise the mental health estate, noting the importance of the inpatient environment in enabling people to get better.[3]

Poorly maintained and outdated estates are putting staff and patients at risk

The failure to properly maintain large parts of the healthcare estate is creating serious safety risks.[4] This includes the fact that much of the estate is currently incapable of delivering adequate IPC (infection prevention and control), a serious shortcoming given the continuing threat of COVID-19 and other infectious conditions. Urgent action and investment are needed to remedy this crisis before it deepens and puts doctors and patients at even greater risk of harm.

The UK's four healthcare services all emphasise the importance of ensuring the safety of those accessing and providing care. This ought to, therefore, affirm that patients and staff entering any part of their health service's estate should always feel safe. However, this is untrue for many doctors and patients, with a significant number of healthcare buildings being far from as safe as they should be.

1 National Audit Office, Review of capital expenditure in the NHS, February 2020.
2 The Guardian, Call for six new mental health hospitals in England as buildings 'crumble away', February 2022.
3 Simon Wessely, Modernising the Mental Health Act: Increasing choice, reducing compulsion, December 2018.
4 The King's Fund, Poor NHS buildings mean poor NHS care, October 2022.

In 2021-22, NHS England reported 5,348 clinical incidents caused by estates and infrastructure failure, over double the number seen in 2016-17 – clearly illustrating the scale of the impact poorly maintained and dated estates, compounded by a lack of investment, have on patient care.[5] In Wales, the proportion of the estate which is compliant with statutory and safety regulations has dropped to 80% this year; the proportion of the estate that is in good condition has dropped to 76% – the lowest figures recorded in at least a decade, and both below the 90% target.[6] In 2020, under 71% of NHS Scotland's property assets were in good condition, and 69% was assessed as functionally suitable.[7] In Northern Ireland, the latest available data (from 2016) shows that only 39% of the Department of Health's estate was in an acceptable physical condition, only 43% was functionally suitable, and a mere 36% of the estate was fully compliant with statutory regulations.[8]

These statistics are reflected in the experiences of our members across the UK, who also reported a number of serious health and safety issues affecting both doctors and their patients:

> *"A waste pipe burst in the ceiling covering multiple members of staff in liquid and detritus, exposing them to risks of infection and electrocution." – Doctor working in secondary care*

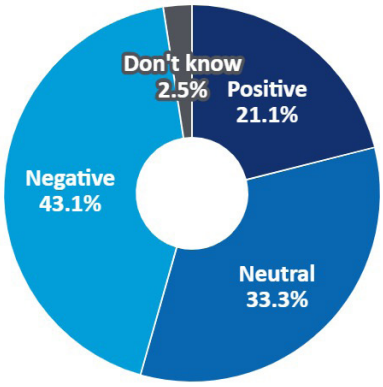
> *"Mites in neonatal units, sewage coming into patient care areas from leaks, fires in the ED resus area etc are all things I've seen." – Doctor working in secondary care*

> *"Frequent sewage leaks through ceiling on occasions entire birthing pools full of contaminated fluid. This often leaks onto computers, notes, and staff. Clearing this up and also losing staff due to the environment has caused delays to patient care." – Doctor working in secondary care*

43% of respondents to our survey reported that the physical condition of the building in which they work has a negative or significantly negative impact on patient care, with only 21% answering that the condition of their workplace had a positive effect on patient care (see Figure 2).

Figure 2:
The condition of healthcare buildings impacts patient care

How does the physical condition of the buildings you work in impact on patient care?



Source: February 2022 BMA NHS Estates and IT survey

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5 NHS Digital, ERIC (Estates Returns Information Collection) 2021/22.
6 NHS Wales, NHS Estate dashboard report 2021/2022.
7 Data obtained from Scottish government.
8 Northern Ireland Department of Health, State of the DoH Estate report 2016.

The testimonies of our members help put these statistics into grim but important context, with many sharing shocking examples of decaying buildings severely hindering patient care:

> *"Every time it rains heavily, some part of the Emergency Department will have a leak from the roof. It has occasionally meant that we have to close a critical area like resus." – Doctor working in secondary care*

> *"Building is condemned, treatment room cannot be used due to mould." – Doctor working in secondary care*

> *"I have had to evacuate ventilated patients due to a sewage leak onto the electrics in an area. Also: a massive leak in one area led to it being flooded so again had to evacuate patients." – Doctor working in secondary care*

The UK's health regulators – including the CQC (Care Quality Commission) in England, HIS (Health Improvement Scotland), HIW (Healthcare Inspectorate Wales), and the RQIA (Regulation and Quality Improvement Authority) in Northern Ireland – all consider the safety of healthcare facilities in their work. The impact of underinvestment in those facilities should, therefore, be something regulators actively highlight in their inspections and assessments.

> **Recommendation 1: All UK governments must launch transparent and independently audited national reviews of the condition of their respective healthcare estates, building on existing work where appropriate.**

> **Recommendation 2: Doctors should be empowered to immediately raise concerns where building conditions present a risk to patient safety.**

> **Recommendation 3: All UK regulators with a remit covering healthcare estates should, as part of their regular assessments, consider the impact of the availability of capital funding on the quality of those estates and the care provided within them.**

Maintenance backlogs are growing and must be urgently addressed

Perhaps the most widely reported and most-visible consequence of underinvestment in healthcare estates are spiralling hospital maintenance backlogs, which provide a sobering overview of the extent of investment needed to ensure all hospitals meet even the most basic standards.

Long-term capital underinvestment – as discussed in section four of this report – has meant that healthcare providers have frequently lacked the funds necessary to make improvements or even remedial repairs to their estate.

As a result, the cost of repairing hospitals to an acceptable standard, known as the maintenance backlog, continues to increase across all nations (see Table 1). The maintenance backlog in England has risen to a staggering £10.2 billion for 2021/22,[9] and the backlog in Wales now exceeds £1.02 billion, having more than doubled in the last decade.[10] In Northern Ireland, the maintenance backlog was estimated at £1.24 billion in 2020,[11] a 68% increase since 2016.[12] Meanwhile, the maintenance backlog in Scotland reached a record high of £1.08 billion in 2020.[13] Though there have been no new official numbers released since then, Scottish Conservatives have calculated that the backlog may have risen to £1.5 billion.[14]

9 NHS Digital, ERIC (Estates Returns Information Collection) 2021/22.
10 NHS Wales, NHS Estate dashboard report 2021/2022.
11 Data obtained from Northern Ireland Department of Health. Note that independent estate surveys are still being completed by HSCNI Trusts to inform this figure.
12 Northern Ireland Department of Health, State of the DoH Estate report 2016.
13 Data obtained from Scottish government.
14 Aberdeen Live, Scots taxpayers facing 'absolutely jaw-dropping – £1.5 billion NHS repair bills, October 2022.

Table 1:
Maintenance backlog in UK nations

Nation	Maintenance backlog	Year (latest available)	In real terms (2022 prices)
England	£10.2 billion	2022	£10.2 billion
Scotland	£1.08 billion	2020	£1.18 billion
Wales	£1.02 billion	2022	£1.02 billion
Northern Ireland	£1.24 billion	2020	£1.37 billion

Source: ERIC 2021/22, Scottish Government, Wales NHS Estate performance 2021/22, Northern Ireland DoH • Real terms prices calculated using November 2022 OBR GDP Deflator.

The estimated cumulative maintenance backlog across the UK thus amounts to nearly £14 billion.[15]

Despite these rising costs, investment to tackle the backlog has not kept pace. In England, for example, this year's total investment amounts to less than 14% of the total cost of the backlog (see Figure 3). This funding gap demonstrates that recent increases in investment, though welcome, do not even suffice in clearing the current backlog of maintenance, not to mention stopping new maintenance needs from arising.[16] One of the reasons for this is that there is not enough money available to spend on maintenance, as discussed further in the capital funding section of this report.

Figure 3:
Investment to tackle the maintenance backlog is not keeping pace

Maintenance backlog compared to investment to reduce it (England - nominal terms)

Source: Estates Returns Information Collection

This underinvestment is having a real impact on healthcare estates – and the people who work and are treated in them. As investment in the estate fails to keep up with growing need, the condition of the estate deteriorates further.

15 The sum of stated maintenance backlogs in November 2022 real terms amounts to £13.82 billion. This is likely an underestimate, as the latest available data for Northern Ireland and Scotland is from 2020, and maintenance backlogs have likely grown since.
16 Northern Ireland, Scotland, and Wales have not published data on investment into their maintenance backlogs.

The available data shows this particularly starkly in England, where over half (52%) of the maintenance backlog now presents a high or significant risk of failure, disruption, injury, or even prosecution[17, 18] and, earlier this year, UK Government ministers admitted that 34 hospital buildings in England have a roof at risk of collapsing.[19]

Initiatives intended to address some of these issues have frequently been slow off the ground and notoriously underfunded. The New Hospitals Programme in England, launched by the UK Government in 2020 with a promise to build '40 new hospitals', is an archetypal example.[20]

Box 1: The New Hospitals Programme – big promises, small premises

The scale of the New Hospitals Programme was quickly discovered to be far more modest than advertised, with most of the 40 projects only being refurbishments rather than genuinely new hospitals. The IFS (Institute for Fiscal Studies) has also estimated that the true costs of the programme could reach £26 billion,[21] yet only £3.7 billion has been set aside by the UK Government thus far.[22] Construction on some of the initial builds has been delayed,[23] too, while assessments from the UK Government's IPA (Infrastructure Projects Authority) have suggested that the programme may in fact be unachievable.[24] However, Jeremy Hunt, Chancellor of the Exchequer, reaffirmed the UK Government's commitment to the programme in his November 2022 Autumn Statement – potentially signalling that more meaningful progress may now be on the horizon.[25]

Again, in responding to our survey doctors from across the UK put these statistics into context – showing what a maintenance backlog means in reality:

> *"[The hospital] has mould in the corridors, water ingress through the ceilings, peeling floors, and dark hallways. It looks more suited to the set of a postapocalyptic film than a place to provide healthcare." – Doctor working in secondary care*

Other doctors told us their place of work is now effectively beyond repair, given the scale of its decline:

> *"Sadly we actually require a new facility/hospital all together, the existing is no longer fit for purpose and it is not possible to update adequately." – Doctor working in secondary care*

Due to the mixed model of GP estate ownership – some practices being owned by national bodies, including hospital trusts, some rented privately, and others owned by GP partners – it is extremely difficult to calculate and accurate estimate of the maintenance backlog in primary care. However, as our members have indicated, while GP practices typically face less acute problems many do struggle to make major repairs due to a lack of capital funding available to practices from national health bodies.

17 The maintenance backlog is typically divided into four risk categories, depending on how likely it is to cause failure, disruption, injury, or prosecution. The risk categories are: high risk, significant risk, moderate risk, and low risk.
18 BMA analysis of ERIC 2022 data.
19 The Guardian, Ministers admit 34 hospital buildings in England have roofs that could collapse, August 2022.
20 HM Government. 40 new hospitals by 2030: The biggest hospital building programme in a generation.
21 The Guardian, Johnson's '40 new hospitals' pledge costed at up to £24bn, December 2019.
22 Department of Health and Social Care press release (02.10.20) PM confirms £3.7 billion for 40 hospitals in biggest hospital building programme in a generation.
23 HSJ, Shake-up of 'new hospitals' project after construction capacity concerns, July 2021.
24 HSJ, Exclusive: Watchdog says new hospital building programme is 'unachievable', November 2021.
25 HM Treasury and RT Hon Jeremy Hunt MP, The Autumn Statement 2022 speech, November 2022.

Recommendation 4: UK governments should provide the necessary funding to urgently clear existing maintenance backlogs – or decide to rebuild sites that may no longer be appropriate to repair – in order to protect doctors and patients, and to prevent any further growth in the already enormous list of outstanding and costly remedial repairs.

Recommendation 5: All UK governments must be fully transparent regarding maintenance backlogs within the publicly owned healthcare estate, publishing these figures at least annually.

Buildings unable to support IPC (infection prevention and control) measures put staff and patients at risk

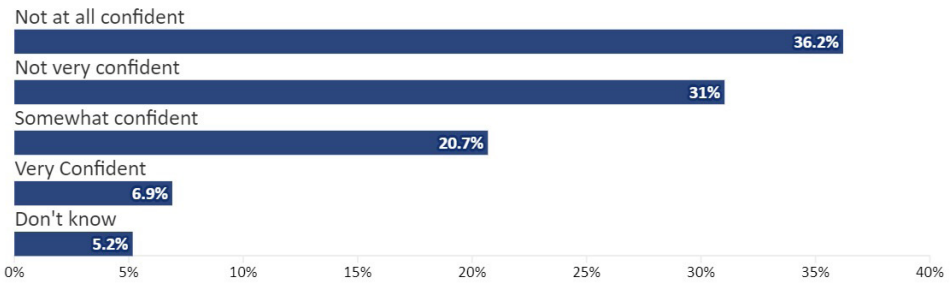
The COVID-19 pandemic exposed major IPC vulnerabilities within the UK's healthcare estates. A chronic lack of space and the inflexible layouts of many buildings made social distancing a challenge. Likewise, many buildings lack the appropriate ventilation to ensure effective IPC measures, with some unable to even open windows.

These factors are proven to have contributed to the spread of COVID-19 and other infections,[26, 27] as set out in in the first of the BMA's landmark COVID-19 review reports.[28] This meant the medical profession, and the patients they were looking after, were inadequately protected against COVID-19, and contributed to high levels of anxiety, illness – including long COVID – and, tragically, deaths.

In 2022, two years on from the outset of the pandemic, nearly 7 in every 10 (67%) respondents to our survey felt that their place of work would not allow for appropriate ventilation and IPC measures in the event of a future wave of COVID-19 or another pandemic: about 36% were not at all confident, and 31% said they were not very confident (see Figure 4).

Figure 4:
Doctors are not confident the buildings they work in support IPC measures

How confident are you that your place of work can support appropriate ventilation and IPC measures in the event of a future wave of COVID-10 or a future pandemic?



Source: February 2022 BMA NHS Estates and IT survey

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26 Dietz L, Horve PF, Coil DA, et al (2020) 2019 novel coronavirus (COVID-19) pandemic: built environment considerations to reduce transmission. *Msystems* **5**: e00245–20.
27 Fadaei, A. (2021). Ventilation Systems and COVID-19 Spread: Evidence from a Systematic Review Study. *European Jo*urnal of S*ustainable Development Research*, **5**(2): em0158.
28 British Medical Association. BMA Covid Review 1: How well protected was the medical profession from COVID-19?, 2022.

Free-text responses provided further insight as to why:

> *"Poor ventilation in the ward probably contributed to a massive covid outbreak (about half our staff off ill at the same time)." – Doctor working in secondary care*

> *"Ventilation in many parts of the buildings is very poor – hot in summer, freezing in winter and totally inadequate during Covid given airborne transmission." – Doctor working in secondary care*

> *"Our ICU is very old, very poor ventilation, bug risk or CO2 build up to worrying levels, very poor for infection control. Not fit for purpose." – Doctor working in secondary care*

> *"I work in a windowless small consulting room with no air recycling / filter. I see patients face to face here with the inadequate PPE provided. I am on the CEV list. This is not safe." – Doctor working in general practice*

The risk of infection spread is further amplified by a lack of space – an issue explored further in the next section of this report:

> *"Cramped accommodation and limited space both for patients and staff in the context of an infectious disease pandemic." – Doctor working in secondary care*

Some of the critical flaws in hospital design exposed by the pandemic and highlighted in these quotes are the direct result of insufficient capital funding. In England, for example, successive governments tried to build hospitals as cheaply as possible. This resulted in smaller hospitals, the removal of bed capacity that would have been a crucial buffer in the response to the pandemic, and a lack of reconfigurable spaces which would have increased the agility of the healthcare system.[29]

> **Recommendation 6: As part of the independently audited review of healthcare estates called for by the BMA, all UK governments and health systems must carry out an urgent review of IPC and ventilation across the primary and secondary healthcare estate, with dedicated funding for improvements and retrofitting.**

Infrastructure improvements are required to support modern healthcare delivery

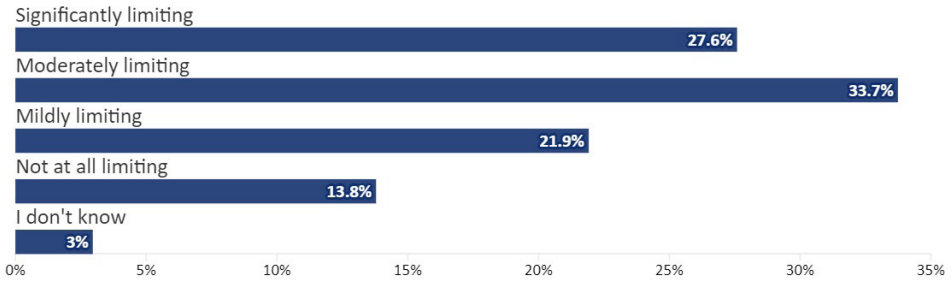
As explored in the other report of this series, Getting IT Right: A Prescription for Safe, Modern Healthcare are essential to the delivery of effective, safe, and modern healthcare. It is vitally important that the infrastructure of the UK's health services can accommodate new and developing technology, but also that it ensures even the most basic IT tools – such as reliable internet connections and fit-for-purpose computers – can be provided within healthcare estates.

However, a large majority (83%) of respondents to our survey said that the condition of their place of work limits their ability to use modern equipment and technology in some way. Indeed, more than one in four (28%) indicated their ability to use modern equipment and technology was significantly limited (see Figure 5).

29 The Nuffield Trust, Covid-19: lessons for hospital building programmes, July 2020.

Figure 5:
The condition of estates is limiting use of modern equipment and technology

Does the condition of your place of work limit your ability to use modern equipment and technology, including modern IT systems, to deliver care?



Source: February 2022 BMA NHS Estates and IT survey

Specific examples cited by BMA members include habitually broken power sockets, connectivity issues, and equipment that is out of date or low in supply:

> *"Cracked and broken power sockets. Broken ethernet ports. Telephones frequently broken and not repaired. [...] Computer trollies with stuck wheels and no battery capacity so turning off immediately on being unplugged." – Doctor working in secondary care*

> *"workplace struggle with mobile data and Wi-Fi blackspots due to the old building and not enough boosters and mobile masts nearby." – Doctor working in secondary care*

> *"Tiny doctors offices with not enough phones or computers, it slows down the ward round a huge amount waiting to print or type things." – Doctor working in secondary care*

As the experiences of these doctors show, the extent to which the quality of healthcare estates and digital and technological transformation are connected cannot be downplayed. Without drastic improvements to the condition of healthcare buildings, the capacity to use new and emerging technology within our national health services will be intrinsically limited.

Recommendation 7: All UK governments and health services must link their IT and digital transformation programmes with the wider development and enhancement of their healthcare estate, to ensure that hospitals and GP practices are capable of supporting new technology and IT systems.

Recommendation 8: Funding must be provided to allow hospitals and GP practices to upgrade or retrofit their premises to allow for new technology to be fitted or better accommodated.

Recommendation 9: All buildings should have adequate Wi-Fi accessibility and high-speed broadband connections, those without should receive urgent support to make the necessary improvements. Future new builds or refurbishments should be designed with these factors in mind as well as the need to allow for future connection methods to be installed.

2 Space, layout, and design

Healthcare environments must be designed with capacity, safety, and wellbeing in mind

The intrinsic link between healthcare architecture and health and wellbeing is long-established, and was noted by Florence Nightingale who, as early as 1860,[30] argued that a hospital environment with good natural light and air quality could aid the pace of patient recovery.[31] In modern practice, this link means that it is vital for both staff and patients that healthcare environments are spacious, well-designed, and fit for purpose.[32] Yet many estates are currently inaccessible, too small, outdated, or were never designed to be healthcare facilities. These challenges are only compounded by issues with the security and safety of transport to and from hospitals and GP practices.

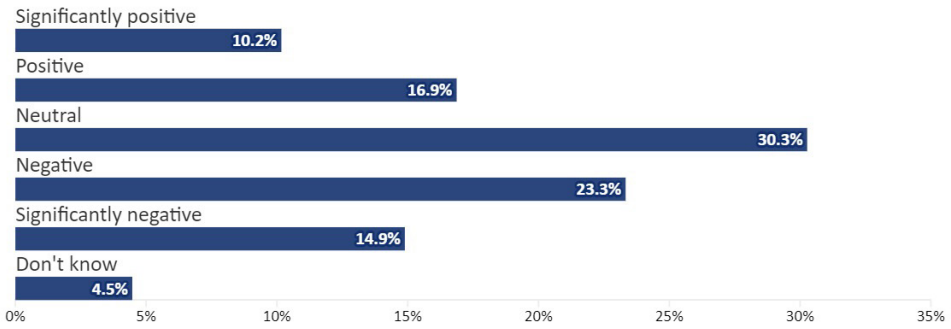
Doctors need high quality rest spaces to be able to deliver safe care

Rest areas are vital to both the wellbeing of doctors and their ability to deliver the best possible care to patients. The fact that they are a rarity for many doctors and healthcare staff is unacceptable and this issue must be resolved urgently.

As recommended in the BMA Fatigue and Facilities Charter, doctors must have access to appropriate rest areas, including a lounge and kitchen with amenities like kettles and running water, and they must be able to take rest and refuel during long days and nights spent caring for patients. However, despite the clear importance and benefits of taking breaks,[33] many doctors do not have access to a suitable break space, an issue exacerbated by the chronic lack of space in the estate. Alarmingly, over a third of respondents to our survey (38%) said that the availability of break space was having a 'negative' or 'significantly negative' impact on their wellbeing at work (see Figure 6).

Figure 6:
The availability of break spaces affects doctor wellbeing

What impact has the availability of break space had on your wellbeing at work?



Source: February 2022 BMA NHS Estates and IT survey

30 Nightingale F. Notes on Nursing: What it is, and what it is not, New York, D. Appleton and Company. 1860.
31 https://www.scientificamerican.com/article/what-florence-nightingale-can-teach-us-about-architecture-and-health/
32 Morgan M. (2018) Poor hospital design has an impact on staff, patients and healthcare. British Medical Journal 360: k288.
33 Dore E (2021) Sleep is the best medicine: How rest facilities and EnergyPods can improve staff wellbeing, *Future Healthcare Journal* **8**(3): e625-e628.

Box 2: COVID-19 and rest space

Though the opportunity to take proper breaks has been more important than ever since the beginning of COVID-19 pandemic, the lack of space within the healthcare estate actually meant break space capacity was often reduced, or break rooms were removed altogether:

"Reduced space due to social distancing (literally removing chairs and tables) without providing an alternative area. Breaks taken sat on the floor in corridors or at desk at times." – Doctor working in secondary care

"We have a small room for breaks – with social distancing 3 people max can be in the room (out of a staff of 60)!" – Doctor working in general practice

"Tea rooms withdrawn. Not allowed to eat in areas we were before ie offices. No alternatives provided. Team working is more fractured as you don't get to catch up with colleagues." – Doctor working in secondary care

"We have not used the space during the pandemic due to social distancing limitations. This has had a negative impact on my mental wellbeing." – Doctor working in general practice

"Chairs were taken out of the doctor's mess without prior warning to prevent more than 6 doctors the room. [...] It deprived us of a place to debrief with colleagues which affected well-being." – Doctor working in secondary care

"We have a small coffee room and we used to all squash in together, but with covid restrictions lots of chairs have been removed. Too cold to go outside at present. Really bad for teamwork and morale – we should be able to have coffee together." – Doctor working in secondary care

When break spaces are available, they are also often inadequate – lacking essential amenities like running water, heating, or ventilation:

"Tiny, poorly kept room: poor ventilation, smells awful, chairs falling apart, tiny fridge, dirty microwave, no kettle." – Doctor working in secondary care

"We have a portacabin. It gets cold in the winter and is an oven in the summer." – Doctor working in secondary care

Break spaces can have a clear impact on staff wellbeing, morale and team working, by facilitating interaction between colleagues. Both are essential for safe patient care. Some of our survey respondents explained how their employers had introduced new rest spaces, to positive effect:

"New wellbeing rooms introduced and kitted up. This has been a positive thing for the workforce." – Doctor working in secondary care

"Addition of rest rooms for sleep within the anaesthetic dept have improved facilities massively." – Doctor working in secondary care

"Re-establishing doctors' mess and rest spaces has made a significant difference." – Doctor working in secondary care

Finally, staff must have access to spaces for breastfeeding, pumping, and religious activities, as recommended in NHS guidance.[34, 35] All of these are key to wellbeing as well as equality.

Recommendation 10: All providers should ensure break spaces are made available in the short-term, and that all new buildings and expansions include guaranteed break spaces compliant with guidelines set out in the BMA Fatigue and Facilities Charter and Junior Doctor wellbeing checklist, designed with the direct input of doctors.

Recommendation 11: As part of the independently audited review of their healthcare estates called for by the BMA, all UK governments and health services should assess the availability and quality of dedicated staff break space in their healthcare facilities, building on best practice and the input of doctors and staff. Health services and providers should then work directly with trade unions to design and implement improvements to break space.

Doctors need suitable office spaces to ensure effective and private patient care

Besides break spaces, the BMA also recommends that doctors have suitable office spaces with power points, telephone connection and internet access.[36] In addition, it is crucial that office spaces are quiet, so that doctors can work without interruption and discuss confidential matters in private. Offices also often function as rest areas and, in the absence of alternative rest areas, senior clinicians and GPs also frequently use office space – when available – to take breaks.

Despite its importance, many respondents told us they had insufficient office space at their disposal, often leading to a lack of patient privacy and confidentiality, uncomfortable working conditions, and distractions:

"There is a lack of office space, so doctors are often sat out in a corridor or main bay when writing notes and discharge summaries, leading to distractions." – Doctor working in secondary care

"Lack of office space on the ward – we stand to discuss patients at a limited number of terminals in the middle of the corridor – constant interruptions from people and replies trying to get past and patient confidentiality means we often have to stop mid clinical discussion." – Doctor working in secondary care

"Nowhere to speak to patients or relatives privately. No proper relaxation space. Ill thought-out communal areas. Loud." – Doctor working in secondary care

"Insufficient side rooms for patient privacy. Insufficient space for private conversations with families." – Doctor working in secondary care

According to our survey, a lack of private and suitable office space is a recurrent issue in general practice too, as well as in community care:

"We are desperately short of space, hot desking is leading to rushed consultations. I have to work from home on occasion and I resent the intrusion of work into the sanctuary of my home." – Doctor working in general practice

34 National Health Service, Brea*stfeeding and going back to work*, 2021
35 Department of Health, *Religion or belief: A practical guide for the NHS*, 2009
36 British Medical Association, BMA Fatigue and Facilities charter, July 2018.

"In the inpatient setting there is often reduced office space available, especially since COVID; work stations are crammed and not adjustable to allow you to work in a comfortable way." – Doctor working in community care)

"The introduction of "hot desking" resulted in significantly increased stress due to lack of an available place to work and overcrowding at the working office. I was made to work in a small room with 16 other colleagues, medical students and constantly being interrupted." – Doctor working in community care)

Recommendation 12: All doctors must have access to quiet, comfortable office spaces where they can work without interruption, and discuss confidential matters in private.

More clinical space, as well as staffing, is needed to meet demand

If doctors are to deliver care to the highest standard, they first and foremost require the space to do so, including modern and sufficient clinical spaces to treat ever-increasing numbers of patients. Space shortages, in contrast, decrease efficiency, and cause delays and distraction.

Worryingly, however, the most recurrent complaint about the healthcare estate in our survey was a lack of space:

"We don't have enough space! Every clinical room is used to 100% capacity for every minute of our opening hours. We have turned store cupboards into clinical spaces, repurposed rooms, moved handheld notes off site, removed our coffee room...all to attempt to get a little more space." – Doctor working in general practice

"We have real problems with space – cannot provide enough space to either see patients or accommodate staff." – Doctor working in secondary care

More training spaces are needed to support the current and next generation of doctors

The ability and capacity of healthcare estates to support the training of doctors and other medical staff is vitally important.

However, as noted in the Scottish Government's 2019 report on undergraduate medical education in Scotland, a lack of training space in general practice is a major factor in limiting the expansion of medical education, and, by extension, of the workforce.

This is echoed by the vast majority of respondents to our survey (84%) who said it has been difficult to find spaces for educational or training purposes at their place of work, with one in three (35%) saying this is significantly difficult.

"Inadequate space for teaching and training" – Doctor working in secondary care

To deliver on ambitions to expand the health profession, estate planning must take into account the need for space to meet current and future requirements for undergraduate learning in both primary and secondary care, for all students and trainees. Where online learning is required, adequate space and IT must also be provided.

While efforts to increase the number of medical students are both welcome and badly needed, without sufficient space many will be unable to learn and develop their skills in the right environments, risking the education and training of the doctors of the future.

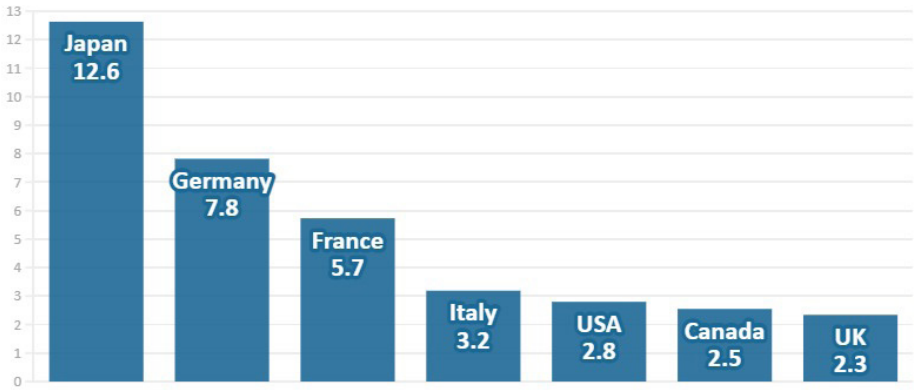
Recommendation 13: The national reviews of healthcare estates called for by the BMA must include assessments of the availability and quality of training space.

Lack of space impacts bed capacity, waiting lists, safety and flow in secondary care

This chronic lack of space, alongside staff shortages, means that many hospitals do not have enough beds where patients can be seen or treated. Compared to other G7 nations, the UK has the lowest number of beds per 1,000 inhabitants (see Figure 7).[37]

Figure 7:
The UK has the lowest number of beds per inhabitant of the G7 nations

Hospital beds per 1,000 inhabitants (2021 or latest available data)



Source: OECD • Includes beds that are maintained, staffed, and ready to use.
Hospital beds includes acute care beds, rehabilitative care beds, long-term care beds

The dearth of beds and of space to put them has been highlighted by recent reports of hospitals expanding into space never intended for clinical care, including corridors, in order to increase capacity. These desperate attempts have led to warnings from The Royal College of Emergency Medicine that using these spaces – and corridors in particular – presents a potential risk to patient safety.[38]

A lack of space and, consequently, beds is contributing to delays in care provision and hindering efforts to reduce waiting lists too. Last year, for example, Welsh NHS bodies had to return over £12 million worth of funding allocated to tackle waiting times, citing a lack of physical space as one of the barriers to spending the money.[39]

The dangerous effects of this lack of space were also relayed by our survey respondents:

> *"The urgent care centre does not have enough clinic rooms, leading to significant delays in patients being seen because doctors cannot find rooms." – Doctor working in secondary care*

> *"Simply not enough capacity to accommodate enough patients to have an impact on waiting lists." – Doctor working in secondary care*

37 OECD (2022), Hospital beds (indicator). (Accessed on 14 November 2022)
38 Health Service Journal, NHSE issues fire risk warning over 'corridor care', November 2022
39 Audit Wales, Concerted action is needed by NHS Wales to tackle the waiting times backlog for planned care, May 2022.

Delays due to bed shortages are affecting traditional waiting lists as well as emergency care. The Royal College of Emergency Medicine reports that more and more people are getting stuck in ambulances and emergency departments due to hospitals reaching capacity,[40] and has called for an additional 7,170 staffed beds across the UK in the medium term.[41] Similarly, the BMA has called for an increase in core bed stock, however noting that this will only be meaningful if these can also be staffed.

> *"A lack of space in ED and beds in the hospitals and social care has led to huge queues of ambulances much of the time now. At times all the ambulances in the county were outside ED with none free for even emergency calls." – Doctor working in secondary care*

One of the proposed solutions to the shortage of both beds and space is the use of so-called virtual wards, which, in theory, could free up hospital beds by allowing patients to be monitored remotely in care facilities or their own homes. Virtual wards are a central pillar of planning for winter 2022/23 in England, but, while a potentially innovative solution, their efficacy is as yet unproven.[42] Likewise, the effective use of virtual wards hinges on access to high quality technology and IT infrastructures which, as the other report in this series makes clear, is frequently lacking in the UK's health systems.

Our survey respondents highlighted the risks that a lack of private spaces – such as side rooms and quiet consulting spaces – poses to privacy and confidentiality:

> *"Insufficient side rooms for patient privacy. Insufficient space for private conversations with families." – Doctor working in secondary care*

> *"The ED does not have enough cubicles with doors, which means it is difficult to carry out necessary intimate examinations." – Doctor working in secondary care*

> *"Limited privacy for patients impacts on recovery and patients' wellbeing." – Doctor working in secondary care*

A lack of space means clinical capacity in General Practice is frequently restricted

Shortage of space is a major challenge in general practice, too, making it harder for GPs to see patients quickly and even preventing some practices from expanding their patient list:

> *We are desperately short of clinical and admin space. This is the single biggest problem we have in delivering safe care to our patients. – Doctor working in general practice*

> *We could not accept a higher practice list to respond to a significant expansion on local population due to lack of space and no support with changing/improving/expanding premises – Doctor working in general practice*

40 Royal College of Emergency Medicine, RCEM Winter Flow Project: Analysis of the data so far. April 2022.
41 Royal College of Emergency Medicine, CREM CARES Campaign, November 2021.
42 NHS England, Next steps in increasing capacity and operational resilience in urgent and emergency care ahead of winter, August 2022

Increasing clinical space within the healthcare estate and staffing must go hand-in-hand

Issues surrounding space must be addressed in conjunction with the workforce crisis: it is crucial that the estate can accommodate necessary workforce expansions. In general practice, for example, the size of premises often limits the number of GPs and additional roles a practice can take on or accommodate. For example, in England, this problem has been severely exacerbated by the ARRS (Additional Roles Reimbursement Scheme), which has increased staff working in general practice settings on an unprecedented scale, without the necessary support to extend estates capacity.

> *"[We need an] increase in the size of the premises to accommodate all the extra staff because of increase in patients but also because of the ridiculous number of ARRS staff employed via the PCN [Primary Care Network]." – Doctor working in general practice*

> *"We have increased the Primary Care workforce at our premises, and taken on trainees in various disciplines ... we lack enough clinical rooms and admin office space (Pandemic distancing exacerbated this) ... plus car park far too small." – Doctor working in general practice*

Recommendation 14: In the medium term, additional clinical space must be created through the safe expansion of existing premises and, where needed, through newbuilds. This requires substantial capital investment so that more funding can be made available to hospitals and GP practices, as well as other healthcare premises.

Recommendation 15: Any nationally mandated increase in primary care staffing within GP practices must be accompanied by additional funding for premises expansions and improvements, in order to properly accommodate additional staff.

Site layouts should facilitate efficient healthcare delivery

Of equal importance to increasing the amount of space available is ensuring that the buildings we do have are properly configured and used to their full potential.

Well-designed healthcare facilities can reduce time spent travelling between different parts of the building by staff and patients, maximising limited staff time. They can improve collaboration between staff for the benefit of patient care. And they can ensure healthcare facilities are able to accommodate all of the different functions they need to – from clinical to rest and training facilities. In short, well-designed buildings with an intuitive layout improve efficiency and staff wellbeing, which in turn improves patient care.

Our survey brought to light how inefficient site layouts are making doctors' jobs more difficult than they should be, highlighting the importance of staff involvement in building design and layout:

> *"New buildings are good but can be very large and little thought given to how people negotiate between them in a timely manner." – Doctor working in secondary care*

> *"Not fit for purpose. There is a significant lack of staff facilities, very small staff room, no changing room, only one staff toilet. Offices are poorly placed and lots of wasted space." – Doctor working in secondary care*

> *"Previous trusts were geographically poor in their layout. Walking over a mile and half between wards delays patient care." – Doctor working in secondary care*

"The new build was based on a flawed 1970s concept, could not be entirely afforded so is inefficient and ineffective and does not dovetail with retained estate and innovative features of the old hospital designed by clinicians have been lost mostly as a consequence of poor leadership." – Doctor working in secondary care

Premises must be accessible for everyone

Buildings must be accessible for those with mobility needs

Hospitals and GP practices should be accessible to doctors, staff, and patients with disabilities or mobility needs. However, it is readily apparent that many are not – whether due to age, layout, design, or lack of necessary equipment. This presents significant access limitations for certain staff or patients.

Respondents to our survey gave an insight into these limitations, telling us how the buildings in which they work are difficult to access for those with mobility needs and wheelchair users in particular:

"Many of the rooms are just unpleasant to work in and not fit for purpose, windowless tiny rooms, rooms that are too small to make it easy for patients with mobility aids, eg you have to [move] half the furniture out to get a wheelchair in." – Doctor working in secondary care

"We have 4 surgeries, 2 have very old lifts which sometimes break down. These buildings are converted houses so not purpose-built, so sometimes can't get wheelchairs or pushchairs into some rooms etc". – Doctor working in general practice

"There are sinkholes by the concrete ramp to enter...the doors are not wide enough for wheelchairs." – Doctor working in secondary care

These access problems should not be present in a 21st Century health service. The fact that they are reflects the need for both direct investment into secondary care estates – either to retrofit existing buildings to ensure accessibility, or to ensure new builds include full accessibility as standard – and the provision of accessibility funding pots for GP practices to draw upon to make improvements where needed.

Recommendation 16: Funding should be made available to GP practices and hospitals to make necessary accessibility improvements where possible or – where not – to ensure new premises are fully accessible as standard.

Staff and patients must be able to easily access healthcare estates

Doctors and patients need to be able to access healthcare estates in affordable, safe, secure, and stress-free ways. This can include through public transport and forms of active travel like cycling, but, for many staff working shifts and for some patients attending out of hours, it means having access to parking.

Travelling to healthcare buildings can be a significant challenge. Therefore, when considering enhancements to their estates, governments and health services should also review the availability, accessibility, safety, and affordability of transport options to those buildings – both for patients and for staff.

More must be done to improve access to healthcare site by sustainable modes of transport

Sustainable modes of transport can play an important role in improving the accessibility of healthcare sites. It is important that the use of these transport options, which include public transport or cycling, are safe and secure.

Unfortunately, several doctors told us that cycling storage provisions are lacking both in number and quality; others explained that there are no safe cycling routes to their place of work – so more needs to be done.

> *"All NHS estates need far more safe cycle storage. And roads within NHS estates need to be clearly marked for pedestrians and for cyclists. If it was easier and safer to cycle to work, far more staff would do this – which is healthier with less pollution and congestion." – Doctor working in secondary care*

> *"I attempted to cycle to work previously but there is no safe route to do this from my home." – Doctor working in secondary care*

Car parking at healthcare facilities must be easy to access, affordable and safe

While improving sites' access by sustainable modes of transport is important, it is clear that access to healthcare sites by car and adequate and affordable car parking will continue to be important. Sick and infectious patients may not be able to travel by bus or bike and women in labour need to get to the hospital quickly. For doctors who work night shifts or are on call, public transport is often not an option. Equally, cycling several miles back home after a long shift is not always practicable.

Charging staff for car parking at hospitals is a longstanding point of contention and is something the BMA has opposed strongly for many years. We oppose parking charges for doctors on the basis that forcing them to pay to park at their places of work is unfair, costly, and negatively impacts morale. This is especially important given the current workforce and cost of living crises. It is positive, therefore, that car parking charges have been removed in Wales and Scotland. However, the fact that doctors working in Northern Ireland or England – except those working night shifts – continue to be charged must be resolved.

Only compounding the cost of parking is its limited availability at some sites, both for staff and patients. In our survey, a number of doctors told us there was insufficient car parking available at their place of work, adding significant and unnecessary stress to their working lives:

> *"I currently have to get to work an hour before starting in order to get a parking space." – Doctor working in secondary care*

Another common issue is that car parking, either on-site or off-site, is unsafe – in secondary care as well as in general practice and community care. Overall, around one in three survey respondents (31%) said that safety and security of car parking is poor or very poor. Respondents reported theft and damages, poorly lit parking spaces, and having to walk long distances to an off-site car park in the dark:

> *"Dark car park poorly lit at night and if working late, I have to run through rest of the empty car park to my car." – Doctor working in secondary care*

> *"My car has been broken into on hospital grounds recently, and although I was parked within 15m of the nearest security cameras, they were unable to identify the make or model that the perpetrators used, or adequately provide the police with an illustration of their face." – Doctor working in secondary care*

Safe parking is especially important for staff who work evening or weekend shifts, or for whom alternative methods of travel are not accessible, for example because of bad public transport links.

Recommendation 17: All healthcare providers must carry out an assessment of their accessibility by transport and the transport options available for staff and patients.

Recommendation 18: All healthcare providers should work to improve the accessibility of their sites, including by improving cycle storage and by working with public transport providers to improve access for staff and patients.

Recommendation 19: Where alternative options are not available or viable, healthcare providers must also improve car parking facilities – including their safety and accessibility – and offer free parking to staff and patients.

Newly built premises and renovations should be designed with clinical input so that they are intuitive, efficient, and safe

It is essential that doctors – as well as wider staff and patients – are placed at the heart of estates planning, to ensure that future hospitals and GP practices are shaped with the input and expertise of those working within them.

Newly built premises as well as renovations should be designed in partnership with those working in them, so that buildings are intuitive to use, efficient for staff and patients, and, importantly, safe. Clinical input helps ensure that infrastructures meet the clinical, team, and educational needs of doctors so that they can do their job to the best of their ability.

"Estate should first and foremost involve clinicians before planning." – Doctor working in secondary care

"Needs the build of a new hospital as promised. But need to listen to our clinical and educational and social needs as promised." – Doctor working in secondary care

According to our survey respondents, and as highlighted above, failing to consult clinicians can result in poor planning and design, leading to delays in patient care and reduced staff wellbeing:

"Poor planning with countless delays resulting in outdated facilities; grossly short in the size and equipment by the time plans translate into actually inhabited clinical areas. Also such infrastructure programmes too easily and often exclude appropriate stakeholders but are overwhelmed in inexperienced management staff." – Doctor working in secondary care

Clinical input into estates planning, on the other hand, can improve healthcare delivery – and contribute to staff wellbeing, by ensuring that spaces are intuitive and facilitate optimal ways of working:

"We have a fairly new build that we helped design, so have a positive work environment." – Doctor working in secondary care

Recommendation 20: All estates planning – including plans for individual hospitals and buildings – should draw on the experiences and input and fully involve doctors, staff, and patients.

3 Sustainability

The condition of healthcare estates has an impact on the climate and the environment

Box 3: Why is climate change important for health?

The climate crisis is also a health crisis. Climate change poses a significant and growing threat to public health – from rising sea levels that damage crops and lead to malnutrition and famine, to the spread of vector-borne diseases such as malaria to new locations. The World Health Organisation estimates that between 2030 and 2050, climate change will be responsible for around 250,000 additional deaths a year.[43] Worryingly, these effects on public health are already visible and not contained to a far future: in the UK, air pollution alone is already responsible for up to 36,000 excess deaths a year.[44]

For this reason, the BMA has declared a climate emergency and called for the UK to achieve Net Zero carbon emissions in the shortest possible amount of time. It is also why we are considering the impact of the healthcare estate on emissions and its capacity to support efforts toward net zero.

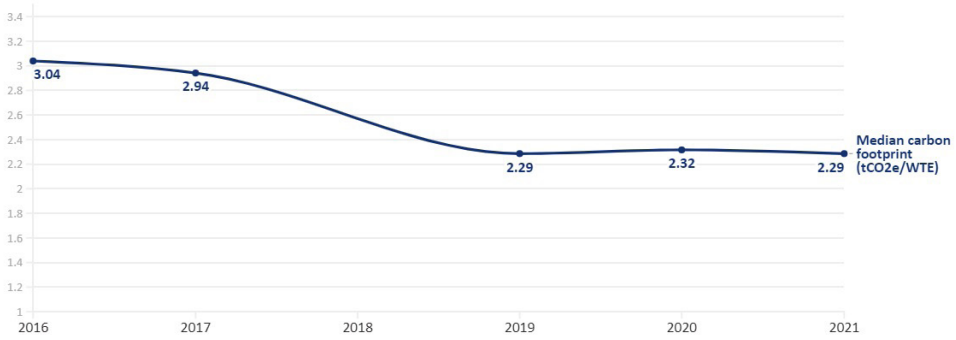
More support is needed to help healthcare organisations meet sustainability targets

It is crucial that UK Governments increase their support for healthcare organisations, who are major contributors to carbon emissions, to help them achieve sustainability goals and keep up momentum in reducing their carbon footprint.

An FOI request carried out by the BMA in December 2021 found that some progress has been made against targets to make UK healthcare estates greener, but that this progress seems to have stalled since 2019. Whilst there is inconsistent measuring of carbon footprints by NHS and HSCNI organisations across the UK, where measurements are made, progress in decreasing emissions is slowing. Since 2019, the median carbon footprint per full-time staff member has remained roughly the same (see Figure 8). This means that, as the overall workforce grows, total emissions have been increasing.

Figure 8:
Progress to reduce the carbon footprint of UK healthcare estates seems to be stalling

Median carbon footprint in tonnes of CO2 per full time staff member (tCO2e/WTE)



Source: BMA analysis of FOI responses • Due to variability in response rates, not all years have the same amount of data points. There was insufficient data available to calculate a median for 2018.

43 World Health Organisation, Climate Change. (Accessed 29 November 2022)
44 Office for Health Improvement & Disparities, Air pollution: applying All Our Health, February 2022.

It is likely that the pandemic forced health services to prioritise protecting the immediate health of the population and service delivery, and that the growing backlog of care has since further diverted attention and resources away from efforts to reduce the carbon footprint of healthcare delivery in the UK. It is crucial that UK Governments increase their support for health service organisations, who are major contributors to carbon emissions, to help them achieve sustainability goals and keep up momentum in reducing their carbon footprint.

The condition of their estate plays a major part in the sustainability of health service organisations. Given the condition of healthcare estates across the UK, capital investment to make buildings more energy-efficient – via improving insulation, modernising heating systems, and switching to renewable energy sources and modes of transport – is required.

The issue of improving sustainability within the general practice estate is potentially more challenging, given the mixed model of premises ownership across the UK. Efforts have been made to address this issue in Scotland, by allowing GP practices to take out an interest free GP Sustainability Loan from their local Health Board in order to make improvements to their premises.[45] In practice, many GPs in Scotland have struggled to access these loans due to costly and complex legal barriers, and their feedback indicates that the programme has, to date, been implemented ineffectively. However, if properly executed, the concept of making interest free loans available to practices in order facilitate premises improvements is sound.

Recommendation 21: UK governments must better support healthcare organisations to meet their carbon reduction targets; this support must include ringfenced capital funding for improvements to improve the sustainability of all health service estates across the UK.

Recommendation 22: All UK healthcare systems should explore options for the provision of interest free 'sustainability loans' to GP practices to facilitate improvements to their premises. This should be developed with the input of GPs and practice staff, to ensure these loans are accessible and easy to draw down.

Promoting sustainable modes of transportation could help reduce emissions

Another way to reduce the wider footprint of UK health services is to facilitate sustainable modes of transportation, such as public transport or cycling (as explored above). Improving infrastructures for sustainable travel is proven to promote such travel methods.[46]

Unfortunately, however, these modes of transport are often difficult to access with respondents to our survey reporting that public transport was not always a feasible option, most often because of poor links between their home and place of work:

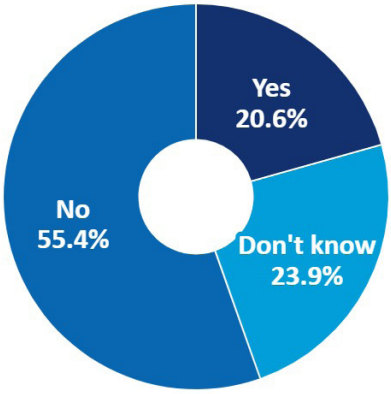
> *"Because the NHS has failed to engage with councils and the provision of bus and tram services, the only viable option for most people is to use the car to get to work." – Doctor working in secondary care*

Another barrier to more sustainable travel is the lack of adequate charging points for electric vehicles (EVs). With EV sales reaching an all-time high in the UK this year,[47] it is clear that this mode of transport is increasingly popular – and employers, including the health services, must encourage this by providing the required charging points. Though data from England suggests that the number of EV charging points is rapidly increasing – growing by nearly 70% over the last year[48] – demand is still exceeding supply. Overall, over half (55%) of the respondents to our survey indicated there are no EV charging stations available at their place at work (see Figure 9).

45 The Scottish Government, The national code of practice for GP premises, November 2017.
46 Panter J et al (2016) Impact of new transport infrastructure on walking, cycling, and physical activity, American Journal of Preventive Medicine 50(2): e45-e53.
47 Department for Transport, Office for Zero Emission Vehicles, and RT Hon Grant Shapps MP, Quick off the spark: electric vehicle sales continue to soar in green revolution, May 2022.
48 NHS Digital, ERIC (Estates Returns Information Collection) 2021/22.

Figure 9:
There are not enough EV (electric vehicle) charging points at healthcare estates

Are electric vehicle charging points available at your place of work?



Source: February 2022 BMA IT & Estates survey

BMA

Some respondents also told us that where charging points are available, they are either insufficient in number or often unusable:

> *"There are only two electric charging points for 5000 employees." – Doctor working in secondary care*

> *"There are 2 ports and often one is non-functional. Charge times are long. There is high demand. So this is woefully inadequate." – Doctor working in secondary care*

Sustainable transport options remain a key deficiency within the UK's health services and, as our members have made clear, need to be improved for the benefit of staff, patients, and progress against net zero targets.

> **Recommendation 23: All healthcare systems and local structures – such as Health Boards and ICSs (Integrated Care Systems) – should review the sustainability of transportation options to their estates and aim to further promote sustainable options in any environmental or transport plans produced.**

> **Recommendation 24: All healthcare providers should take steps to future-proof their estate for sustainable and developing transportation options, including the provision of sufficient EV charging points.**

4 Capital funding

Steeper increases in capital funding are needed

Box 4: How are healthcare estates funded?

Infrastructure projects and improvements are financed through capital funding. Capital funding is provided separately from current or resource funding and covers investment into fixed assets. Though this also includes items like machinery and medical equipment – such as CT (computerized tomography) scanners, a large share of capital expenditure is typically spent on buildings and infrastructure.

The source of capital funding used to expand, maintain, and build healthcare estates depends on the type of building and the funding models that applies to it. Generally speaking, secondary care premises such as hospitals are financed through capital investment by national governments, for which they can apply. Other mechanisms such as PFI (Private Finance Initiative) have been used to fund new builds previously and PFI contracts are still in operation in England, Northern Ireland and Scotland – but the high long-term costs of these arrangements have deterred their further use.

The funding model for primary care premises is more complex. GP premises can be privately owned, privately rented, or rented through organisations – such as NHS Property Services, Health Boards, or Health and Social Care Trusts – and responsibility for any required maintenance works varies accordingly. Whilst some GP practices are able to draw on privately owned resources to fund improvements and extensions, others are dependent on NHS Property Services or have to apply for improvement funds.

Healthcare estates have been starved of capital funding

The decay of many hospital buildings and GP practices across the UK set out throughout this report is ultimately due to underinvestment, which in turn is due to insufficient capital spending on health. Starving healthcare systems of sufficient capital investment has prevented them from maintaining the healthcare estate to a safe standard, resulting in enormous maintenance backlogs and serious safety risks. This is particularly true in secondary care. Likewise, a lack of serious capital investment has severely limited the expansion and modernisation of healthcare estates, meaning many buildings are now overcrowded, outdated, or cannot support key advancements in technology and latest sustainability standards. Many buildings also remain inaccessible for some staff and patients.

Though it is normal for capital spending to fluctuate as large projects commence and finish, capital investment in the UK has been consistently low over the last two decades compared to historic capital spend. The level of capital funding available to the UK's health services was particularly impacted by the period of economic austerity following the 2008 financial crash, with revenue and running costs often taking precedence over longer-term capital investment – and funding being explicitly transferred out of capital budgets.[49] In the ensuing decade, health sector investment in the UK dropped by more than a third,[50] and did not recover fully until the COVID-19 pandemic forced an uplift in investments.

As a result of consistent underspending in this area in recent years, the total value of existing capital in healthcare in the UK is low. Analysis by the Health Foundation found that, between 2000 and 2017, the value of health capital per healthcare worker in the UK fell by 35%,

49 The King's Fund, Capital investment in the NHS, July 2022.
50 OECD, Capital expenditure in the health sector, in: Health at a glance 2021, November 2021.

dropping significantly below most other European countries.[51] This means that fixed assets in use within the healthcare system will be fewer and more outdated, as reflected in the shortage of hospital beds mentioned earlier in this report.

Capital spend in the UK has also grown at a consistently slower speed compared to current spend for more than a decade (see Figure 10).[52]

Figure 10:
Capital spend on health has been growing at a slower pace than current spend since 2011

Indexed change of capital versus current spend on health (UK - real terms)

Source: BMA analysis of PESA 2022 data • Real terms calculated using GDP deflator September 2022

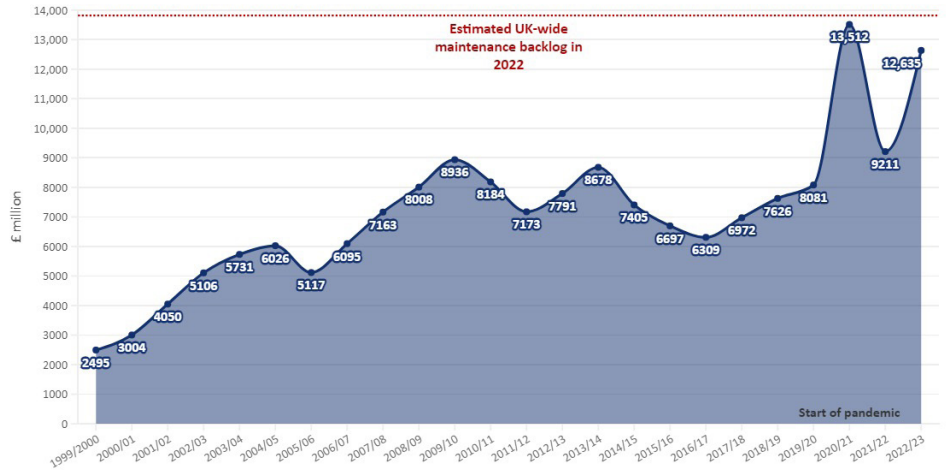
On a positive note, real-terms capital investment into the UK health services has increased in recent years.[53] Even before the pandemic triggered a huge injection of money into both capital and current health budgets, real-terms capital expenditure had been on the rise since 2016-2017, though not as much as planned since capital budgets were raided for current spending.[54] In 2021-2022, government-funded capital expenditure on health in the UK was £9.2 billion[55] – which amounts to 4.2% of the overall spend on health – and it is set to reach £12.6 billion in real terms in 2022-2023.[56]

Yet it is clear that this does not suffice. As discussed earlier in this report, the cumulative maintenance backlog across the UK amounts to nearly £14 billion, more than the total capital budget for health this year (see Figure 11). This means that, even if the entire budget was spent on fixing the maintenance backlog, it would still not be cleared – and no money would have been spent on newbuilds, equipment, and other fixed assets.

51 The Health Foundation, UK investing less in health care infrastructure compared to other EU countries, October 2019.
52 BMA analysis of PESA 2022 data. Prices in real terms using the GDP deflator September 2022.
53 The King's Fund, Capital investment in the NHS, August 2022; real-term prices in the report are for 2021-2022.
54 BMA analysis of PESA (Public Expenditure Statistical Analyses) 2022 data. Prices in real terms using the November 2022 OBR GDP Deflator.
55 PESA (Public Expenditure Statistical Analyses) 2022, prices in nominal terms.
56 BMA analysis of national draft budgets: Autumn Statement 2022 (England), Scottish budget 2022/23, Wales draft budget 2022/23, Northern Ireland draft budget 2022-25. Prices in real terms using the November 2022 OBR GDP Deflator.

Figure 11:
Capital spend on health has increased in recent years, but not enough

Capital spend on health in real terms (UK, £ millions)



Real terms calculated using GDP deflator November 2022

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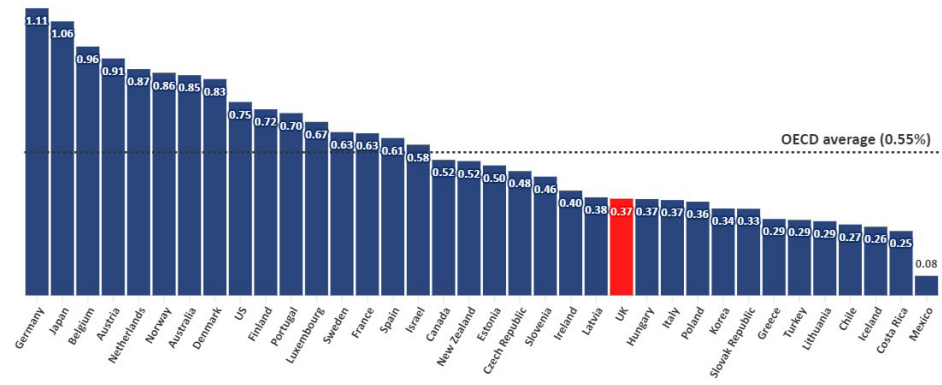
Comparison with other OECD nations further demonstrates that capital spend on health within the UK has been low. Between 2015 and 2019, the UK spent on average 0.37% of its Gross Domestic Product (GDP) on capital health expenditure, well below the 0.55% OECD average (see Figure 12).[57] Similarly, the Health Foundation has found that the UK should have increased capital investment in healthcare by £33 billion over the past decade to match the EU14 average.[58]

Figure 12:
Capital spending on health in UK has been low compared to other OECD countries

Share of Gross Domestic Product (GDP) spent on capital formation in the healthcare system between 2015 and 2019 (%)



Source: OECD • Includes public as well as private spending.

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57 OECD, Health at a glance 2021, November 2021; capital spending on health includes private spending.
58 The Health Foundation, How does UK health spending compare across Europe over the past decade?, November 2022. Average only covers Austria, Denmark, Finland, France, Greece, Ireland, Luxembourg, and Sweden due to data availability.

More capital investment is required to meet targets, reduce waiting lists and save money long-term

If healthcare systems are to meet their performance targets and tackle waiting lists capital investment into the estate has to increase. Small and decaying estates impede the capacity of healthcare systems to deliver against national waiting list strategies and transformation programmes, thereby hindering the delivery of patient care and post-pandemic catch-up in the short, medium, and long-term.

Nine out of 10 health leaders in England recently expressed concern that underinvestment in buildings and the estate is hindering efforts to reduce waiting lists. The same number said that targets set out in the NHS England Long Term Plan cannot be met without further capital investment.[59] Or as former Health Secretary Jeremy Hunt put it, 'infrastructure issues are clearly a big risk to progress on the backlog.' Timely capital investment is an absolute must if targets are to be met:

> "After 20 years, we have only just had a refurbishment. Our previous plans if implemented 20 years ago would have now been able to deliver on aspirations of the Long Term Plan." – Doctor working in general practice

> "We have had no premises funding or improvement for 30 years. Successive NHS managers have ignored all calls for support." – Doctor working in general practice

Moreover, capital investment is a way to save money in the future, rather than just an expenditure: for example, maintenance that is long overdue typically costs more than early interventions, and investment in digital technologies can help maximise limited staff time for patient care and therefore save money in the future. As such, increased capital investment is needed to improve staff and patient safety, meet national targets and deliver much-needed expansion, and save money in the long term.

Recommendation 25: Higher levels of capital funding must be provided in order to address long-term underinvestment and its impact on healthcare estates.

Recommendation 26: UK governments must ensure that previous mistakes are not repeated, by protecting capital spending budgets so they cannot be used to offset deficits in other budgets.

Recommendation 27: UK governments should have a long-term capital investment strategy to ensure capital spending is allocated to key areas of priority, including ringfenced budgets to address maintenance backlogs and a clear plan of how and when maintenance backlogs will be resolved.

Funds need to be easily accessible and costly past mistakes must be avoided

Besides an increase in available funding, application processes for capital investment must also be improved. Research by the NHS Confederation has shown that health and care leaders find the capital application system 'disjointed and opaque'.[60] Similarly, GPs have expressed their discontent with funding processes:

> *"Get rid of bureaucracy, provide direct funding to practices to improve patient access and services." – Doctor working in general practice*

59 NHS Confederation, Lack of capital funding risking patient safety and impeding waiting list recovery: new poll of NHS leaders, June 2022.
60 https://www.nhsconfed.org/publications/beyond-bricks-and-mortar-capital-funding-NHS

"Despite providing a personally financed purpose built building I am unable to obtain any financial support to install air conditioning etc." – Doctor working in general practice

"Trust owned building. Very hard to get any agreement for necessary changes due to covid." – Doctor working in general practice

It is also important to reiterate that, while alternative forms of investment may need to be considered given the scale of funding required to address both the maintenance backlogs and wider, long-term investment needs, PFI (Private Finance Initiative) is not the answer to the estates problem.

In fact, as the IPPR (Institute for Public Policy Research) has found, the cost of PFI contracts remains a major part of the problem, with hospitals in England facing a bill of £80bn in return for just £13bn of investment.[61] Likewise, research in Scotland has found that the Scottish NHS is paying back £10bn for hospitals that cost only £2bn to build.[62] The same difficulties are present in Northern Ireland, where at least one Trust owes £580m for a hospital that cost £224m.[63]

The Nuffield Trust has suggested that health authorities may look to buy-out PFI contracts, as has occurred in some areas, to minimise long-term costs, which should be considered more intensively at a national level.[64] The cautionary tale of PFI clearly illustrates that direct capital funding is needed and that we cannot afford to repeat the missteps of earlier hospital building programmes.

Similar problems abound in general practice. For example, NHS England's ETTF (Estates and Technology Transformation Fund) was set up as a multi-million-pound investment in general practice facilities and technology, operating between 2015/16 and 2019/20. However, a large portion of these monies went unspent despite urgent need, due in large part to arduous policy processes and legal barriers to accessing the funding.

Recommendation 28: Ensure application and decision processes for capital funding (in primary and in secondary care) are clear, transparent, and reduce bureaucracy to a minimum.

Recommendation 29: Governments and health services should consider options to buy-out or otherwise remove the burden of PFI contracts and their ongoing heavy costs.

61 Institute for Public Policy Research (IPPR) press release, NHS hospitals under strain over £80bn PFI bill for just £13bn of actual investment, finds IPPR, September 2019.
62 Daily Record, PFI scandal as Scottish NHS faces £10billion bill for hospitals that cost £2billion, April 2017.
63 Belfast Telegraph. Western Trust owes private sector £580m for a hospital that cost £224m to build, September2022.
64 The Nuffield Trust, Making sense of PFI, October 2017.

Conclusion

Images of hospitals and GP practices are some of the first things that spring to mind when thinking about the UK's health services. When at their best, these buildings serve as physical reminders of both the part national health services play in our lives and of the vital role local healthcare facilities have as anchor institutions within communities.

However, the experiences of the BMA's members make absolutely clear that much of the UK's healthcare estates are in appalling condition, to the detriment of staff, patient care, and the environment.

As this report argues, the condition of these essential buildings cannot be allowed to deteriorate further, for the safety of patient care and wellbeing of doctors, and for the long-term sustainability of healthcare services.

Likewise, governments and health service leaders have to see improving the bricks and mortar of our health services as an investment, not a cost. Increasing capital spending and supporting infrastructure projects will make patient care safer; the delivery of care more efficient; help improve staff retention, morale, and wellbeing; and support health services in meeting sustainability targets and reducing waiting lists. Capital investment also provides value for money and a boost to the economy.

Governments across the UK must act now, before it is too late.

Appendix A: Methodology

In February 2022, the BMA launched a survey on IT and estates that explored in more detail the challenges doctors face with IT and physical estates. This was a UK-wide survey with a total of 499 respondents working in primary, secondary, and community care.

We have noted throughout the report where member insights were obtained from each survey.

The report covers primary care, secondary care, community care, and mental health estates, presenting the experiences and views of doctors working across these sectors. It also presents a UK-wide perspective, acknowledging that the challenges posed by and to healthcare estates are largely consistent across NHS England, HSCNI (Health and Social Care Northern Ireland), NHS Scotland, and NHS Wales.

Appendix B: Summary of recommendations

Recommendation 1:
All UK governments must launch transparent and independently audited national reviews of the condition of their respective healthcare estates, building on existing work where appropriate.

Recommendation 2:
Doctors should be empowered to immediately raise concerns where building conditions present a risk to patient safety.

Recommendation 3:
All UK regulators with a remit covering healthcare estates should, as part of their regular assessments, consider the impact of the availability of capital funding on the quality of those estates and the care provided within them.

Recommendation 4:
UK governments should provide the necessary funding to urgently clear existing maintenance backlogs – or decide to rebuild sites that may no longer be appropriate to repair – in order to protect doctors and patients, and to prevent any further growth in the already enormous list of outstanding and costly remedial repairs.

Recommendation 5:
All UK governments must be fully transparent regarding maintenance backlogs within the publicly owned healthcare estate, publishing these figures at least annually.

Recommendation 6:
As part of the independently audited review of healthcare estates called for by the BMA, all UK governments and health systems must carry out an urgent review of IPC and ventilation across the primary and secondary healthcare estate, with dedicated funding for improvements and retrofitting.

Recommendation 7:
All UK governments and health services must link their IT and digital transformation programmes with the wider development and enhancement of their healthcare estate, to ensure that hospitals and GP practices are capable of supporting new technology and IT systems.

Recommendation 8:
Funding must be provided to allow hospitals and GP practices to upgrade or retrofit their premises to allow for new technology to be fitted or better accommodated.

Recommendation 9:
All buildings should have adequate Wi-Fi accessibility and high-speed broadband connections, those without should receive urgent support to make the necessary improvements. Future new builds or refurbishments should be designed with these factors in mind as well as the need to allow for future connection methods to be installed.

Recommendation 10:
All providers should ensure break spaces are made available in the short-term, and that all new buildings and expansions include guaranteed break spaces compliant with guidelines set out in the BMA Fatigue and Facilities Charter and Junior Doctor wellbeing checklist, designed with the direct input of doctors.

Recommendation 11:
As part of the independently audited review of their healthcare estates called for by the BMA, all UK governments and health services should assess the availability and quality of dedicated staff break space in their healthcare facilities, building on best practice and the input of doctors and staff. Health services and providers should then work directly with trade unions to design and implement improvements to break space.

Recommendation 12:
All doctors must have access to quiet, comfortable office spaces where they can work without interruption, and discuss confidential matters in private.

Recommendation 13:
The national reviews of healthcare estates called for by the BMA must include assessments of the availability and quality of training space.

Recommendation 14:
In the medium term, additional clinical space must be created through the safe expansion of existing premises and, where needed, through newbuilds. This requires substantial capital investment so that more funding can be made available to hospitals and GP practices, as well as other healthcare premises.

Recommendation 15:
Any nationally mandated increase in primary care staffing within GP practices must be accompanied by additional funding for premises expansions and improvements, in order to properly accommodate additional staff.

Recommendation 16:
Funding should be made available to GP practices and hospitals to make necessary accessibility improvements where possible or – where not – to ensure new premises are fully accessible as standard.

Recommendation 17:
All healthcare providers must carry out an assessment of their accessibility by transport and the transport options available for staff and patients.

Recommendation 18:
All healthcare providers should work to improve the accessibility of their sites, including by improving cycle storage and by working with public transport providers to improve access for staff and patients.

Recommendation 19:
Where alternative options are not available or viable, healthcare providers must also improve car parking facilities – including their safety and accessibility – and offer free parking to staff and patients.

Recommendation 20:
All estates planning – including plans for individual hospitals and buildings – should draw on the experiences and input and fully involve doctors, staff, and patients.

Recommendation 21:
UK governments must better support healthcare organisations to meet their carbon reduction targets; this support must include ringfenced capital funding for improvements to improve the sustainability of all health service estates across the UK.

Recommendation 22:
All UK healthcare systems should explore options for the provision of interest free 'sustainability loans' to GP practices to facilitate improvements to their premises. This should be developed with the input of GPs and practice staff, to ensure these loans are accessible and easy to draw down.

Recommendation 23:
All healthcare systems and local structures – such as Health Boards and ICSs (Integrated Care Systems) – should review the sustainability of transportation options to their estates and aim to further promote sustainable options in any environmental or transport plans produced.

Recommendation 24:
All healthcare providers should take steps to future-proof their estate for sustainable and developing transportation options, including the provision of sufficient EV charging points.

Recommendation 25:
Higher levels of capital funding must be provided in order to address long-term underinvestment and its impact on healthcare estates.

Recommendation 26:
UK governments must ensure that previous mistakes are not repeated, by protecting capital spending budgets so they cannot be used to offset deficits in other budgets.

Recommendation 27:
UK governments should have a long-term capital investment strategy to ensure capital spending is allocated to key areas of priority, including ringfenced budgets to address maintenance backlogs and a clear plan of how and when maintenance backlogs will be resolved.

Recommendation 28:
Ensure application and decision processes for capital funding (in primary and in secondary care) are clear, transparent, and reduce bureaucracy to a minimum.

Recommendation 29:
Governments and health services should consider options to buy-out or otherwise remove the burden of PFI contracts and their ongoing heavy costs.

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