



National Audit Office



REPORT

# Progress with the New Hospital Programme

Department of Health & Social Care, NHS England

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## Key facts

**40**

number of new hospitals the government originally committed to build in England by 2030, in addition to eight hospital construction schemes previously approved

**32**

number of new hospitals the government now plans to build in England by 2030, according to its original definition, with a further eight to be completed after 2030

**£3.7bn**

capital funding provided in the 2020 Spending Review for new hospitals in the period up to 2024-25

**£18.5bn**

indicative maximum capital funding for new hospitals for 2025-26 to 2030-31, decided in early 2023 but subject to future spending reviews

**£10.2 billion** value of backlog maintenance in the NHS hospital estate in 2021-22, compared with £4.7 billion in 2013-14 (at 2021-22 prices)

**3 of 8** number of hospital schemes that have opened (or partly opened) to date from cohort 1 of the New Hospital Programme – with one exception, schemes in cohort 1 do not count towards the target of 40 new hospitals because they pre-date the commitment

**Late 2023** forecast operational date of the first new hospital that counts towards the 40 new hospitals commitment (Dyson Cancer Centre, Bath)

**Late 2025** forecast operational date of the second new hospital that counts towards the 40 new hospitals commitment (Shotley Bridge Hospital, County Durham)

**95%** the New Hospital Programme’s assumption of average bed occupancy in new hospitals built using the minimum viable product version of its Hospital 2.0 design – this compares with NHS England’s priority to reduce bed occupancy to no more than 92% in 2023-24.

**62%** proportion of posts in the New Hospital Programme’s central team (223 out of 361) that were filled using consultancy services in February 2023

**4** the number of main contractors in the UK that have told the New Hospital Programme they would consider building a large, complex hospital scheme

**Over £1.0 billion** average estimated cost of replacing each of the five hospitals entirely made of reinforced autoclaved aerated concrete but not originally included in the New Hospital Programme

# Summary

**1** The NHS in England has around 1,500 hospitals, where most emergency and elective care is carried out. The hospital estate contains many old buildings and its condition has been deteriorating. In response, in 2020, the government announced the New Hospital Programme (NHP) and committed to build 40 new hospitals by 2030.

## **Scope of this report**

**2** This report examines whether NHP is being managed in a way that is likely to achieve value for money. To reach our conclusions, we considered the extent to which NHP:

- was designed and set up to manage the programme effectively;
- is making progress against its baselines for time, cost and quality; and
- is effectively identifying and managing the main risks to successful delivery.

**3** Our report is organised in four parts, which cover:

- the need for new hospitals (Part One);
- progress made by NHP between 2020 and 2023 (Part Two);
- issues, risks and opportunities for NHP (Part Three); and
- how government reset NHP in May 2023 (Part Four).

**4** NHP comprises many local construction schemes. While this report sometimes discusses individual schemes by way of example it does not set out to provide a detailed assessment of each scheme.

## Key findings

The need for hospital investment

**5 The condition of the NHS estate has seriously deteriorated in recent years because of under-investment.** In 2021-22, 43% of the NHS estate dated from before 1985 and the total maintenance backlog was £10.2 billion, more than twice as high in real terms as in 2013-14. Twenty-two NHS trusts had backlog maintenance of over £100 million each. In the five years to 2018-19, the Department of Health & Social Care (DHSC) and NHS England diverted £4.3 billion of planned capital spend to fund day-to-day spending. Overall, parts of the NHS estate do not meet the demands of a modern health service, meaning many hospitals would benefit from refurbishment or replacement rather than just repairs (paragraphs 1.2 to 1.4, and Figure 2).

**6 Seven entire NHS hospitals and parts of several others are known to be structurally unsound and urgently need replacement.** From the 1960s to the 1980s, builders made extensive use of reinforced autoclaved aerated concrete (RAAC), a lightweight building material. From the late 1990s onwards, industry bodies warned that RAAC was unlikely to be structurally sound for much more than 30 years. A school roof collapse led to a national alert in 2019 about the risk of sudden failure and NHS England asked trusts to survey their estate for RAAC. Surveys found 41 buildings at 23 trusts containing the material, including seven hospitals with RAAC present throughout. The government has committed to eradicate RAAC from the NHS estate by 2035 and allocated £685 million over five years up to 2024-25 to mitigate immediate safety risks (paragraph 1.5 and Figure 3).

**7 In 2020, DHSC set up the New Hospital Programme (NHP) to build 40 new hospitals by 2030 and to improve the NHS's approach to construction.** DHSC created a Health Infrastructure Plan (HIP) in 2019 as a long-term programme to modernise the NHS estate, after several years when it built very few hospitals. Under HIP, DHSC planned 27 new hospital schemes by 2030. In October 2020, the government announced an expansion of DHSC's capital plans, stating that 40 new hospitals would be built by 2030, in addition to eight other hospitals that were in construction or pending final approval. DHSC set up NHP to deliver this commitment and manage all 48 schemes as a portfolio. It also tasked NHP with identifying ways to improve the efficiency and quality of hospital construction, including through greater standardisation, modern methods of construction, and a centralised approach to contracting. A timeline for NHP is at **Figure 1** on pages 8 and 9 (paragraphs 1.6 to 1.11 and 3.5).

## Initial funding and selecting schemes for NHP

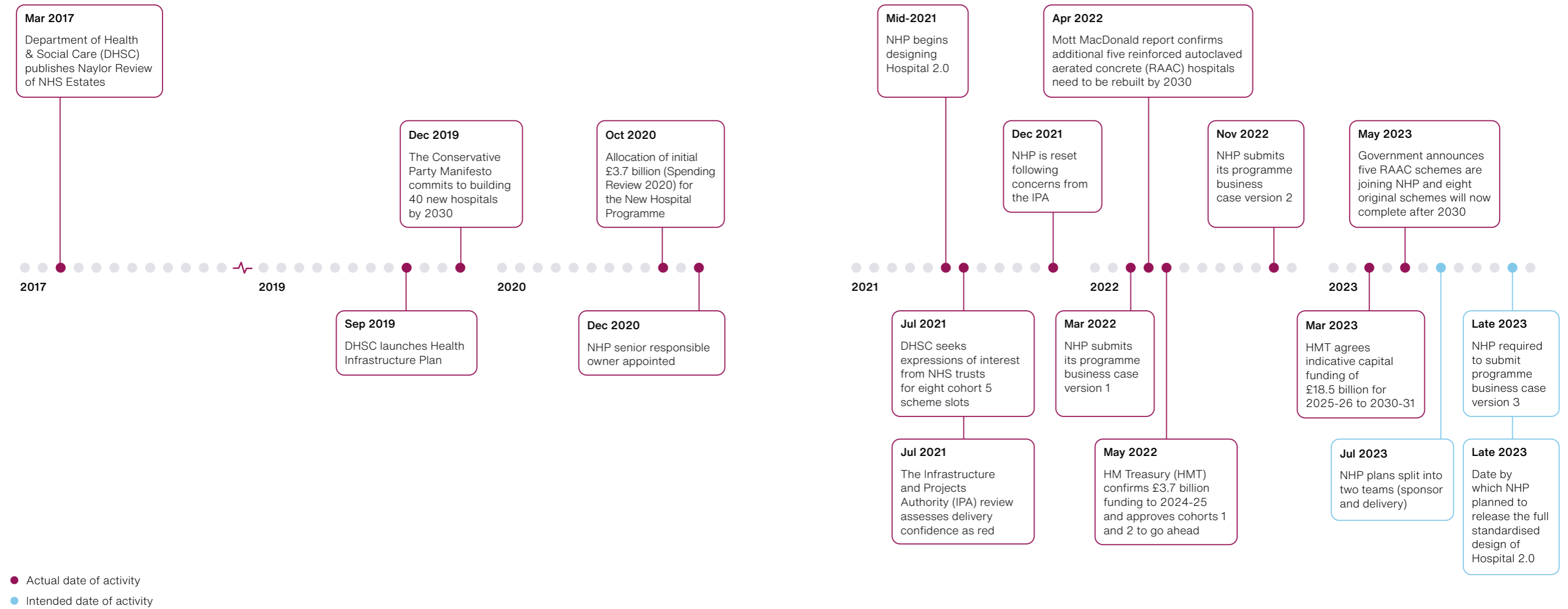
**8 In October 2020, DHSC announced 32 of the 40 new hospital schemes, but the announcement did not explain the uncertainty in government about whether all the schemes could be afforded and completed on time.** DHSC announced the locations of 32 new construction schemes in October 2020, providing brief details of the kind of improvement each would result in. These were in addition to the eight older schemes NHP was managing which did not count towards the 40 new hospitals commitment. NHP planned to add a final eight schemes later. For management purposes, NHP subsequently allocated the schemes to cohorts:

- cohort 1 – seven schemes in construction or pending full approval before NHP came into existence, which do not count towards the 40 new hospitals commitment, and one new hospital, the Dyson Cancer Centre (in Bath);
- cohort 2 – 10 schemes entering construction in the years up to 2024-25, nine of which were new hospitals and one of which (the National Rehabilitation Centre, near Loughborough) was considered to be a pre-existing scheme that does not count towards the 40 new hospitals commitment;
- cohort 3 – eight schemes mostly or entirely for construction from 2025-26 onwards;
- cohort 4 – 14 further schemes for construction from 2025-26 onwards; and
- cohort 5 – eight further schemes not yet selected, which NHP would construct in the late 2020s.

The October 2020 announcement stated that the 40 identified schemes (cohorts 1 to 4) would be “fully funded”. However, in the 2020 Spending Review, HMT only allocated capital funding of £3.7 billion to NHP for the four years up to 2024-25. It intended NHP to use this mostly for pre-existing and early new schemes (cohorts 1 and 2). Government had still not made funding and scoping decisions about later cohorts because DHSC had not yet developed the new centralised, standardised approach to build them. This means there was inherent uncertainty about whether the specific schemes announced for cohorts 3 and 4 and the additional schemes scheduled for cohort 5 were affordable and achievable (paragraphs 2.4, 2.10, 2.11, 2.24 and 3.3).

**Figure 1**  
New Hospital Programme timeline, 2017 to 2023

The impetus for major investment in hospitals grew from 2017 and the third programme business case for the New Hospital Programme (NHP) is expected in late 2023



Source: National Audit Office analysis of New Hospital Programme documentation

**9 In response to our requests, DHSC has not been able to document fully the process used to select the 32 schemes announced in October 2020.** For large capital programmes, we expect government to use clear, defensible criteria for the selection of schemes within a programme and to maintain records of its decisions. All but one of the 32 schemes announced in October 2020 were previously part of a HIP scheme, so we reviewed the selection process for HIP. We found that DHSC, supported by NHS England, had employed clear, evidence-based criteria to create a shortlist of schemes for HIP, but the list was later adjusted substantially, removing seven shortlisted schemes and replacing them with 14 others. Officials have told us that the final selection of schemes involved choices and judgements for which no further documentation is available. The failure to document this part of the process is an omission which means there is no basis for us to determine why DHSC selected these schemes (paragraphs 1.9 and 2.7).

**10 The 32 schemes included only two of seven entirely RAAC hospitals, and fewer than half the schemes can be categorised as complete rebuilds or completely new hospitals.** At the start of NHP, DHSC included two entirely RAAC hospitals in the programme. DHSC had proposed that the other five be included, but government instead decided to request a further assessment of the risks. Overall, DHSC adopted a broad definition of a “new hospital” for the purposes of the 40 new hospitals commitment. This includes completely new hospitals and complete rebuilds of existing hospitals, but also major new buildings at existing sites, and major refurbishments of existing hospital buildings. Excluding the eight pre-existing schemes, our analysis of the 32 new hospitals announced in October 2020 suggests that, as announced, 11 (34%) represented whole new hospitals, with another 20 (63%) meeting other elements of DHSC’s definition. One scheme does not meet the definition: Christchurch Hospital in Dorset, which was always a very small scheme and subsequently reduced further in scope. In response to this descoping, NHP intends to split another scheme into two (St. Ann’s Hospital in Poole and Alumhurst Road psychiatric unit in Bournemouth), counting each as a separate new hospital for the purposes of the target (paragraphs 2.6, 2.8 and 2.11).

**11 After DHSC received less funding than it assessed it needed for NHP’s first four years, it decided to start with smaller schemes and leave most construction for the final six years.** In 2020, DHSC estimated it needed between £19.8 billion and £29.7 billion of capital funding to build 48 hospitals by 2030 (cohorts 1 to 5). This included between £3.7 billion and £16 billion for the programme’s first four years up to 2024-25. HMT’s decision to provide £3.7 billion up to 2024-25 necessarily meant more of NHP, including most of its larger schemes, being delivered towards the end of the decade. In options appraisal, DHSC called this option “maximum risk and policy compromises”. This increased the risk that in later years many schemes would need to be under construction at once, meaning it could be harder to find construction companies willing or able to build them for a good price (paragraphs 2.3 to 2.5).

## Progress with cohorts 1 and 2

**12 In its first three years, NHP made slow progress constructing hospitals in cohorts 1 and 2.** By June 2023, three of the eight schemes in cohort 1 had opened or part opened against an expectation of five. The other five schemes had been delayed by between one month and 16 months. For cohort 2, NHP expected all 10 schemes to enter construction between 2022 and 2024. By May 2023, no building had started, although some pre-construction site works valued at £11 million had been funded by NHP. NHP told us this was due to delays approving individual business cases. It now expects the first scheme that will count towards the 40 new hospitals commitment – the Dyson Cancer Centre, in Bath – to open in late 2023. The second – Shotley Bridge Hospital, in County Durham – is expected to open in late 2025 (paragraphs 2.14, 2.15, 2.18, 2.19 and 2.21, and Figures 8 and 9).

**13 Forecast costs for schemes in cohorts 1 and 2 increased by 41% between 2020 and 2023.** In 2020, NHP was allocated £2.0 billion for cohort 1 schemes but by March 2023 their forecast cost had grown to £2.7 billion. Similarly, the allocation for cohort 2 schemes was £916 million in 2020 but forecast costs had increased by March 2023 to some £1.3 billion. The causes of cost increases include higher-than-expected inflation and under-estimation of costs by some NHS trusts. Additionally, for reasons that are unclear DHSC had not budgeted for essential elements of two of the schemes: the Royal Liverpool University Hospital and Brighton 3Ts schemes are now forecast to cost some £400 million more than it expected. Where these costs fall in the period up to 2024-25, they must be met from NHP's £3.7 billion of capital funding, reducing contingency and the funding available for pre-construction works on cohorts 3 and 4. By March 2023, NHP had spent £1.1 billion of its allocation, which was broadly in line with expectations at the 2020 Spending Review (paragraphs 2.13, 2.16, 2.17 and 2.20).

## Progress with cohorts 3, 4 and 5

**14 NHP has been planning for schemes in cohort 3 and later to use an innovative standardised hospital design and modern methods of construction to reduce costs and timescales and improve the quality of new hospitals.** Since 2021, NHP's central team has been developing the first standardised hospital design for England, Hospital 2.0, which it hopes will make construction more efficient. Hospital 2.0 will utilise modern methods of construction, which involve the offsite manufacture of major building components, as was used for the construction of The Grange University Hospital in Wales. NHP intends to introduce Hospital 2.0 in stages and estimates that, by cohort 4, hospital construction will be 25% cheaper and 20% quicker compared with traditional approaches. Standardisation can bring efficiencies and other advantages but NHP still needs to demonstrate that this level of efficiency is achievable (paragraphs 2.28, 3.6 and 3.7).



**15 NHP currently assesses it will take until May 2024 to complete the challenging task of developing a standard hospital.** In April 2022, the government's Infrastructure and Projects Authority (IPA) advised NHP to increase its internal capacity so it could complete the design by the end of 2022. During 2022, NHP's plan was to complete the design in three stages up to December 2023. But NHP struggled to recruit sufficient technical staff to achieve this. It now expects to complete the design by May 2024. Until Hospital 2.0 is finished there are limits to NHP's ability to make progress with planning schemes in cohort 3 and later. In the longer term, NHP is developing an environmental strategy to support its aim that the construction and operation of new hospitals can become net zero carbon by the 2040s (paragraphs 3.8, 3.9, 3.14 and 3.15).

**16 There is a risk that a minimum viable product (MVP) version of Hospital 2.0 which NHP is considering will result in hospitals that are too small.** During 2022 NHP created an MVP version of its high-level Hospital 2.0 specifications. NHP intended this version to be sufficient to achieve its key strategic objectives and critical success factors for the lowest possible cost. It results in smaller hospitals with lower initial building costs and lower running costs than other potential specifications. NHP has estimated that new hospitals built according to MVP would deliver £4.80 of benefits for every £1 of cost. We have examined how MVP has been modelled and are concerned that some of NHP's underlying assumptions may result in hospitals that are not big enough for future needs.

- One set of assumptions, called 'model of care shifts', presumes patient care will increasingly shift out of hospitals into adult social care, outpatient services, and community and digital healthcare. MVP assumes a recurring permanent 1.8% reduction each year in the need for hospital capacity because of these shifts. The reduction compounds over 60 years and more than cancels out the assumption of increasing demand due to an ageing and growing population. DHSC and NHS England want to shift care increasingly out of hospitals in future but do not have a funded strategy to deliver these shifts on this scale. NHS England told us this will depend on the next spending review.
- Secondly, NHP assumes building future hospitals with only single-bedded rooms, instead of open wards, will enable them to run at 95% occupancy and with average patient stays reduced by 12%. England already has one of the highest rates of bed occupancy and one of the shortest lengths of stay per patient in the Organisation for Economic Co-operation and Development (OECD). Currently, 95% occupancy is viewed as highly undesirable and indicative of crisis, and NHS England has a priority to reduce it to 92% across the NHS in 2023-24. There is a risk that running hospitals very full in future may affect their smooth operation and reduce the amount of spare capacity for coping with normal variations in demand, unexpected shocks and health crises. Specifically, the assumed 12% reduction in length of stay looks high. A recent systematic review of the effect of single beds on length of stay, funded by NHP and published in the British Medical Journal Open, found "the evidence was highly mixed with no clear benefit".

NHP officials told us that NHP's current MVP model was not necessarily the final position that would determine the size of future hospitals (paragraphs 3.11 to 3.14).

**17 NHP recognises the importance of construction companies to its innovative plans for cohort 3 and beyond, but it has not yet engaged meaningfully with the industry about key aspects of the programme.** The UK has a number of large infrastructure projects underway and NHP has identified only four main contractors who would consider building a complex, large (valued in excess of £600 million) new hospital. Contractors may well have a choice about the schemes they pursue in the second half of the 2020s, given high demands on their capacity. NHP has identified other risks, including a shortage of factory capacity to manufacture offsite building components, key to its plan to use modern methods of construction. Delays in developing Hospital 2.0 and in agreeing programme funding have constrained NHP's ability to engage with the industry and provide it with detailed information on the commercial pipeline and Hospital 2.0 (paragraphs 3.20 to 3.23, and Figure 11).

The NHP team's capacity and skills

**18 Professional and technical consultancy is a normal part of large construction programmes, but NHP has had difficulty staffing its team adequately and has depended more than it wanted to on consultancy services.** By February 2023, the NHP team had filled 361 posts but 165 (31%) were vacant, including five out of 12 executive posts. Of the 361 posts, it had filled 109 (30%) with permanent employees, while 223 (62%) were filled through consultancy services. Between April 2021 and March 2023, NHP incurred resource expenditure of around £89 million, £70 million (79%) of which it spent on consultancy services. It expects to continue to rely on delivery partners to provide professional and technical skills and for specific assignments, estimating £842 million consultancy spend between 2023-24 and 2030-31, 75% of its total resource expenditure for those years. While the use of consultancy services is normal on large construction programmes, relying on them, particularly in a long-term programme, brings risks of a lack of continuity and loss of knowledge (paragraphs 3.16 to 3.19, and Figure 10).

Agreeing further funding for the NHP and resetting the programme

**19 It has taken DHSC longer than it expected to secure a clear indication of the capital funding available for NHP from 2025-26 onwards; this has created difficulties, but recent decisions have brought useful clarity about funding.**

From October 2020 until the first half of 2023, NHP did not know how much it could spend on building new hospitals up to 2030. It took until March 2022 for NHP to produce its first programme business case. Neither this nor a second version later in the year were sufficient to persuade government's Major Projects Review Group to recommend a funded scope for NHP for the period after March 2025. NHP's discussions with MPRG have been iterative and, during 2022, among other things, HMT was able to approve investment in a programmatic approach to deliver schemes within the £3.7 billion of funding already allocated. However, during 2022, it considered that it was impossible to set an indicative budget for later years due to issues with the scope of the programme, delivery capacity and the programme plan. In March 2023, HMT agreed a funding envelope and scope (subject to future spending reviews), indicating that the maximum NHP could expect to spend on new hospitals between 2025-26 and 2030-31 was £18.5 billion. It asked NHP to submit a third version of its programme business case requiring no more than this amount by the end of 2023 (paragraphs 2.27, 3.2, 3.3, 4.2 and 4.5).

**20 The schemes in NHP will change fundamentally following recent decisions; all entirely RAAC hospitals will now be replaced by 2030 but, by the definition used in 2020, NHP will no longer construct 40 new hospitals by 2030.** In May 2023, DHSC announced a major reset of the content and timing of NHP's schemes, which it expects NHP to reflect in its third business case. NHP will now include all seven entirely RAAC hospitals (the five additional RAAC hospitals in effect becoming NHP's cohort 5), but eight cohort 4 schemes will be delayed until the 2030s. DHSC will count three mental health hospital construction schemes towards the 40 new hospitals commitment, despite these having been approved outside NHP during 2022 and not previously counted. Even if these schemes are included and St. Ann's Hospital in Poole and Alumhurst Road psychiatric unit in Bournemouth are counted as two schemes, by our analysis the other announced changes mean that DHSC's plans would now lead to only 32 new hospitals by 2030, according to the definition it used in 2020. Another eight new hospitals will follow after 2030 (paragraphs 2.11, 4.2, 4.4 and 4.5).

**21 NHP has affordability challenges to address in its third programme business case, which may reduce the scope of future hospitals or cause it to delay more schemes until the 2030s.** The maximum funding level HMT has indicated (subject to future spending reviews) is less than NHP requested in its second business case: £18.5 billion for the period 2025-26 to 2030-31 instead of £21.3 billion, reflecting the changed scope of delivery required by 2030. NHP has previously assessed that entirely RAAC hospitals are likely to be relatively expensive to replace, on average over £1 billion per scheme, but it no longer needs to complete work on eight of the cohort 4 schemes by 2030. In developing its third business case, NHP will need to find more savings, possibly by reducing the specification of its MVP version of Hospital 2.0 or by rescheduling more schemes so that they are not completed until the 2030s (paragraphs 2.25, 4.2 and 4.5).

**22 NHP has been a high-risk programme from the start; government has more to do in the coming months to reduce the delivery risks it faces.** NHP is an ambitious and high-risk programme in many ways, requiring the highest standards of programme and project management. Due to its scale, it also requires effective and timely cross-government working. The IPA has been closely engaged in challenging, assuring and supporting the programme so far. Its confidence that NHP would deliver has varied between amber (successful delivery appears feasible but significant issues already exist, requiring management attention) and red (successful delivery of the project appears to be unachievable) over the last three years. NHP has an assigned team, with some members who have proven track records of delivering complex programmes. To date, in part because of difficulties securing approval of its programme business case and funding, this has not been enough to keep the programme on track. The next year is a critical period during which NHP needs to consolidate its scope, timetable, funding and approach to construction (paragraphs 2.12 and 3.23 to 3.26 and Figure 13).

## **Conclusion**

**23** DHSC launched NHP at a time when hospital construction was badly needed after years of underinvestment and in the context of a large maintenance backlog. The programme has innovative plans to standardise hospital construction and, based on experience elsewhere, there is reason to believe that these could deliver efficiencies. However, the October 2020 public commitment to construct a list of specific schemes and the target of building 40 new hospitals by 2030 were announced in the absence of key decisions about NHP's funding and approach to construction. Until 2023, DHSC was unable to secure agreement from the Major Projects Review Group about NHP's approach to building future hospitals and the scale of capital funding it would need for the programme's crucial last six years, when most new hospitals are to be delivered. It is unsurprising that when government finally took decisions, it required major changes to NHP's scope. Some of the changes will solve pressing problems for DHSC and NHS England, such as the inclusion of all seven entirely RAAC hospitals within NHP. But some schemes publicly promised in 2020 now face substantial delays and will not be completed by 2030, inevitably with implications for patients and clinicians.

**24** By March 2023, DHSC had spent around £1.1 billion on NHP and the schemes it oversees. Delivery to date has been slower than expected, both on individual schemes and on NHP's central activities, in particular developing Hospital 2.0. Government has not achieved good value for money with NHP so far. The remainder of 2023 will be spent working up a third programme business case. It can improve the chances of NHP delivering better value for money through to 2030, including in the years when its spending will be highest. By the definition the government used in 2020, it will not now deliver 40 new hospitals by 2030. Understandably, it continues to want to build as many as possible. However, there could be substantial risks to value for money if this were to lead to hospitals that were too small to meet the needs of the communities they serve or if costs were to be inflated because so many hospitals were being built at once.

## Recommendations

- 25** We make the following recommendations to assist DHSC, NHS England and government more widely with NHP and other major capital programmes.
- a** Announcements about major capital programmes extending over more than one spending review period should fully reflect known uncertainties so that everyone can be clear about the nature of the commitments being made.
  - b** When it makes decisions about where to build new hospitals in future, DHSC should appraise options in a transparent way using the best evidence available and should keep full records of why it selects specific projects.
  - c** NHP should increase its focus on completing the planning process for cohort 2 schemes and getting as many as possible into construction before the end of 2024 to prevent further bunching of schemes in the second half of the 2020s.
  - d** Senior officials and clinicians in DHSC and NHS England should urgently re-examine the assumptions underpinning the minimum viable product (MVP) version of NHP's Hospital 2.0 design. In particular:
    - they should identify and address any proposals that are likely to result in future hospitals being too small;
    - they should set up a process for reviewing MVP hospitals' progress against the NHS's Net Zero Carbon Building Standard; and
    - they should decide whether they are prepared and can afford to make happen in practice assumptions on which MVP relies, but which are outside NHP's control, for instance shifts in models of care.
  - e** NHP should examine and reflect on lessons from the opening and early operation of The Grange University Hospital in Wales, which was built using modern methods of construction.
  - f** In its third programme business case, NHP should quantify the potential costs of its commercial approach, including any premium from attempting to construct a large number of hospitals at once as well as any costs to government of backing an increase in the UK's capacity to manufacture building components offsite.
  - g** DHSC should urgently review whether NHP has struck the right balance in its future plans for the division of work between consultancy services and in-house staff.