



Samantha Jones
Permanent Secretary
Department of Health and Social Care
39 Victoria Street, London, SW1H 0EU
Tel: +44 (0)20 7210 5407
E: permanent.secretary@dhsc.gov.uk

Sir Geoffrey Clifton-Brown
Chair
Public Accounts Committee
House of Commons
London
SW1A 0AA

By Email: pubaccom@parliament.uk

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Dear Chair,

Public Accounts Committee Hearing – New Hospital Programme update on 9 February 2026

In the hearing on the New Hospital Programme (NHP) on 9 February 2026, the Committee asked us to write to you with a detailed note on: the research underpinning the standard NHP demand model and its assumptions; the quality assurance of the model; more broadly how NHP assures assumptions relating to hospital sizing and the shift of care into communities (left shift); and how business cases differ between schemes. I would also like to take this opportunity to provide additional information on how NHP plans to assess and monitor the benefits of its standardised design, Hospital 2.0.

Research underpinning the demand model

The NHP demand model is a probabilistic Monte Carlo simulation developed and maintained over the past three years by the Strategy Unit, an NHS team hosted by NHS Midlands and Lancashire Commissioning Support Unit specialising in advanced analytics, data science, evaluation and decision support for major strategic initiatives.

A Monte Carlo simulation explores uncertainty by running the model many times using slightly different assumptions within a plausible range each time, rather than

relying on a single set of inputs. Using highly detailed patient-level activity data and more than 100 adjustable parameters, the model produces a range of estimated future activity. This spread of outcomes shows not just what is most likely to happen, but also how uncertain the future may be, based on the uncertainty in underlying assumptions.

The model builds on earlier analytical work by the Strategy Unit to help hospitals and health systems to understand future demand, including the impact of plans to avoid activity and improve efficiency. This work established a consistent set of hospital activity groups, referred to as ‘types of potentially mitigatable activity’ (TPMAs), which represent areas that are commonly targeted by demand management, prevention, avoidance and efficiency initiatives. They were derived from a wide range of sources, including published research, analysis conducted by the Strategy Unit, clinical guidance and national performance frameworks. Using TPMAs provides a nationally consistent approach for NHP schemes and a ‘shared language’ through which Trusts can describe their planned interventions. It also supports benchmarking against national trends and peer organisations, and allows progress to be tracked on a comparable basis over time.

How assumptions vary by scheme and incorporate uncertainty

The model includes both scheme-specific assumptions and a set of common national assumptions. Scheme-specific inputs focus on TPMAs, with schemes and their system partners estimating how far demand across different activity cohorts could realistically be mitigated over the forecast period, based on their planned or developing interventions.

While these assumptions necessarily involve professional judgement, they are supported by analytical evidence within the programme’s modelling tools, including historical trends, peer benchmarking, expert input, and relevant clinical and demographic information. Assumptions are developed collaboratively with local stakeholders and system partners, including clinicians, operational and strategic leads, public health representatives and Integrated Care Boards (ICBs), and schemes are encouraged to draw on local evidence and evaluation to support their position.

Assumptions are then reviewed through a structured assurance process involving the ICB, the NHS England (NHSE) regional team, the NHP, and the National Capital Assurance Team. Assumptions are refined at each business case stage as proposals develop.

Alongside scheme-specific inputs, several core components rely on broader assumptions and evidence. Demographic change is modelled using the principal projections from the Office for National Statistics 2022-based subnational population projections. Adjustments for population health status are informed by structured expert elicitation to estimate future changes in population health, and non-

demographic growth assumptions are derived from analysis of historical activity trends after accounting for population size and age structure.

A key strength of the model is its explicit representation of uncertainty, consistent with government guidance for quality analysis and transparent decision-making, including the Analytical Quality Assurance (Aqua) Book. Most assumptions are specified as ranges rather than single values. For example, instead of assuming a fixed reduction in some activity type, the model uses a plausible range (such as 5–15%) to reflect uncertainty about delivery and impact. These ranges are sampled repeatedly within a Monte Carlo simulation to generate many possible outcomes, producing a distribution that shows the spread of plausible futures around a central estimate.

Understanding this risk profile supports more realistic and decision-focused planning. It allows schemes to test how plans perform under different plausible futures and to prepare credible responses, such as service reconfiguration, operational changes, strengthened demand management, reallocation of capacity, or adjustments to the scale and configuration of facilities as plans develop.

Ongoing development, assurance and transparency of the NHP demand model

The Strategy Unit will continue to maintain and develop the model alongside an ongoing analytical programme focused on influential assumptions for NHP. Work is underway to further standardise approaches to capacity modelling, better account for private healthcare dynamics, and disaggregating drivers of non-demographic growth, including the potential effects of new treatments and changes in clinical practice. Core inputs, including TPMA cohorts, are reviewed on a rolling basis to ensure they remain current and evidence-based, with findings published openly, including in peer-reviewed journals, where appropriate. Continuity of this business-critical capability is being supported by leadership across the Department of Health and Social Care (DHSC) and NHSE throughout the current period of transformation.

The NHP demand model is formally registered in DHSC's published list of business-critical models and is therefore developed and maintained within a controlled governance and quality assurance environment. This includes defined testing and peer review, version control and change control, transparent documentation, and a disciplined development and release process that records what has changed, why, and what checks were completed before release.

Technical review of the model NHSE's data science capability in November 2023 showed an overall positive assessment. The review found no significant shortcomings, and made practical recommendations that have since strengthened documentation, presentation of the principal projection, representation of mitigatable activity, and the number of simulations needed for stable results.

As part of the programme's commitment to transparency, the model's code is published online to allow full methodological scrutiny, while patient-level data

remains securely managed within NHS analytical environments and outputs are shared only at an aggregated level – a standard approach in health analytics. The model follows Reproducible Analytical Pipeline (RAP) principles, ensuring a complete, reviewable record of inputs, processing and outputs in line with public-sector best practice for reproducible analysis, including the direction set by Data Saves Lives, the Goldacre review, and the Government Analysis Function RAP Strategy.

All updates of the model are subject to structured Quality Assurance (QA), with logged fixes and checks, documentation and forward QA plans published openly to support external scrutiny and controlled improvement. In addition, practical use in live planning provides ongoing validation through structured user engagement including surveys and interviews with users and experts in acute service planning to confirm assumptions can be applied consistently and outputs interpreted as intended. Feedback is used to identify constraints and interpretation issues early, these are then addressed through the governed release process.

As Charlotte Taylor mentioned in the PAC hearing, the model's transparency and methodological rigour have been recognised externally, including receipt of the 2025 Florence Nightingale Award for Excellence in Health and Care Analytics from the Royal Statistical Society and the Health Foundation. This external recognition complements, but does not replace, formal assurance arrangements.

Hospital sizing and left shift

Following completion of the demand modelling process, NHP continues to assure hospital sizing. TPMAs feed into the Schedule of Accommodation by identifying areas where demand could be mitigated, helping to inform right-sizing decisions. Trusts develop a Schedule of Accommodation, specifying all functional content that drive the overall hospital size, before progressing to detailed design. The programme reviews functional content, assesses whether planned left-shift assumptions align with models of care outlined in the clinical strategy, and seeks agreement with the NHSE regional team, the ICB and the NHP prior to Business Case submission.

Broad assumptions in the NHP Programme Business Case which informed the average 6% increase in planned overnight bed numbers included projected demographic growth, and an anticipated shift towards community care. These assumptions were mostly developed at a programme level and pre-dated the more detailed, scheme-specific demand modelling now being undertaken. As the programme continues to develop, NHP is using this more granular approach to assess the appropriate size of individual schemes. The programme's assumptions are therefore not fixed; NHP will assess its levels of ambition and whether funding could be used to deliver services in configurations supporting the shift of care to communities.

Scheme business cases and value for money

As part of the business case process, NHS Trusts are required to demonstrate how scheme plans align with the 10 Year Health Plan including proposed clinical model, and planned shifts in activity from hospital to community settings. The requirements for this are set out in a business case template provided to Trusts for each business case stage.

Each scheme develops its own business case using a standard template agreed with DHSC and National Capital Assurance Team (NCAT), informed by NHP's demand model, the Hospital 2.0 Standard Operating Model (SOM), and local clinical and service configuration. The economic case for each scheme produces a Benefit-Cost Ratio (BCR) as an assessment of the value for money of the Trust's preferred option which is reviewed by NHP's economics Subject Matter Experts and the senior economist on the DHSC/NHSE Joint Investment Committee. While Hospital 2.0 introduces common elements across schemes, BCRs will differ depending on factors such as size and cost, the services provided, local population needs, and scale of local benefits quantified. Appraisal follows HM Treasury Green Book guidance and includes sensitivity analysis within Business Cases.

Assessing and monitoring the benefits of Hospital 2.0

The programme is currently developing a SOM which will support Trusts to identify cash-releasing benefits and associated revenue and workforce implications of Hospital 2.0, enabling Trusts to plan their future operating models. Trusts are also responsible for developing their own individual benefits management plans as part of the business case process. In parallel, NHP is developing benefits management plans across the programme to monitor realised benefits and any potential downsides, and to inform adaption for later programme waves.

Evaluations could consider clinical outcomes, productivity, patient experience, and staff experience and wellbeing. The approach is informed by evidence from existing operating models and single room hospitals both in England and internationally.

The Committee may wish to view the following video on staff and patient experience at Royal Liverpool Hospital: <https://tinyurl.com/NHSSingleroomcare>. While some evidence has linked single rooms to challenges for staff wellbeing, these are not directly comparable to Hospital 2.0's digitally enabled single rooms. These digital overlays are expected to mitigate risks associated with single rooms, such as higher staff workload.

I hope this letter provides clarity on how our assurance processes ensure we right-size the hospitals taking into account affordability, demand and value for money, while continuing to monitor outcomes and adapt as evidence emerges.

Yours sincerely,

A handwritten signature in blue ink, appearing to read 'Samantha Jones', followed by a long horizontal flourish.

Samantha Jones

Permanent Secretary, DHSC