



Using a data-centred approach to hybrid closed loop service implementation

Case studies

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Overview

Organisation: Health Innovation Network South London

Organisation type: Health Innovation Network

King's College Hospital used the workforce capacity modelling tool developed by the Health Innovation Network (HIN) South London to plan the implementation of the NICE technology appraisal guidance on hybrid closed loop systems for managing blood glucose levels in type 1 diabetes (TA943) in its adult type 1 diabetes service. The team aimed to forecast the staff time and capacity needed to deliver the hybrid closed loop systems recommended in the technology appraisal, achieve a 70% uptake among eligible patients, and manage this alongside existing service commitments. From its previous experience implementing the NICE technology appraisal guidance on continuous subcutaneous insulin infusion for the treatment of diabetes mellitus (TA151), King's College Hospital recognised the gap between eligibility and actual uptake of diabetes technologies.

TA151 increased eligibility for pump therapy by 2.3 times, yet uptake lagged behind. Within the adult type 1 diabetes population, 43% of patients were already using pumps, while 21% were eligible but not yet on therapy. With the introduction of TA943, a further 15% of patients became eligible, meaning that approximately 36% of the clinic population now needs to be transitioned to the advanced technology.

King's College Hospital also identified persistent disparities in technology access, with lower uptake among patients from deprived areas and ethnic minority backgrounds. The phased implementation of hybrid closed loop systems presents both an opportunity and a risk for addressing or widening these inequalities.

While NHS England has committed to funding 75% of device costs for eligible patients under TA943 over a 5-year period, services still face substantial challenges. These include managing the additional clinical and administrative workload for device initiation, training, and ongoing support, as well as maintaining accurate digital reporting to secure reimbursement. Services must also plan for the post-warranty renewal costs once devices reach the end of their 4-year lifespan.

Given these challenges, King's College Hospital adopted a data-driven approach to implementing TA943. The team sought to understand the additional workforce capacity and specialist skills needed to deliver hybrid closed loop technologies to a diverse patient population. It also aimed to track how transitioning patients onto hybrid closed loop systems could reduce reliance on complex care pathways, freeing up clinical capacity in later years and supporting reinvestment in device re-procurement once warranties expire.

King's College Hospital used the HIN South London's hybrid closed loop workforce capacity modelling tool to stage plan implementation, forecast workforce activity, and estimate the number of patients expected to move to lower-complexity pathways as a result of hybrid closed loop system adoption. The tool also enabled King's College Hospital to model annual device procurement needs and plan effectively to achieve the target of 70% uptake among eligible patients.

Outcomes and learning

Outcomes

The workforce capacity modelling tool demonstrated that the King's College Hospital population of adults with type 1 diabetes using insulin pumps or hybrid closed loop therapy is expected to more than double over 5 years – an increase of more than 200 people.

The model also projected technology starts by reason for initiation, helping the team identify which activities are reimbursable under NICE technology appraisal guidance on hybrid closed loop systems for managing blood glucose levels in type 1 diabetes (TA943) and when to anticipate device warranty renewals.

Using risk stratification assumptions informed by the National Diabetes Audit, hybrid closed loop system pilot data, and an NHS reference group, the model outlined patient pathways by complexity.

It demonstrated how moving patients from complex pathways to optimisation and PIFU (patient-initiated follow-up) pathways could free clinical capacity for onboarding new patients, address equity gaps in technology access, and enable more proactive monitoring and outreach.

For King's College Hospital, the modelling tool predicted that, without risk stratification, demand for diabetes educators at King's College Hospital will grow by 24% from 2024–25 to 2025–26. But applying effective risk stratification could reduce this demand by more than half, highlighting its potential to improve efficiency and sustainability.

Finally, the tool produced a detailed workforce and activity plan, outlining the number and type of appointments and the staffing levels needed across the 5-year period. This analysis indicated that King's College Hospital should plan for an uplift of just over 2 full-time equivalents each for educator and administrative roles to manage the additional activity associated with onboarding newly eligible patients under TA943.

Learning

The King's College Hospital experience showed that workforce and operational planning for TA943 should begin early and be grounded in realistic, data-driven forecasts. Modelling revealed that implementing hybrid closed loop systems creates a substantial short-term increase in educator and administrative workload, even within established services. But capacity pressures can be reduced through effective risk stratification and pathway redesign. The model indicated that successful stratification could cut the projected 24% rise in demand for diabetes educators by more than half, supporting a more sustainable and efficient delivery model.

Key learnings for the wider TA943 roll-out include that:

- workforce demand can rise more quickly than expected without targeted patient prioritisation and use of automation
- early workforce modelling strengthens business cases and helps align capacity planning with reimbursement and funding timelines.

Supporting information

Quote

"We have used the HIN workforce capacity modeling tool at King's. It has helped us to understand how we can implement the NICE TA for hybrid closed loop over the 5-year period. We worked hard to get the data needed to use the modelling tool but it was well worth the effort! We could see what staffing was required, how we might use different onboarding and follow-up pathways, funding requirements to deliver the TA and beyond the reimbursement period. The tool has changed our understanding of resource requirements and enabled us to have clearer conversations with our finance and contracts team."

Geraldine Gallen, Diabetes Nurse Consultant, T1 service lead, King's College Hospital, London.

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