Scaling acute virtual wards: Evaluation findings

Context

Since December 2022, Maidstone and Tunbridge Wells NHS Trust (MTW) implemented an acute virtual ward (AVW) for respiratory patients, spreading the service to further pathways over the following years. The AVW aims to reduce demand on hospital beds, improve patient flow, and enhance patient experience while maintaining high clinical standards.

The AVW is being delivered using Luscii, a virtual monitoring platform enabling healthcare providers to deliver hospital-level care to patients in their homes.

This evaluation provides a real-world observation of this mature, multi-pathway acute virtual ward and the impact it has had upon patients, staff and the Trust itself.

This SBRI-funded evaluation sits within a wider delivery programme, undertaken in partnership between MTW, Luscii, Health Innovation Kent Surrey Sussex (Health Innovation KSS), and Unity Insights.

MTW have led on a process of Patient and public involvement and engagement (PPIE) to incorporate the views and perspectives of those engaging with their services.

Alongside the evaluation findings, an implementation toolkit is in development to capture the lessons learned and provide practical advice for interested trusts and service commissioners.

Evaluation structure

The evaluation scope covered four well-established clinical pathways utilising the acute virtual ward; Respiratory, Haematology, Frailty, and Acute General Medicine.

Quantitative sources

Data was provided by both Luscii and MTW to support analyses in terms of patient outcomes, health inequalities, economic, and environmental impact. Episodes for 1,090 virtual ward patients were analysed covering 12 months between July 2024 and July 2025.

Qualitative sources

Surveys were undertaken to capture patient views and experience before and after their enrolment to the virtual ward. A further survey was undertaken to capture staff views and a focus group interview with members of the PPIE group was used to develop themes and outcomes.

Key findings

Clinical impact

AVW patients experienced a reduction in hospital stay relative to matched non-AVW individuals, easing pressure on acute bed capacity. While patients on the AVW had longer end-to-end stays, the comparatively lower cost of virtual care enabled longer periods of observation prior to discharge.

Hospital returns and readmissions were lower than in the non-AVW cohort. Despite this, some patients did appropriately return to hospital when assessments identified clinical risks or the need for further treatment.

Patients from more deprived areas and older age groups had experiences and clinical outcomes broadly aligned with the wider cohort, with increased benefits in terms of in-hospital bed days saved in some cases.

4.36 **Mean reduction in hospital bed days**

This benefit was most significant in the well-established respiratory pathway (mean 6.02 day reduction), which was the first to adopt the acute virtual ward.

0.02 **Reduction in expected returns and readmissions per patient**

The smaller Haematology and Frailty cohorts experienced the greatest impact in terms of returns to hospital, although all cohorts saw a reduction.

Patient and staff experience

94% of post-admission patients agreed that receiving care at home was positive for their wellbeing.

91% of patients rated the comfort and convenience of receiving care at home as significant benefits.

68.7 Net Promoter Score based on the question “How likely are you to recommend the virtual ward to others?”

Patients consistently reported feeling safe, well supported, and reassured by daily monitoring and rapid responses to deterioration.

Many patients valued remaining with family, maintaining independence, and avoiding the stress of hospital environments.

A minority of patients reported unclear discharge explanations, anxiety during onboarding, or challenges understanding clinical information.

“I found the virtual ward a totally positive experience. Being monitored from home helped my mental wellbeing and every member of staff I came into contact with were caring and supportive.”

Economic and environmental impact

Overview

Across all scenarios, the AVW produced cost savings driven largely by avoided bed days, demonstrating consistently positive return on investment.

Pilot study

The outcomes of the pilot programme resulted in a benefit-cost ratio (BCR) of 1.33, meaning for every £1 invested, £1.33 is expected in return.

£635k

Results shown in Net Present Value (NPV), meaning that future projected benefits have been adjusted to current prices.

South East

When scaled to a larger population, the model remained economically favourable, with a BCR of 1.2, reflecting the relative increase in costs.

£5.4m

The above NPV reflects the total return on investment of a projected five-years of operation

Environmental impact

Shorter hospital stays and reduced emergency activity contributed to lower CO_2 emissions, demonstrating positive environmental benefits. The AVW resulted in a reduction of 11.5 $KgCO_2e$ per AVW bed day compared to a physical bed day.

Recommendations

Expand governance and continuous improvement, standardising data capture, creating consistent record-keeping and streamlining processes for the monitoring teams.

Communicate findings and share success, demonstrating to staff the processes and controls in place to manage patient safety, while also illustrating the benefits to suitable patients.

Continue investment and scaling of the virtual ward, given sustained operational, economic, and patient-centred benefits, with ongoing monitoring to ensure that new patient groups receive comparable benefits and levels of service.

Conclusion

The Luscii-enabled AVW demonstrates clear value as a scalable, clinically safe, and patient-centred model of acute care. By reducing pressure on hospital beds, increasing patient flow, enhancing patient experience, delivering economic and environmental benefits, and maintaining strong safety outcomes, it provides an important component of MTW's strategy for sustainable acute care delivery. With targeted improvements in digital inclusion, communication, and pathway-specific design, the service is well positioned to expand its positive impact across the system.