

Mapping of Bromley Virtual Ward Pathways

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1. Executive Summary

Virtual wards allow people who need hospital care to receive the care they need at home, including in care homes, safely and conveniently rather than in a hospital. They provide systems with a significant opportunity to narrow the gap between demand and capacity for secondary care beds providing an alternative to admission and/or early discharge.

At the request of SEL ICB, the Health Innovation Network (HIN) gathered insights into the current virtual wards in Bromley to highlight current challenges, gaps, and opportunities. This report details our approach and method as well as the insights and recommendations.

To capture the current position a qualitative approach was applied within the project consisting of semi-structured interviews and a process mapping exercise. Six staff from Bromley's hospital at-home team were interviewed and an in-person process mapping workshop consisting of key stakeholders was run. Pre-existing quantitative data was also included and input from Bromley's service user co-design group was used to form the final recommendations.

Overarching themes from the interviews and discussions from the workshop included:

- Improvements to maximise the number and appropriateness of referrals and ensuring they are complete.
- The frequency of the weekly multidisciplinary meetings
- The challenges of different IT systems including the incoming Doccla and potential interoperability and duplication with work underway to address this between Bromley partners.
- Suggestions for managing risks around capacity including on-going recruitment and testing skill mix models.
- Development of dashboards and templates for different clinical presentations.
- Having a direct, dedicated telephone line that patients can use.
- The need to consider digital exclusion and health inequalities.

A high-level current state process map was produced.

The following recommendations were made:

1. Streamline the referral process.
2. Review data on the utilisation of the patient and staff telephone line.
3. Review interoperability across partners.
4. Improve multidisciplinary team meetings by developing a standard template and reviewing the frequency.
5. Review on training and development needs, and skill mix.
6. Increase patient information.
7. Review the weekend escalation process to include GP input and reviewing processes.

Recommendations from service users included embedding the patient voice at governance level, developing people-focussed outcomes, reaching out to seldom heard groups and involving people in staff training, developing patient information and in embedding technology.

In conclusion the report notes that the project was a successful exercise that identified valuable insights and opportunities for improvement and demonstrated the importance of collaboration and communication across teams, the complexities of meeting national and local ambitions to integrate services around the needs of patients, and the need for ongoing efforts to improve processes and systems to do this effectively.

2. Introduction and context

In 2022, NHS England (NHSE) dedicated £450 million towards establishing 40-50 virtual ward 'beds' per 100,000 population by October 2023. The national programme defines virtual wards as a safe and efficient alternative to NHS bedded care. While some national guidelines have been issued, including mandating respiratory and frailty pathways, much of the responsibility around design and implementation has been left to local systems.

This has resulted in rapid local progress in some areas, like in Bromley. However, some feel it has led to a lack of consensus about an 'optimal' approach'. This 'bottom up' approach has given rise to variation in operating models across key domains including workforce, organisational interfacing, multidisciplinary team (MDT) approach, tech-enablement, and on-and off-boarding criteria. This has led to difficulties in establishing effective evaluation criteria and identifying best practice.

These challenges have been exacerbated by the rapid timeframes and by what NHS England has called the low-to-moderate quality evidence base, which has slowed clinical buy-in in some areas.

2.1 Virtual wards utilisation

While the number of virtual ward beds available has seen rapid growth over the last year, those beds remain under-utilised, and therefore the patient benefits of virtual wards are yet to be fully realised. NHSE has outlined an ambition that 80 per cent of virtual ward capacity be in use by September 2023.

Although utilisation data can be unreliable, the usage rates reported across London are highly variable, with many virtual wards at below 50 per cent utilisation. A further challenge is that virtual ward capacity needs to increase significantly over the coming year in order to meet national ambitions.

For any future additional capacity to be utilised fully, the challenges and barriers surrounding the take up of the service needs to be understood and addressed. There have been several reports (e.g., NHSE 2023¹) that highlight various aspects of the slow adoption and utilisation; technological, cultural and process related.

The aim of this project was to 'deep dive' into one borough in southeast London (SEL) - Bromley and try to systemically examine the roadblocks and opportunities beginning with documenting the existing pathways and exploring the challenges in criteria such as admissions and discharge.

¹ NHS England (2023) Future NHS National Virtual Wards. Available at: <https://future.nhs.uk/NationalVirtualWards/> (Accessed: 18 April 2023)

2.2 Background to the Bromley virtual ward service

Virtual wards in SEL are led and coordinated by the community providers. In Bromley this is an integrated service between Bromley Healthcare, Bromley GP Alliance, St Christopher's, and Princess Royal University Hospital (PRUH) (part of Kings College Hospital). Bromley Healthcare is a social enterprise providing a wide range of community healthcare services to people of all ages in Bromley, Bexley, Greenwich, and Lewisham.

The One Bromley partnership has developed a hospital at home service to deliver a range of monitoring and interventions in the community that would otherwise be delivered in an acute hospital.

The hospital at home service is provided borough-wide to people who need hospital care that are registered with a Bromley GP. Referrals are currently from the acute hospital, other urgent community response services and Bromleag, the GP practice for residents of nursing and care homes in Bromley. The service is a consultant-led multidisciplinary team currently consisting of GPs, consultants, nurses, and health care assistants with clinical accountability for its patients.

Bromley's adult Hospital at Home service started in November 2021 with intravenous antibiotics in the community for cellulitis, lower respiratory tract infections and urinary tract infections. This was built alongside a long-standing PRUH surgical early supported discharge service. Also running in Bromley is a Children's Hospital at Home Service which provides short acute interventions for children who would otherwise need to be in hospital. This is a collaboration between the PRUH and Bromley Healthcare. In December 2022, the Bromley's adult Hospital at Home service expanded with staffing and protocols to support respiratory and frailty virtual ward pathways and introduced remote monitoring via telephone in February 2023.

Patient contacts steadily rose to almost 600 a month, working with up to 25-30 patients at a time through a blend of remote monitoring and home visits. More is planned with fully technology-enabled remote monitoring from Q1 2023/24 and recruitment to support respiratory, frailty, polypharmacy review, and palliative aspects of the service. Patient co-design is at the heart of the development of this service.

Figure one shows the vision of the Bromley Hospital at Home service.

Bromley Hospital at Home in the system

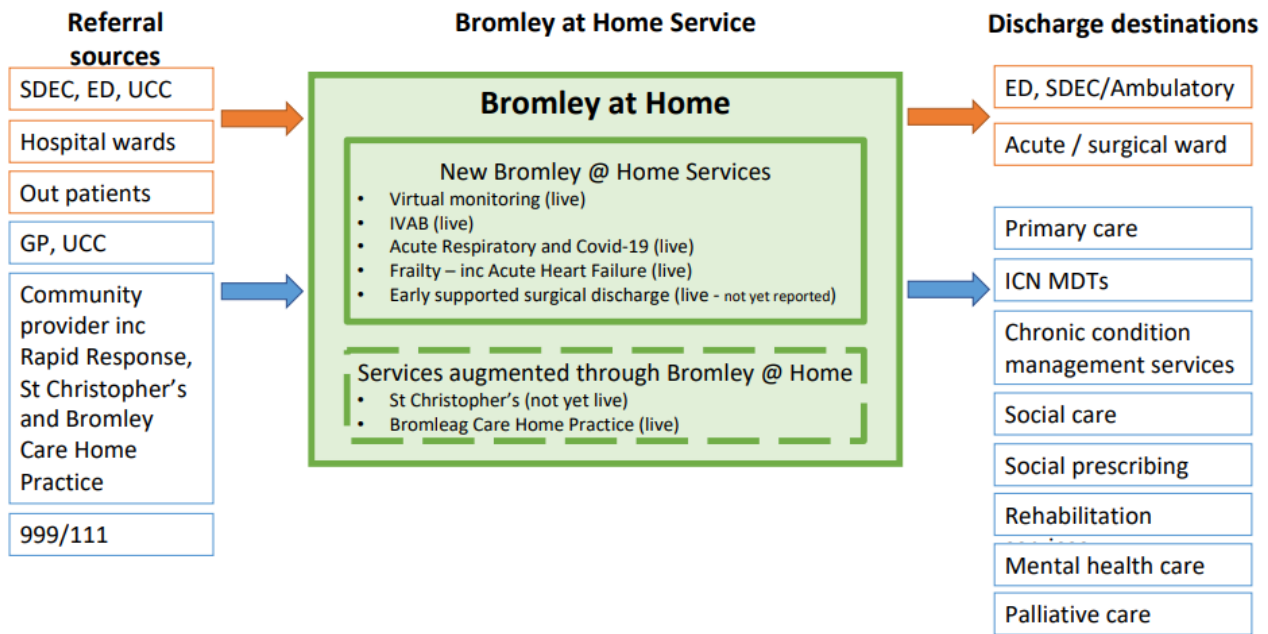


Figure 1: Vision for Bromley Hospital at Home service

The service supports people who need hospital care from 8am to 8pm seven days a week with GP support Monday to Friday 9am till 5pm. Overnight 8pm to 8am patients are not actively monitored and self-escalate if their health deteriorates based on their symptoms and personalised care plan by using the existing out of hours arrangements: Bromley out-of-hours GP, 111 or 999. Less than one per cent of patients to date have escalated concerns out of hours.

Patients are currently monitored and treated during home face-to-face visits with interventions ranging from vital signs monitoring, nebulisers, diuretics, frailty assessment and IV antibiotics (IVAB). Patients are typically seen once every 24 hours by the nursing team at a convenient time as agreed with patients and carers. People who need hospital care who have their own approved monitoring devices or those provided by the service, for example, recordings from blood pressure monitors can be reviewed remotely via a telephone call. This is usually blended with face-to-face intervention at a point in the pathway.

2.3 Project purpose

The main objective of this project was to produce a pathway map showing the current Bromley's Hospital at Home virtual wards highlighting challenges, gaps, and opportunities. More specifically, planned outputs were to:

- explore what improvements would support the delivery of the virtual ward pathways;
- produce a report highlighting key recommendations;
- produce a process map representing the current pathway.

The project aims included improving the quality of care and patient outcomes, while also enhancing communication and collaboration among staff working on virtual wards.

2.4 Scope

Due to the rapid nature of the project and focus on opportunities for improvement, careful consideration was given to the scope of the process mapping exercise. It was agreed that the following key elements be included:

- patient acceptance criteria,
- providers involved and their roles, and intensity of service offered,
- patient-facing technology,
- understanding the qualitative measures being collected such as patient satisfaction, surveys, and experience.

Consideration was also given to health inequalities, the impact on the wider system, and gaining the perspective of users/families and carers.

3. Method

Initially the HIN project team held a meeting with the Bromley core project team to define the goals and objectives of the virtual ward project and identify the key stakeholders involved.

A qualitative methods approach was used to conduct the project, augmented by information from virtual ward standard operating procedure (SOP) and the Bromley Hospital at Home Patient Feedback Report and co-design group.

The project involved engaging with two sets of stakeholders - (i) virtual wards staff and (ii) patients and carers (via the Bromley Healthcare co-design group) - to map the current virtual wards pathway and identify opportunities for improvement. The methods used for these different stakeholders are described below.

Figure two below shows an overview of the methodology.



Figure 2: Overview of methodology

3.1 Interviews with virtual ward staff

Six qualitative semi-structured interviews (see Appendix A for interview schedule) were conducted with key stakeholders, including three consultants, one service lead, one operational lead, and one nurse consultant, to gain insight into their roles, responsibilities, and perspectives on the virtual ward model. The interviews were held virtually over Microsoft Teams. Interview notes were written up, reviewed, and common themes extrapolated to help produce a high-level pathway map and guide the content of a more in-depth workshop.

3.2 Virtual ward process mapping workshop

An in-person process mapping workshop was conducted. The workshop brought together clinicians, operational leads, and a data analyst (see appendix C for attendance list). The aims were to identify the current process map of the virtual wards and to explore opportunities to make the process more efficient and effective. The workshop focused on analysing various stages of the process including the referral, triage, escalation, workforce, remote monitoring, and discharge including interactions with different organisations.

The workshop was structured in a way that allowed participants to share their knowledge and experience in their respective parts of the process. There was a facilitator, scribe and 'car park attendant' who encouraged participants to discuss their experiences including challenges in managing virtual wards. The workshop enabled collaboration and discussion between the participants to identify the issues that were blocking the effectiveness of virtual wards. The participants worked together to identify the gaps in the current virtual ward process and explored the opportunities for improvement.

During the workshop, a car park lot matrix was used for capturing the details and concerns raised by the participants, which were then reviewed and discussed later in the workshop (see appendix B for the car park summary).

To evaluate the success of the workshop, participants took part in a swimming pool exercise. This exercise measured the participants' progress toward the improvement of virtual ward. Participants were asked to identify where they were in the swimming pool, with the deep end representing a successful outcome and the shallow end, kiddies' pool, sun loungers representing a non-commitment.

3.3 Service users and carers

The HIN project team worked with the Bromley Healthcare communication and engagement lead to involve service users and carers.

3.3.1 Direct approach to service users

Invitations were sent by the Service lead to 36 known service users, inviting them to participate in the workshop or have an interview. The service users were selected from a diverse cross-section of the population encompassing varying demographic racial and gender backgrounds. They also had been seen recently at the Hospital at Home pathway (December 2022 - February 2023). Unfortunately due to time constraints, no interviews were undertaken before the workshop and no service users accepted the invite to the workshop. Three service users/family members did consent to an interview at a later date and those details were passed to the lead to follow up outside of this project.

3.3.2 Bromley at Home Delphi Round 2 report

Prior to the establishment of the virtual ward service, Bromley Healthcare conducted a survey of Bromley residents to seek views on developing plans for a Bromley Hospital at Home service. Feedback was obtained from 215 residents which formed the Delphi Round 2 Report on developing plans for a Bromley Hospital at Home service. Insights from this report were considered in the recommendations.

3.3.3 Bromley at Home co-design group

Bromley Healthcare has established a co-design group with colleagues from Bromley Healthcare, King's College Hospital and the SEL ICB communications and engagement team and involves service users, carers, voluntary sector partners and health and social care colleagues.

The aims of the group are as follows. Work with local people to understand:

- How existing pathways are working for people who have used them and what needs to be improved.

- Review, develop and test ideas for this service to understand the impact on people (specifically relating to the patient experience and journey).
- Work with service users to review the development over time.

Contributions were captured during a series of workshops. See figure 3 below.

The workshops

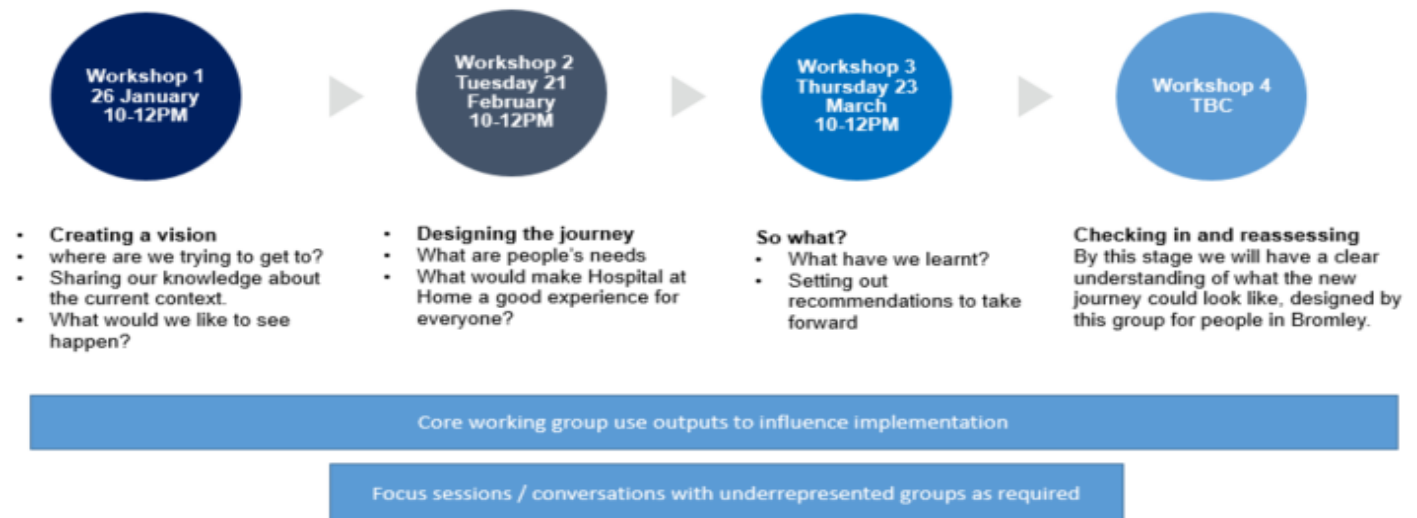


Figure 3: Overview of the co-design workshops

The HIN team were kindly invited to the second and third workshops. Insights and proposed recommendations were shared from the first three workshops which are included in this report.

4. Findings

From its inception, the project set to explore what improvements could support the delivery and scale up of Bromley's virtual wards. The process mapping workshop, along with stakeholder interviews proved an efficient approach in providing valuable insights into the Bromley virtual wards and their pathways. The following section highlights the key findings.

Overall the findings indicated that effective communication and collaboration between healthcare professionals are critical for the success of virtual wards. The workshop participants identified the need to ensure continuity of care and effective management of available resources.

Additionally, the participants of the interviews and workshop emphasised the need for appropriate skill mix and more support of advanced clinicians to facilitate discharge.

The findings presented below are organised into three subsections: themes from the interviews; service user feedback survey and workshop; and the process mapping workshop.

4.1 Overarching themes from interviews

This section provides a summary of the interview findings organised under key headings. Each section begins with the question that was asked the interviewee.

**In your own words, can you briefly describe how does the VW work? Are these wards fully virtual or hybrid?
How big is the team and how often do they meet?**

4.1.1 Virtual ward overview

- In order to ensure safe and effective treatment, the selection of patients is important and clear criteria for admission of patients is essential.
- Referrals from primary and secondary care are still a challenge. The interviewees noted referrals can sometimes be incomplete and therefore difficult to triage and as such, further work is required on the referral form. In addition, improvements need to be made to maximise the number and appropriateness of referrals, although on some days the number of referrals is now exceeding capacity. To address this, recruitment is underway to increase clinical capacity.
- The frequency of weekly multidisciplinary meetings (MDM) with lead consultants may need to be increased to utilise their expertise more.
- The virtual ward is a hybrid model with limited remote monitoring.
- Any remote monitoring is completed over the phone, with patients receiving calls every day at an agreed time.

4.1.2 What data do you monitor and report?

- The service has its own dedicated referral forms - one for general and one for IVAB. There is a replication of the paper form on PRUH's electronic patient records (EPR), to facilitate reduction in clinician time to refer, owing to an EPR change freeze this is only the IV form at present. Patient satisfaction forms are available electronically.
- Codes are available to capture data to support operational management, national and local reporting.

- Operational data dashboards exist with more in development covering service impact for patients and the local health economy.
- There are different EPR systems across different organisations which makes sharing documentation such as results, prescriptions, and medical records difficult. No single system is used across SEL although work is underway between the Bromley partners to access each other's patient notes to provide more detail than is currently visible through the London Care Record, and to offer write access where appropriate.
- There is potential for duplication of records, for example the palliative team use System One for their notes for patients under St Christopher's care only but will use EMIS as part of Hospital at Home.
- Emotional mapping is being designed for service users' feedback.

4.1.3 How do you manage risks? What are the different risk levels? What are the top three risks? Where are the decision-making points?

- Capacity: Due to the pace of change there are points when the number of referrals exceeds clinical capacity. Currently the team are recruiting new posts which once they have completed their induction will help increase capacity. In addition, as the service is still new, it is going through a period of standardisation of care delivery, culture change, training, new ways of working, all of which will have impact on clinical capacity. The team are testing skill mix models collaboratively. This is also linked to confidence in discharging patients and senior clinicians supporting more junior staff in that decision making.
- Incomplete referral forms: Not receiving the correct and complete information at the point of referral can be a challenge.
- Face to face assessment of the patient is always envisaged to be required, especially at the initial assessment where a diagnosis and management plan is made. This has implications for the level of staffing required. The monitoring of the treatment plan has more potential to be virtual which is supported by a fully trusted assessor model. There also needs to be consistent timelines which ideally should be same day or at least within 24hours by a senior clinician.
- EMIS documentation: Templates are being designed which incorporate the agreed tools for different clinical presentations (e.g. assessing for delirium using the 4AT in the frailty pathway).
- There is potential for further discussion on competencies and confidence/experience for triage and monitoring. In all cases, the skill mix/competencies must be appropriate.
- It was recommended that there be a direct, dedicated line that patients can use for virtual ward. Currently there is a shared telephone line for healthcare professional queries and patients.
- The need to consider digital exclusion was highlighted regarding Doccla, for people with, for example, dementia, poor dexterity or issues with using technology (e.g., unable to use an electronic tablet, no Wi-fi, 3G or telephone access).
- Welfare visits are having to be arranged if the patient or carer/family have not responded to telephone calls after three attempts.

The following are quotes from responses provided by clinical staff when asked during the interviews about their experiences of working on the virtual ward.

“

What difference do you feel the virtual wards have made?

- “Patients in the virtual wards today would have been treated in hospital three to four years ago”.
- “The wards have only been running for short while, still too early to tell but we have real positive patient feedback”.
- “Patients really seem to be enjoying the fact they can get a home visit, which shows someone cares”.
- “Enhanced skills set for community-based clinicians/joint learning and interprofessional learning”.
- “Streamlined approach. Demonstrates that things can be done differently. There is a cultural change and less risk of infection”.
- “I believe a lot of the patients we see would have ended up in A&E or called 111”.
- “Maintaining competency/inter-professional learning”.

”

“

What do you feel has not worked so well?

- “Cannot always get a true assessment over the phone we have to end up assessing face-to-face”.
- “Patients need to be flagged to out of hours colleagues that they are Hospital to Home. we need to bring colleagues from wider community on board”.
- “Not all clinicians (primary and secondary care) are on board with using the virtual ward”.
- Getting the initial referral form completed correctly can sometimes be a challenge.
- “Some of the care can be fragmented, we need to build on seamless handover and continuity”.
- “Cultures in the partnership organisations are different”.
- “Limited interoperability of EPR systems, we do not always have access to full patient record”.

”

4.1.4 What factors do you think are important to sustaining or scaling up the virtual wards?

- Appropriate staffing levels and skill mix.
- Training.
- Buy-in from stakeholders.
- Recognition that structured/rigid processes may not be applicable to all pathways.
- Information governance to facilitate sharing of patient information while on the virtual ward.

4.1.5 Are there any opportunities for improvement?

- Consider including 'inbetweeners' – people who do not need acute level care yet but have started to show signs of decline (e.g. have been referred to Urgent Community Response).
- Provide a direct telephone line that patients can use for the virtual ward.
- Communicate more clearly to Hospital at Home patients how to escalate a concern out of hours. It needs to be made clearer to patients that they can call the same number to escalate a concern any time of day or night. Out of hours they will be directed to the out of hours GP services.
- Develop a process which flags to the GP service that the caller is a virtual ward patient without relying on the caller relaying this information.
- Utilise the expertise of lead consultants more by increasing the frequency of weekly consultant MDM, alongside daily GP MDM.
- Create opportunities to build trust and relationships between all stakeholders (including with service users).
- Consider the possibility of having community based diagnostic hubs for patients who are not ill enough to require Hospital at Home services.

4.1.6 What health inequalities digital exclusion risks were considered?

- Consider the support needed to move people to more technology enabled pathways because the borough has an ageing population and choosing the right monitoring is crucial.
- Ensure any technology (i.e., Doccla) is of the highest standards of accessibility and usability.
- Consider direct phone calls for monitoring.
- Consider all relevant factors when assessing suitability for monitoring - clinical need is the starting point for identifying individuals who require monitoring, however other factors, such as, housing, also need to be assessed.
- Support to caregivers is crucial to prevent social isolation.
- Consider and mitigate against digital exclusions by ensuring the pathway is optimised for those from minority backgrounds rather than only the majority.
- Ensure equality impact assessments for transforming care pathways pay attention to digital exclusion as a potential risk of inequalities.

4.2 Service User Feedback

4.2.1 Survey results - Delphi Round 2 report

Below are the key themes from the Delphi Round 2 report written by One Bromley, as an output from a survey of 215 Bromley residents:

- Respondents were broadly supportive of the Hospital at Home concept with patients citing the benefits or experience of using this type of service model.

- Comments were raised about the staffing model including the requirement that people should receive care from an appropriately trained, qualified and skilled workforce; and that, the extra staff recruited to support the virtual wards service should not be to the detriment of the local hospital.
- Service users suggested that the service is set up to be consistent and reliable.
- Service users highlighted wanting to be able to access hospital care if their condition deteriorates.
- Respondents highlighted that care for older people needs to be carefully considered as some individuals might live on their own, suffer from confusion and might struggle with modern technology.
- Respondents recommended having facilities in place for patients who are less familiar or confident with modern technology.

4.3 Workshop

During the workshop, attendees reviewed each stage in the pathway as it was being visually mapped (Figure 4). The discussion was facilitated to explore risks, challenges, opportunities, and recommendations.

Key findings of the discussion are summarised in table 1 below and more detail is provided in Appendix B

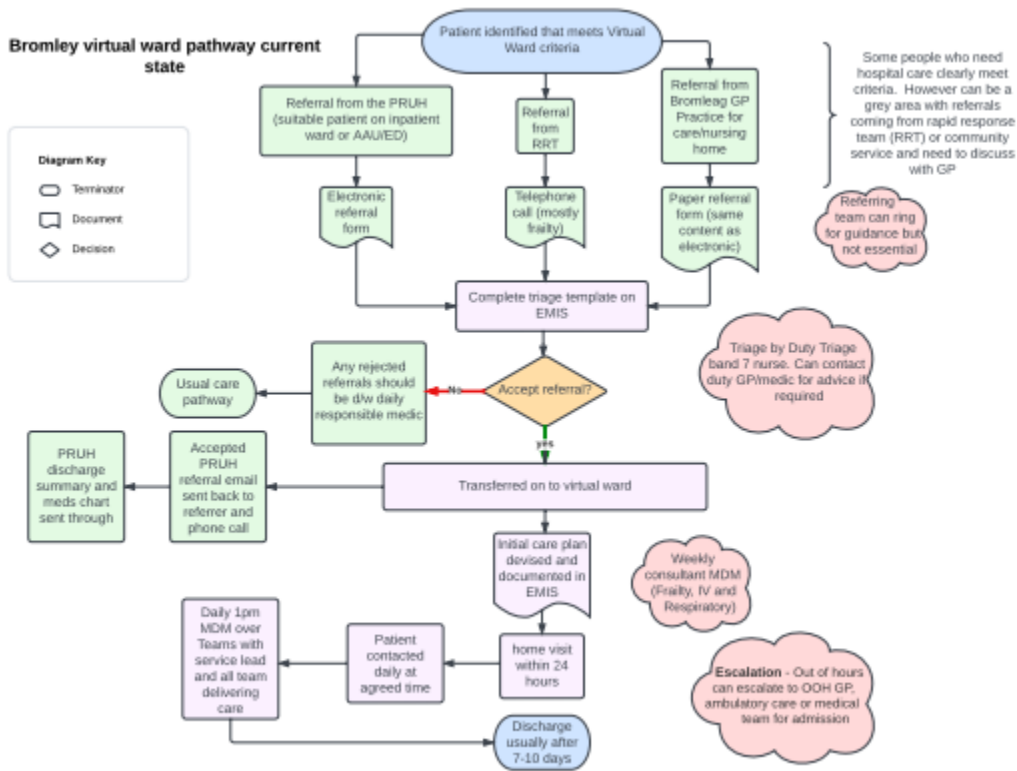
Table 1: Summarised workshop findings

Pathway factors	Findings (Risks/Concerns, Challenges, Opportunities and Recommendation/Next steps)
Referral process	<ul style="list-style-type: none"> • Concerns were raised including capacity to meet demand, escalation processes, taking consent for at risk patients and the robustness/ consistency of referrals routes and processes. • Opportunities and recommendations included clarifying and standardising processes and templates.
Data access	<ul style="list-style-type: none"> • Risks and challenges associated with the lack of interoperability were highlighted as this hinders staff access to patient information and causes duplication of data capture. • The recommendation was to develop a plan for interoperability and data access.
Triage	<ul style="list-style-type: none"> • Participants felt the triage process was not yet optimal and discussion was needed to agree, for example, consultant input, support to triage staff and accountability. • It was recommended that the triage process be reviewed and then widely communicated.
MDM/ Care plan	<ul style="list-style-type: none"> • Concerns were raised about risks associated with rapid iteration and staff from different services/organisation operating as a multi-professional team. • Opportunities and recommendations included defining the roles and responsibilities with the MDM and standardising the process and template to run the meetings.
Doccla	<ul style="list-style-type: none"> • There are opportunities for One Bromley staff to access more information on each patient as Doccla allows users to add notes for patients in the service. • However, there were concerns that Doccla may not be useable by all patients. • To enable equity in service provision and care, it was recommended that a process is developed for those who do not use Doccla functionality and that Doccla be tested with users before going live.

Discharge	<ul style="list-style-type: none"> • There is a risk that patients may not be discharged in a timely manner due to a lack of confidence when no advanced clinician is involved. • It was recommended that staff access more education to be empowered to discharge from the virtual ward based on criteria set for each patient.
Cross team working	<ul style="list-style-type: none"> • Cross functional/boundary working can be challenging because of possible functions such as information governance, human resources that do not align. • It was recommended to set up opportunities to connect staff in One Bromley to enable effective cross functional working.
Patient involvement	<ul style="list-style-type: none"> • Concerns were raised about the patient pathway information only being available for the general service and the IV pathway. • The recommendation was to create electronic patient information leaflets for all virtual ward speciality areas.
Staff mix	<ul style="list-style-type: none"> • There are concerns that there is no weekend GP staffing in place and it is difficult to determine whether the current skill mix and bandings are right and whether additional advanced clinician time is needed. • It was recommended that the staffing model is reviewed to establish gaps in skills mix and to develop a training plan.
Escalation	<ul style="list-style-type: none"> • There is a concern that the weekend escalation process is unclear. For example, there are formal and informal structures in place to contact consultants. • It was recommended that a clear weekend escalation process that includes GP staff is established. The process should be well documented, communicated and understood by the whole team.

Figure four: High-level process map of current state

During the workshop, all participants engaged in an exercise aimed at creating a visual representation of the current state of the virtual ward. This exercise yielded a comprehensive pathway map (see below), capturing the journey of patients from the moment they meet the criteria for virtual ward admission, through triaging, care planning, MDMs, home visits and up to discharge. The exercise also revealed several challenges and opportunities which are itemised in Table 1 and Appendix B.



4.4 Virtual Ward Process Mapping Workshop visuals



4.5 Swimming pool exercise

The majority of the participants reported that they were in the deep end, indicating that they had a clear understanding of the virtual ward process.

An unplanned group emerged representing those who were in the deep end yet uncomfortable. The group described their experience as being in the deep end because of their wealth of experience but uncomfortable because of the amount of work and limited resources they had. They indicated there is a level of support needed to enable them to function appropriately without being overwhelmed. The palliative care team placed themselves on the 'diving board' keen and ready to 'dive in' and get started.

5. Conclusions

Overall, the virtual ward process mapping was a successful exercise that identified valuable insights and opportunities for improvement. The findings from the interviews and workshop will help to inform future strategies for improving the virtual ward process in Bromley, ensuring that patients receive the highest level of care possible. The project demonstrated the importance of collaboration and communication across teams, the complexities of meeting national and local ambitions to integrate services around the needs of patients, and the need for ongoing efforts to improve processes and systems to do this effectively.

5.1 Limitations

The project had limitations that need to be acknowledged. One of the main limitations was the lack of service users' interviews and presence at the workshop. Instead, the project relied on the results of the Bromley Hospital at Home patient survey and core-design group, which may not have captured the full range of service user experiences. It is an acknowledged limitation of the engagement of service users so far that they do not fully represent the local population demographics and more work is planned to engage diverse voices. It is also a challenge due to the nature of the service in that service users are likely to be frail with multiple co-morbidities making engagement more challenging.

A further limitation was the timing of this work. The team acknowledged they are very much at the beginning of the journey with some pathways (heart failure and end of life) not yet operational and additional staff recruited but not yet in post. It is important that the mechanisms detailed in the service SOP are used for capturing learning and improvement on an on-going basis.

Analysis of datasets and cost-effectiveness was out of scope for this project. However, it is worth noting that participants do not yet have access to granular service and system impact dashboards - which are under development - and as such the views expressed on the challenges and opportunities are not yet informed by analysis of real-time data or a health economic assessment of the service.

Finally, the pathway mapping work assumed that patients met the eligibility criterion of having a functional home to be discharged to with a working fixed or mobile telephone line, running water, and electricity. This may not always be the case, noting the team has treated patients in long term hotel/hostel accommodation. These limitations should be considered when interpreting the project findings and conclusion.

5.2 Recommendations

5.2.1 Recommendations for Bromley Virtual Wards

Now Bromley Hospital at Home has been established and hosted by the Urgent Community Response (UCR) service, One Bromley should consider how to maximise the impact of its UCR services to fulfil the aim of helping people to avoid hospital or be discharged earlier. A review of the UCR services as a whole should include opportunities to bolster the skill mix available to each patient without having to refer between services, thereby reducing administration effort, improving patient experience of care and providing greater flexibility. It could also support

recruitment, development, and retention opportunities for staff in a challenging labour market. This will have implications for how staff are trained and how they interact but could demonstrate further progress in meeting the needs of the Bromley population which is the second oldest in London and who tend to present to UCR with a range of health and care needs driven by multi-comorbidities.

Based on the insights from the project, several recommendations can be made to improve the virtual wards process and enhance patient outcomes.

1. **Streamline the referral process:** Review the current referral processes so that the same information is captured in written and telephone referrals to ensure standardisation. The referral form for non-IVAB patients should also be put into use, including through adding to the PRUH EPR system. The referral process for end-of-life care needs to be considered as a separate entity.
2. **Review data on the utilisation of the patient and staff telephone line:** Currently patients and referring hospitals have the same number to call and it is not known if this is a risk. Data should be collected to understand the service, for example, volume of calls from patients, average answer speed, abandonment rate.
3. **Interoperability:** Ideally EPR systems would be connected to enable access to the full patient record and eliminate duplication of effort. Work is underway between the Bromley partners to access each other's patient notes to provide more detail than visible through the London Care Record and to offer write access where appropriate. It should be noted that Kings College Hospital are undertaking roll out of EPIC which restricts any changes until after EPIC go-live.
4. **Multidisciplinary team meetings:** The complexity of running effective MDMs was highlighted due to rapid changes, escalations, and daily change in staff/movement across providers. The team highlighted the potential for increasing efficiency of these meetings by developing a standard template and protocols for running the MDM. There was also consensus that the expertise of lead consultants could be utilised more by increasing the frequency of the MDM to more than once weekly.
5. **Training, development, and skill mix:** As the service continues to evolve, the staffing model should be regularly reviewed to establish any gaps in skill mix, the need for advanced clinicians, and appropriate route of training to address any identified skills or knowledge gaps. Staff should continue to have access to on-going education and continue to be empowered and supported to work collaboratively across UCR and organisational boundaries; this will increase their confidence to assess patients appropriately. Opportunities for staff working across different functions to connect and build relationship should be established.
6. **Patient information:** The team highlighted the opportunity to create electronic patient information leaflets for other specialty areas in the virtual ward to mirror that available for IVAB. The use of service user volunteers to test digital content and solutions before going live to ensure their effectiveness was also highlighted.
7. **Weekend escalation process:** It was recommended that the weekend escalation process be reviewed to include GP input which will broaden what the service can provide at the weekends. Furthermore, creating and clearly communicating the process should replace the current formal and informal structures in place.

5.2.2 Recommendations from the co-design group

Following three workshops, the codesign group have produced a set of recommendations below:

1. Embed patient voice at governance level; invite people with lived experience to join sections of the board/steering group meetings which they can influence.
2. Develop people-focussed outcomes for hospital at Home as well as clinical outcomes.
3. Actively reach out to and engage people from ethnic minorities, non-English language speakers and people with additional communications needs to understand their experiences. These views were not captured via co-design workshops.
4. Involve people with lived experience in staff training and development, invite people with lived experience to join training, offer training to informal carers and reverse mentoring for staff.
5. Ensure all community staff, not just the Hospital at Home team, undertake deaf awareness and dementia training.
6. Develop leaflets and advice on Hospital at Home in partnership with local people.
7. Produce communications in accessible formats upfront so that all users are immediately catered for rather than retrospectively sharing things in accessible formats.
8. Ensure all videos, technology and monitoring approaches are accessible to users with different needs.
9. Join up with existing long term health condition services and care homes.

Bromley Virtual Wards Staff interview Topic Guide

This discussion guide is designed to be used for interviews with staff (clinical and non-clinical). This guide is intended to help steer the discussion, but this will also depend on participant's role and therefore not all topics and questions will be covered in every interview, or in the order in which they appear here. Suggested timings are provided alongside each section, but these will also vary depending on who is being interviewed.

Interviews will last between 45 and 60 minutes over the telephone or MS teams.

Objectives:

The objective of these interviews is to understand staff perspectives on Virtual Wards (VWs):

- To understand how the wards currently work
- For non-clinical staff: understand their experiences of setting up/ working on a VW.

Outline of this guide:

Section	Detail	Timing
Introduction	<ul style="list-style-type: none"> • Ensure participant understands purpose of the interview, and confidentiality. • Seek and (re)obtain consent for participation 	2-3 minutes
Overview of job role	<ul style="list-style-type: none"> • Explore participant's job role • Understand participant's working patterns. 	2-3 minutes
Views and Understanding of the participant's VW	<ul style="list-style-type: none"> • Explore levels of understanding of the VW • Explore staff views on its set-up. 	5 minutes
Implementation	<ul style="list-style-type: none"> • Explore implementation barriers and facilitators. • Understand rationale for staffing model. • 	10 - 15 minutes
Working on a VW	<ul style="list-style-type: none"> • Explore satisfaction with working on a VW • Understand whether/how experience of working on a VW differ from other settings 	10 - 15 minutes
Wrap-up	<ul style="list-style-type: none"> • Collect final overall thoughts • Thank participant and explain how findings will be used 	5 minutes

INTRODUCTION	2-3 min
<ul style="list-style-type: none"> • Thank you for agreeing to take part in this interview. • Introduce the HIN: the Health Innovation Network has been commissioned to evaluate SWL virtual wards- with a specific focus Sutton or Kingston/Richmond. • As part of this evaluation, it is useful to understand from staff working with/ on the VW what their experience is of the service. This information will help to understand some of the things that have worked well as well as any key areas for improvement. • This discussion is expected to last 30-45 minutes dependent on your responses and how much time you have. <p>Consent:</p> <ul style="list-style-type: none"> • Your participation in this interview is voluntary and you can change your mind at any time. • The information that you provide will be treated in the strictest confidence by the HIN and all responses will be anonymised and only be reported in aggregate. • The opinions and views you provide in the interview will be used for evaluation purposes only. Publications relating to the evaluation study will only provide aggregated and anonymised summaries of interviewees' responses. • The interview documentation, recording and notes will be securely deleted from the HIN files a year after publication of the final evaluation report. • We would like to record the discussion for analysis purposes, these recordings will be used to help us with the findings of the research. The interview may be stopped at any time at your request without giving a reason and you are under no obligation to provide responses to any question during the interview. • Can we have your permission to audio record the interview? The recording will be used to ensure that we transcribe details correctly, it will not be provided to anyone outside of the evaluation team and will be destroyed three months after we have completed the evaluation. 	

<p>[INTERVIEWER NOTE]</p> <p>If telephone OR MS Teams, obtain consent on audio recording. Check whether participant has any questions and is happy to begin the interview.</p> <p>START RECORDING</p>	
<p>OVERVIEW OF ROLE</p>	<p>2-3 min</p>
<p>First, I'd like to find out a bit more about you.</p> <p>Could you tell me a bit about yourself: what your role is?</p> <p>ADDITIONAL PROBES:</p> <ul style="list-style-type: none"> • And when did you start working on the VW? • [For clinical staff]: Other roles [try and understand participant's work patterns] 	
<p>VIEWS AND UNDERSTANDING OF VW MODEL</p>	<p>5 min</p>
<p>In your own words, can you briefly describe how does the VW work?</p> <p>PROBES: capacity, patient flows, staffing, governance and operating procedures, urgent response, out of hours etc</p> <p>Are these wards fully virtual or hybrid?</p> <p>How big is the team? (MDT, how often do they meet)</p> <p>Did you and the other VW staff receive any training/ support?</p> <ul style="list-style-type: none"> • If yes, was it helpful? Sufficient? • If not, would you have liked to? How? 	
<p>VM monitoring</p>	<p>10 min</p>
<p>Is the ward supported by remote monitoring? (If yes, how do you onboard patients i.e. are carers involved, any training for patients, how often do you contact patients)</p> <p>How do you manage risk?</p> <ul style="list-style-type: none"> • What are the different risk levels? What are the top 3 risks? • Where are the decision-making points? • What/where were the clinical risk <p>What data do you monitor and report?</p>	

<ul style="list-style-type: none"> • what operational/performance data is collected-how do you analyse this. • How regular do you collect. • Any patient feedback? 	
<p>WORKING ON THE VW [CLINICAL STAFF]</p>	<p>10 min</p>
<p>Now I'm going to ask you specifically about your experience of working on the VW.</p> <p>What difference do you feel the virtual wards have made? (Feeling up capacity, efficiency in the team, improving patient experience, patient outcomes)</p> <p>Overall how easy have you found the tech to use?</p> <ul style="list-style-type: none"> • How intuitive is it? • How does it integrate into your workflow and other systems? <p>What do you feel has not worked so well?</p> <ul style="list-style-type: none"> • How could your experience of working on the VW be improved? 	
<p>WRAP-UP</p>	<p>5 min</p>
<p>Overall, what aspects of the VW do you think have worked well?</p> <ul style="list-style-type: none"> • For you (PROMPTS: workload, job satisfaction, communicating with patients) • For patients • For the wider system <p>What aspects could have worked better?</p> <ul style="list-style-type: none"> • For you (PROMPTS: workload, job satisfaction, communicating with patients) • For patients • For the wider system <p>What health inequalities digital exclusion risks were considered?</p> <p><u>Sustainment</u></p> <p>What factors do you think are important to sustaining or scale up the VW? (What is key, gaps, opportunities, challenges)</p> <p>Is there anything else you would like to add?</p>	

Thank you and close interview.

- Thank participant for their time.
- Confirm next steps for the evaluation(s) and how findings will be used.

Appendix B - Car park

Pathway step	Risks / Concerns	Challenges	Opportunities	Recommendation/Next steps
Referral process	<p>Concern about capacity to consistently respond to referrals.</p> <p>Lack of clarity on who are the referrers, what are the referral routes and the eligibility criteria, which is not considered sufficiently clear.</p> <p>Concern as to whether a single telephone line for referrers and patients is appropriate, and the absence of data capture on call handling.</p> <p>Concern about taking consent for at risk patients including dementia referrals, and end of life patients who want to be discharged from hospital.</p>	<p>Patients having to provide information multiple times.</p> <p>Response time from referrers to answer clarification questions.</p> <p>Pathway for palliative care patients - whether an end-of-life referral should go to St Christophers for triage or to centralised referral system.</p> <p>Non-IV referral form is not available on PRUH EPR resulting in staff having to fill out additional info on an 'IV referral form' to get the patient admitted.</p>	<p>Standardised referral process and data capture across all referrers to ensure consistency and allow for quality safety audit.</p> <p>Capture and assessment of call handling data (eg: volume, response time, abandonment) to understand performance.</p> <p>There is a potential opportunity on phone lines via BHC telephony.</p>	<p>Capture the same information in all formats of referrals to ensure standardisation.</p> <p>Add a referral form for non IVAB to PRUH EPR</p> <p>Ensure clear escalation plan capacity in SOP.</p>
Data access	<p>Risk of duplication for St Christophers and lack of visibility of key documentation</p> <p>Risks associated with the lack of interoperability (due to different IT systems across different organisations), such as, safe and efficient transfers of care, health data security.</p>	<p>The palliative care team can access only some patient information from London care records - scans, discharge summaries, and blood tests.</p> <p>The palliative team struggles to access/share patients' records.</p> <p>Challenge of how to connect and provide access to the depth of information required in an efficient way that avoids duplication.</p> <p>Some PRUH staff use the EPR.</p> <p>Staff at St Christopher use system one.</p>	<p>All the data and there are routes of access.</p>	<p>A 'One Bromley' approach to and plan for interoperability is required</p>

Triage	<p>Concern that there is a lack of support for staff triaging referrals.</p> <p>Lack of clarity on who is the accountable professional for accepting referrals and triaging.</p> <p>Lack of clarity on who provides specialist input at the point of triage for end-of-life patients.</p>	<p>Insufficient support for triage as currently there are only three band 7 nurses.</p>	<p>A standardised approach for triage, including clarity on roles and responsibilities.</p>	<p>Review the triage process as a team and make any necessary amendments to the SOP.</p> <p>Communicate the agreed process to all stakeholders.</p>
MDM/ Care plan	<p>To ensure safe handover of patients across staff shifts, staff require access to accurate documentation, information on any issues, working diagnosis, and escalation criteria.</p> <p>During this early phase of development processes are being rapidly iterated, which requires agile working and clear protocols are required. In future - following testing - the approach can be standardised. Concern that the MDM only meets 5 days per week.</p>	<p>The challenge of how staff from different services/ organisations can support each other and operate as a multi-professional team.</p> <p>Provision of sufficient and appropriate out of hours cover.</p>	<p>Create a standardised process and template to run MDMs.</p>	<p>Define the roles and responsibilities within the MDM</p> <p>Develop a standard MDM template.</p>
Doccla	<p>Concern that Doccla will not be useable by all patients.</p> <p>Concern about how the experience and care for patients not using Doccla may not be comparable (eg: same breadth of data collection and real time updates, communication with staff etc).</p>	<p>Access for patients who do not use Doccla.</p>	<p>Doccla will allow users to add notes for patients in the service which should enable One Bromley staff to access more information on each patient.</p>	<p>To test the Doccla digital solution with users before going live.</p> <p>Develop a process for those not using Doccla functionality so there is equity in service provision and care.</p>
Discharge	<p>Risks associated with patients not being discharged in a timely manner.</p>	<p>Lack of confidence or reluctance to discharge resulting in, for example, double-checking and the patient staying longer on the ward.</p> <p>Mixed interpretation when no</p>		<p>More education of staff to increase their confidence and empower them to discharge from the virtual ward based on criteria set for each patient.</p>

		advanced clinician involved.		
Cross- team working	One Bromley team is not widely known across other services. Cross boundary working between Kings and PRUH.	Enabling functions are not aligned or set up to enable cross functional working including IG, HR, social care. Staff across functions and services do not know each other.		More promotion of the service Set up opportunities to connect staff in One Bromley to enable cross functions working.
Patient Involvement	Risks associated with patient pathway information only being available for the general service and for the IV pathway.		Patient satisfaction form/feedback mechanisms are available - electronic forms for secondary care and a phone call for the rapid response team. Staff happy to work with and be flexible around patient's preferences regarding visits and involvement of the family in care.	Create electronic patient information leaflet for all virtual ward specialty areas
Staff mix	Current vacancies include consultant post capacity (frailty 0.5 WTE and general physician 0.25 WTE) Weekend GP staffing not in place.	Difficult to determine whether the current skill mix and bandings are right (3 x bands 7; 2 x bands 6; 1 x band 5, 4 and 3). Difficult to determine whether additional advanced clinician time is needed.		Review the staffing model to establish any gaps in skills mix and determine if there is a need for further advanced clinician time. Develop a training plan.
Escalation	GP staffing is currently not in place at the weekends. The weekend escalation process is unclear.	There are formal and also informal structures in place to contact consultants. Informally consultants can be contacted via phone/email at any time. Formally escalation after 5pm and at weekends is through PRUH Ambulatory Care.		Establish a clear weekend escalation process that includes GP staff. Ensure the process is well documented, communicated and understood by the whole team.

Appendix C- Attendance list from the workshop

Name	Organisation	Job title
Joy Ross	St Christophers	Consultant palliative care
Fiona Hodson	St Christopher's	Nurse consultant
Peter Benfield	Bromley Healthcare	Info analyst
Elliott Ward	Integrated Care Board	Programme lead
Lynette Linkson	Princess Royal University Hospital	Respiratory consultant
Rachel Perry	South East London Integrated Care Board	Head of Integration
Adam Royall	Bromley Healthcare	General manager
Farah Mohedeen	Bromley Healthcare	Organisational lead
Adenike Dare	Bromley Healthcare	Consultant
Trudi Mola	Bromley GP Alliance	Deputy service manager
Krystyna Antoine	Bromley Healthcare	RN
Alison White	Health Innovation Network	Head of Patient Safety and Experience
Mohammed (Naz) Khan	Health Innovation Network	Project Manager
Ayobola Chike-Michael	Health Innovation Network	Senior Project Manager