

# Virtual Care, a Reality not a Dream!

## Cambridge University Hospital Virtual Ward Implementation Model

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[Click here to watch the full webinar](#)



Virtual wards have become an integral part of hospital care in many countries. But how do you go about setting up such a service in your hospital? Who are the relevant stakeholders that you need to bring together and how do you ensure patient safety while still providing the same level of hospital care? These questions, and more, were addressed during this 1-hour webinar, which highlighted how the virtual ward model at Cambridge University Hospitals (CUH) NHS Foundation Trust in the UK was implemented and is being run.

As the first speaker and Clinical Nurse Lead for the CUH Virtual Ward, Gemma Czech covered some of the practicalities of how to set up and run a virtual ward. This included a discussion of the technology solutions required and some of the factors that should help guarantee that the ward will be successful. Her colleague Andy Bailey, who is the Operations Manager for the CUH Virtual Ward, then provided more detail on running the ward and how its performance was being measured using state-of-the-art technology, and how patients have responded to the service.

### The CUH Virtual Ward @ Home

Czech began by noting that a priority for the CUH Virtual Ward @ Home was to be able to identify patients who could be managed at home safely using clinical-grade non-invasive monitoring that is FDA approved and that enables patients to receive ward-level care at home.

It is important to look at the needs of patients “holistically” and to take account of their individual expectations and health issues, said Czech. This will help to ensure that they’re managed safely and that being managed at home is the right option for them.

### Patients are key stakeholders

Since the CUH virtual ward opened in November 2022, more than 1100 patients have been admitted. Patient feedback has been very positive. Patients like the virtual ward because they can take ownership of their own health with the support of the medical team and the remote technology.

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Patients need to be treated as equals as they are one of the key stakeholders for the virtual ward, Czech said. They need personalized care plans and to understand what the virtual ward is for, what they can expect, as well as appreciate the benefits it offers to them and to the hospital overall.

### Virtual Ward Stakeholders

Stakeholder definition: Persons, groups, or organisations who have an interest in your service.

#### They may include:

- Technology providers
- Hospital transformation team
- Members of the public
- Professional bodies
- Partner organisations
- HR and recruitment
- Community services
- Volunteer providers

## Factors for success

There needs to be a good business plan in place for the virtual ward, Czech said. Factors to consider including in the business plan: who is going to set up the service, who is going to fund it, and who is going to be responsible for its day-to-day operation. The staffing model and patient engagement also needs to be considered, Czech said. The latter is vital for the service to work and ensure that any data being collected by remote monitoring is submitted to the hospital team.

With regards to technology, Czech noted it was important to have a good technology partner to help you determine what technology will be needed and ensure that this will be reliable and provide the information that you need.

Another important consideration is how the service will be communicated or publicised within the hospital, to encourage hospital teams to refer their patients to the virtual ward. Sharing success stories helps here, Czech said, as well as having strong and enthusiastic leadership.

There needs to be clear educational information for both patients and staff and set inclusion and exclusion criteria to help determine which patients can and cannot be admitted to the ward, Czech noted, pointing out that very few patients cannot be admitted to the CUH virtual ward.

## Running the ward

The CUH virtual ward is run by a dedicated team of **multi-speciality nurses, doctors, pharmacy staff, consultants, and other healthcare professionals** who ensure that the highest standards of care are provided. A typical day on the ward might start with staff handovers and reviewing any new patient referrals.

Virtual ward rounds are undertaken every day, with the patient receiving a telephone or video call to discuss how they are. **The CUH virtual ward uses a state-of-the-art technology solution provided by Masimo and data collected from home monitoring devices are continually reviewed.** This helps the team to detect any signs of potential deterioration early and call the patient or arrange to see them in person, either at the hospital or by sending a team member out to do a home visit.

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**“It’s really important to make sure that your patients engage in their monitoring”.**

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“It’s really important to make sure that your patients engage in their monitoring”, Czech said. Temperature, heart rate, oxygen saturation and various respiratory parameters are measured using Bluetooth-enabled wearable devices and patients need to be aware that they need to keep their mobile phones nearby so that their data can be relayed to the hospital.

Czech pointed out that the nursing staff will also meet regularly throughout the day to share relevant information, medications will be reviewed and couriered to patients as required, and new patients will be onboarded.

## Challenges and champions

“There’s always going to be challenges, they’re inevitable, but you have to keep focus for the benefit of the patients and innovation in healthcare”, said Czech. Staffing has been one of the biggest challenges so far, which has been largely down to funding and lack of awareness of the service among the general hospital staff.

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**“Virtual wards need champions to develop and grow these services across the world”.**

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Virtual wards need champions to develop and grow these services across the world, Czech said. She advised that the availability and benefit of the virtual ward needed to be constantly communicated to the rest of the hospital. “You have to be a champion of the service that you’re trying to deliver”.

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**“Technology is part of the world, and we have to embrace this within our healthcare systems”.**

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Concluding, Czech advocated that virtual wards were the future of healthcare. “Technology is part of the world, and we have to embrace this within our healthcare systems”, she said. “I think this is only the start of virtual wards and how we deliver care to our patients using technology. There is so much more to learn and develop”.



*Gemma Czech, Clinical Nurse Lead for Virtual Wards, Cambridge University Hospitals NHS Foundation Trust, UK*

## Pathways, Outcomes, and Patient Experience

Andy Bailey said that **key to the success of a virtual ward was to have a system that encourages referrals from the hospital teams that you are going to support.** He noted that, during the first few months of its operation, the CUH virtual ward saw an initial influx of patients, but referrals then fell. This drop in referrals lasted a few weeks and was despite having the buy-in of the hospital executive team and communicating the availability of the new service to the rest of the hospital.

### Set up pathways for referral

To address the downturn in referrals, Bailey said that he and other members of the virtual ward team met with each specialty and joined their clinical governance meetings. This led to the development of pathways for different groups of patients.

“A good example of that would be a recent pathway that we’ve just bought on which is with the **orthopaedic surgeons**”, Bailey said, which he added was “working really, really well”. This new pathway is specific for people who have had knee or hip replacement surgery. Once patients are mobile, they can now be admitted onto the virtual ward rather than remain in hospital for 2-3 days after their operation, once patients are able to mobilize, they can be sent home on the virtual ward to recuperate.

“This is a pathway that’s been set up over the last two or three months and is now working really, really well,” Bailey said. Multiple other pathways also exist to give guidance on **referral for patients coming from cardiovascular, neurology, oncology, and respiratory departments.** Patients can still be referred to the virtual ward outside of these agreed pathways, Bailey said, who noted that ad hoc referrals were increasingly, helped by the success of the set pathways.

“Sure enough, we started to see that our referrals went up,” Bailey said. So far **23 different specialties have referred patients to the virtual ward** and there are about **70 to 80 patients currently on the CUH virtual ward at any one time.** There are between five and 10 referrals made every day.



Andy Bailey, Operations Manager Virtual Wards,  
Cambridge University Hospitals NHS Foundation Trust, UK

### CUH Virtual Ward Overview

- Run by multi-speciality nurses, doctors, pharmacy staff, consultants, and other healthcare professionals
- 70–80 patients on the ward at any one time
- 23 different specialities have referred their patients to date
- Patient pathways created to aid referrals
- 5–10 referrals per day
- State-of-the-art technology solution provided by Masimo
- Home monitoring data continually reviewed
- Daily care costs £80-100 in virtual ward (vs £350-400 for hospital bed)
- Plans to expand virtual ward to 120 beds in future

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### Measuring success of virtual wards

One of the ways in which the performance of the CUH virtual ward is being measured is by calculating the number of hospital bed days saved.

“We take quite a pragmatic view on this,” said Bailey, noting that NHS England does not give exact guidance on what constitutes a bed day saving or how to show that virtual wards are cost effective. At CUH a bed day saving is calculated by considering the condition that the patient has been diagnosed with and the cost of their typical length of stay in hospital. This is then compared to the cost of treating on the virtual ward. For their estimations, **the cost of hospital care per day is assumed to be around £350-400 whereas the cost of virtual ward care is only around £80-100 per day.**

**“There’s a significant saving that’s made by a patient being on the virtual ward”.**

“So, there’s a significant saving that’s made by a patient being on the virtual ward,” Bailey said. He noted that the cost savings that can be achieved have increased the longer the virtual ward has been running. For instance, in the first month of its operation, the CUH virtual ward saved 4.6 beds, but if that is compared to 1 year later, almost 20 beds are being saved.

CUH Virtual Ward Bed Day Savings			
MONTH	BED DAYS	BEDS	COST (@ £400 /DAY)
Nov-22	139	4.6	£55,556
Dec-22	238	7.7	£95,070
Jan-23	260	8.4	£104,028
Feb-23	271	9.7	£108,599
Mar-23	183	5.9	£73,236
Apr-23	229	7.6	£91,653
May-23	278	9.0	£111,326
Jun-23	419	14.0	£167,422
Jul-23	353	11.4	£141,245
Aug-23	194	6.3	£77,739
Sep-23	353	11.8	£141,093
Oct-23	472	15.2	£188,611
Nov-23	598	19.9	£239,301
Dec-23	505	16.3	£202,148
<b>TOTAL</b>	<b>4493</b>	<b>10.5</b>	<b>£1,797,049</b>
<b>Average per patient: 4.13 days</b>			

### Patient experiences and feedback

Other performance measures that are being assessed include bed occupancy, average length of stay, readmission rates, which speciality patients are being referred from, and patient experiences and feedback.

**“Patient experience has been at the heart of this all the way through”.**

“Patient experience has been at the heart of this all the way through,” said Bailey. How patients would view and respond to the service was considered from the beginning by the core planning group, patient forums were set up, monthly questionnaires were sent out.

“We’re monitoring if there’s any complaints or concerns that come forward, but we haven’t had one single complaint in 14 months that the ward has been running”, said Bailey,

To date, 97% of the feedback received from patients has been positive, which exceeds the 85% target that was set when the virtual ward first opened. Patient feedback is important as it helps to revise the service to ensure it meets patients’ needs and expectations, Bailey observed. For instance, he noted how the patient feedback received so far has resulted in setting time slots rather than specific times for nurses to call, and arranging for equipment to be loaned if patients do not own a smart phone that is needed for the remote monitoring system. Patient feedback has also resulted in an educational video and other material to help explain the role of the virtual ward to them and their families.

### Looking to the future

One of the next steps for the CUH service is to see if it can stop patients being admitted to the hospital wards in the first place.

**“We want to create admission avoidance pathways”.**

“We want to create admission avoidance pathways”, said Bailey. “We want to stop patients going straight through the emergency department [to a ward]; see if we can catch patients in the community, care homes and local [general practitioners] that would otherwise be admitted to hospital – can we keep them in in their own homes or in the care homes?”

**Further referral pathways are being developed with respiratory, acute medicine and emergency department teams**, said Bailey. And work continues with key stakeholders such as EPIC and Masimo to better integrate the electronic health record into the central monitoring system.

**“We haven’t reached all four corners of the hospital yet, there’s still opportunity there.”**

“We want to embed virtual wards as ‘business as usual’, Bailey said, “We haven’t reached all four corners of the hospital yet, there’s still opportunity there”, he added. Part of the further plans are to expand the number of beds to 120 in the next year, create a virtual ward for children, and to collaborate further with nearby hospitals.

### Further information

#### Complete webinar Q&A:

[Click here to access all questions answered by the speakers](#)

#### CUH Virtual Ward

<https://www.cuh.nhs.uk/our-services/virtual-wards/>