Imperial College Healthcare NHS Trust Heart Failure Virtual Ward Standard Operating Procedure

Purpose of the document: To provide guidance within North West London for provision of care for patients under heart failure virtual ward monitoring.

Review schedule: To be updated as the service iterates.

12th December 2022

Version 0.6

Version	Date	Modified by	Updates
0.1	12.10.22	Carla Plymen	First Draft
0.2	25.10.22	Mark Sweeney & Shuli Levy	Second Draft
0.3	14.11.22	Mihir Kelshiker	Third Draft
0.4	21.11.22	Carys Barton	Fourth draft
0.5	22.11.22	Carla Plymen & Jodian Barrett	Fifth Draft
0.6	12.12.22	Carla Plymen & Alex Prinsley	Final Version for go live

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1 INTRODUCTION

1.1 This standard operating procedure (SOP) outlines guidance at Imperial College Healthcare NHS Trust (ICHT) for provision of care for patients under heart failure virtual ward monitoring and is aligned to the equivalent NWL SOP.

1.2 In line with national guidance, ICHT virtual wards will support people who would otherwise be in an acute bed. These patients will have their care reviewed daily by a registered practitioner (GMC, RN, AHP) for up to 14 days which reflects the maximum length of stay on a virtual ward.

1.3 In the United Kingdom, heart failure affects approximately 900,000 people and places a large burden on the NHS, accounting for one million bed days per year (2% of the NHS total and 5% of all emergency admissions to hospital)[1].

1.4 Digital technology plays a key role in reducing hospital admissions and facilitating earlier, safe, discharge, thus improving the quality of care for selected patients by bringing specialist care closer to home. As well as aiming to reduce the length of stay for unplanned hospital admissions, digital technology in heart failure aims to reduce admissions and readmissions and improve patient education, support and self-management. Virtual wards are a component of this whereby patients are discharged from hospital into a monitored environment, facilitating early supported discharged and reducing the risk of readmission.

1.5 Virtual wards are part of NHS England's national priorities and operational planning guidance. Funding has been provided by NHSX and other bodies to support these national ambitions and directives to upscale local remote monitoring initiatives established throughout the last few years.

1.6 Integrated Care Systems (ICS) have been asked to deliver virtual ward capacity equivalent to 40 to 50 virtual ward 'beds' per 100,000 population by December 2023 (equivalent to c. 1080 beds in NWL). Part of the NWL virtual wards programme to realise this capacity is to build on the existing heart failure virtual ward work.

2 PURPOSE

2.1 The purpose of heart failure (HF) virtual wards is to allow patients fulfilling selected criteria to get the care they need at home safely and conveniently when being within a hospital setting is not required[2]. This includes either avoiding admissions into hospital or supporting early discharge out of hospital.

2.2 This SOP has been co-designed with staff from HF, ED and the Remote Patient Monitoring (RPM) Hub.

3 AIMS

3.1 The aim of this SOP is to optimise early supported discharge and admission avoidance pathways. It outlines the core requirements expected of HF virtual wards.

3.2 This will enable ICHT to:

- Ensure heart failure specialist nurse involvement in the VW model.
- Agree resource requirements for HF virtual wards.
- Have similar core HF virtual ward offering as the entirety of NWL ICS.

- Support each department that manages people with HF towards a shared ambition.
- Optimise the early supported discharge and admission avoidance pathway.
- Address digital inclusion and ensure equity of care.
- Provide resilient, sustainable and consistent services across the ICS.
- Increase the proportion of higher acuity patients in virtual wards in the long term.
- Provide seamless continuity for patients between services.

[1] https://www.nicor.org.uk/national-cardiac-audit-programme/about-heart-failure/
[2] https://www.england.nhs.uk/virtual-wards/

4 OUTCOMES AND BENEFITS

4.1 The HF virtual ward is anticipated to improve patient experience for whom virtual ward care is appropriate, as well as carer and staff experience. For example, patients being managed in their own homes often experience a better sense of ownership versus patients being treated in hospital[3].

4.2 The service will also provide operational benefits to the system through reducing admissions and re-admissions as well as reducing the number of handoffs and unplanned contacts[4]. This will support patients to receive care at the right time in the right place for them thereby promoting patient-centred care.

Patient and carer experience

- Patients feel safer through constant monitoring
- Improved confidence in outpatient setting that they have point of contact if concerns and suitable advice
- Increased mobility and empowerment in own home
- Familiar surroundings
- Better sense of control
- Offers more time spent with families for those on end of life / palliative care pathway
- Patient cared for near family/home environment - especially important if language/carer/home adaptations in place in the home.

Quality benefits

- Improved co-ordination of care
- Better medication adherence / supporting patients to stay on evidence-based therapies or medications
- Reduced risk of hospital acquired infection and deconditioning
- Improved patient self care
- Rapid optimisation leading to improved morbidity/mortality and quality of life
- Lower risk of developing delirium and other complications that may develop from unfamiliar hospital surroundings
- Can offer preferred place of care/death (PPC/PPD) at end of life

Staff experience

- Upskill staff through collaborative working across care settings and shared learning
- Primary care /secondary care staff avoid having to arrange an admission to hospital, which is often complex and takes a lot of time.
- RM adjunct to care aids staff decision making
- Increase efficiency (using technology)
- New ways of working for staff (e.g., more flexibility)
- More integrated working

Financial benefits

- Bed day saving through admission and re-admission avoidance and early supported discharge
- Reduced handoffs enable time saving and reduced length of stay
- Reduced estate cost
- Reduced cost through capacity benefits – in terms of flow through the hospital for all other patients (e.g., London Ambulance Service or Emergency Department waits)
- Reduced cost for patients (e.g., travel costs, days off work)
- Reduced transport costs (e.g., London Ambulance Service calls)
- Reduced unplanned contact, including Emergency Department attendances and GP visits

4.3 The platform solution for HF virtual ward extends to long-term monitoring and optimistion, and is shared across Cardiovascular care pathways

[3] https://www.bmj.com/content/bmj/378/bmj.o1603.full.pdf
[4] https://www.magonlinelibrary.com/doi/full/10.12968/bjhc.2021.0073

5 SCOPE

5.1 This SOP relates to the core delivery requirements of HF virtual wards for patients diagnosed with HF at ICHT.

5.2 The SOP is applicable to all ICHT staff involved in the care of HF patients who may be managed on a virtual ward.

5.3 The virtual ward offer will be delivered to patients within their usual place of residence. Patients registered with a local GP but living outside these areas will be offered this service at the discretion of the lead provider.

6 GOVERNANCE

6.1 All virtual wards in NWL should follow the framework outlined in the NWL Virtual Ward Governance Principles document, which outlines clear roles and responsibilities of all partners taking a collaborative approach to governance and risk management.

6.2 All staff involved in the HF virtual ward service will take a quality and safety approach and will operate within the Trust's existing clinical, quality and information governance policies and procedures.

7 STAFFING

7.1 Patients who are being monitored on a virtual ward will have access to a team of nurses seven days a week between 08:00 – 20:00. This team will be able to access the expertise of the HF specialist nursing team five days a week 09:00 – 17:00, as clinically necessary, set out by predetermined criteria. Out of hours, escalation will be to 111/GP/999 as clinically necessary as per criteria.

7.2 The patient's responsible clinician will be a cardiology consultant with expertise in heart failure.

7.3 The HF team will include a cardiology consultant and a HF specialist nurse / pharmacist (HFSN/P).

8 PATIENT COHORT

8.1 This service is designed for patients who can be treated appropriately at home, who would otherwise be in an acute bed, and who have a confirmed diagnosis of HF.

8.2 The HF team will risk stratify patients and advise on suitability of patients for virtual ward admission.

8.3 The criteria below are the core requirements for admitting a patient onto the HF virtual ward.

8.4 Clinical judgement remains paramount for all assessments particularly for patients with higher risk factors or other complicating medical conditions.

8.4.1 Inclusion criteria:

- Confirmed HF diagnosis (HFpEF / HFrEF) on echocardiogram or cardiovascular magnetic resonance (CMR) scan
- Would otherwise be in a hospital bed
- Willing, able and suitably supported to receive treatment and monitoring at home

- Multidisciplinary team (MDT) feels the virtual ward is the best place to meet the patient's required ongoing clinical needs
- Over 18

8.4.2 Exclusion criteria

- Delirium, cognitive impairment or established dementia that limits ability to safely and fully engage with virtual ward
- Not suitably supported to receive treatment and monitoring at home
- Inability to engage with remote monitoring equipment
- Unable to escalate concerns (e.g., due to cognitive impairment and no carer support)
- MDT feels virtual ward is inappropriate and does not meet the patient's required ongoing clinical needs
- Concomitant medical problem requiring inpatient stay / hospital admission
- Competing comorbidity/diagnosis requiring priority treatment
- Ongoing IV diuretic requirement via SDEC pathway unless reviewed and accepted by HF team

ON BOARDING

8.5 If patients meet the relevant virtual ward pathway criteria, agreed by the HF team, they will be onboarded to the HF virtual ward via the virtual ward pathway. This process is described in the accompanying roles and responsibilities document.

8.6 Patients being onboarded to a HF virtual ward will agree a discharge / escalation plan including monitoring arrangements with their responsible clinician.

8.7 Patients onboarded onto the HF virtual ward will be provided with the relevant equipment for monitoring.

8.8 Patients will be given information (RAG letter) on how they will be monitored and how and who to contact if they need help or support (both in and outside of working hours) as part of the onboarding process.

8.9 Once the patient is onboarded, their GP will be notified.

9 MONITORING

9.1 Virtual monitoring should commence on an agreed date, decided with the patient at the time of onboarding, normally coinciding with the date of discharge from hospital.

9.2 Patients will submit readings that are reviewed daily for a maximum length of 14 days. If monitoring is required beyond 14 days, this will be discussed with the MDT.

9.3 The responsible clinician should adjust observation frequency as per clinical needs.

9.4 Patients in the virtual ward will be reviewed weekly at the HF MDT. This will be used to review patients' progress, plan discharge and referral to appropriate specialities if required.

9.5 *Ad hoc* interaction with the HFSN team is expected on an ongoing basis; contact details will be provided for the digital hub team.

10 RECOVERY AND DISCHARGE

10.1 Virtual ward monitoring will end if the patient:

- Meets the virtual ward discharge criteria
- Withdraws their consent for assessments or fails to engage with the team
- Has been re-admitted to hospital or an onward referral has been made which supersedes the need for remote monitoring on the virtual ward

10.2 The discharge criteria are as follows:

- Completed treatment and patient returning to stable baseline and managing decompensation recovery.
- Sustained stable clinical observations and recovering from acute decompensation.
- Stable on oral therapy and has appropriate contact details and individualised plan of care.
- Follow up booked with specialist HF team in hospital or in the community.
- Patient agreed discharge with responsible clinician.
- GP informed of discharge.

11 MANAGING ESCALATIONS

11.1 Patients will be provided information on their escalation plan during the onboarding process.

11.2 If a patient highlights a concern or deteriorates whilst on the virtual ward, the HF team are notified as per the defined escalation protocols and a treatment decision is made.

11.3 Patients requiring a change in prescription will have new medicines couriered to them via the RPM Hub team.

11.4 If the patient is critically unwell, 999 should be called for urgent intervention and the patient's responsible clinician should be notified.

11.5 If the deterioration/concern occurs outside of working hours, the patient is advised to contact 111/999, their GP or the RPM Hub depending on their symptoms and assistance required.

12 ADMISSION AVOIDANCE PATHWAY

12.1 The admission avoidance pathway is for patients with a confirmed diagnosis of HF identified within the Emergency Department (ED)/Same Day Emergency Care (SDEC) or outpatient pathways that would otherwise require a hospital bed.

12.2 The overall inclusion and exclusion criteria apply (8.4).

12.3 The below table indicates additional factors that should be considered when determining whether a patient is an appropriate virtual ward admission via the admission avoidance pathway.

12.4 If any of the "treat in hospital" criteria are met, the patient should not be admitted to the HF virtual ward and should be treated as appropriate in hospital.

12.5 If staff are unclear whether the patient is eligible, they should discuss with the HF team during working hours.

12.6 Eligible patients should be discussed with the HFSN team and will need review in order to instigate a management plan.

12.7 See Appendix 3 for the HF ESD pathway.

12.8 Patients requiring IV diuretics via SDEC will be referred via Cerner by the HF team Following period of IV diuretic therapy via SDEC, the patient may be referred to the virtual ward as per the roles and responsibilities document.

13 EARLY SUPPORTED DISCHARGE PATHWAY

13.1 The early supported discharge pathway is for patients with a confirmed diagnosis of HF who have been admitted following exacerbation, who are not yet medically optimised but would be able to complete their treatment at home.

13.2 The overall inclusion, exclusion and discharge criteria apply (8.4 and 11).

13.3 For patients still requiring IV diuretics via SDEC, the patient will be referred to the virtual ward as per the roles and responsibilities document following conclusion of IV diuretic therapy.

Table 1: HF condition specific factors that would identify people who might be managed in a virtual ward.

Factor	Discharge home	Treat in hospital
Breathlessness	None at rest Not requiring oxygen / oxygen at home already	New at rest New oxygen requirement not available at home
Red flag clinical signs (RAG) – e.g., syncope, worsening chest pains	No	Yes
Able to cope at home	Yes	No
Level of activity	Can do minimum activities of daily living / pre-morbid	Cannot do minimum activities of daily living
General condition*	Not significantly changed from baseline	Significantly deteriorated from baseline
Level of consciousness	Normal	Abnormal
Social circumstances	Well supported	New requirement / significant increase in requirements for support
Oedema	Manageable in local SDEC	Does not meet local SDEC criteria
Known diagnosis of HF & known to the HF team	Yes	No

**If patient is significantly deteriorating and requiring end of life or palliative care, when preferred place of care is home, seek alternative appropriate community pathway.*

14 REPORTING

14.1 All virtual wards in NWL should follow the reporting requirements outlined in the NWL Virtual Ward Governance Principles document as well as their individual Trust's requirements (Appendix 1).

14.2 A continuous improvement approach should be taken with the HF virtual ward service, agreed during implementation and mutually as the service iterates.

15 IMPLEMENTATION AND DISSEMINATION

15.1 This document is to be implemented as of December 2022.

15.2 All relevant members of staff are to be made aware through induction of this procedure and any related policies or procedures.

15.3 We will form a community of practice to ensure we are maximising utilisation and continuously reviewing together our virtual ward offer across NWL

APPENDICES

1. NWL VW governance principl

2. Virtual Ward: Roles and Responsibilities

HF team will inform Remote Patient Monitoring (RPM) Hub team that patient is on the pathway by email imperial.remotemonitoring@nhs.net – using the referral proforma*.

a. **Early Supported Discharge pathway** – patients will be informed during clinical review and provided with Luscii information sheet during their inpatient stay. The Heart Failure team will provide the equipment (weighing scales, blood pressure cuff) to the patient.
b. **Admission Avoidance pathway** – patients will be informed via telephone/during clinical review by Heart Failure team to expect an activation text message for VW monitoring using Luscii. Patients will be asked to collect the equipment (weighing scales, blood pressure cuff) from the main reception at Hammersmith, St Mary's or Charing Cross Hospitals. Where this is not possible, the kit will be couriered to the patient.

The HFSN complete the threshold symptom escalation form on Cerner for the RPM team to refer to. This form is accessible via – *Ad Hoc → Remote Monitoring Hub Folder → Remote Monitoring* – specifically parameters for

c. Blood pressure
d. Heart rate
e. Weight

The RPM Hub team will admit the patient to the Cerner Virtual Ward. The majority of patients will be onboarded by the HFSN in early supported discharge, where required the HFSN will inform the RPM hub team of a patient who will be require onboarding to Luscii. The RPM hub team will call the patient to complete the process. For patients on the admission avoidance pathway, the RPM Hub team will telephone the patient for equipment collection at Hammersmith, St Mary's or Charing Cross Hospitals main reception, or via courier to the patient's home.

The RPM Hub team will telephone the patient within 24h to confirm onboarding, provide technical support and confirm patient instructions to input readings.

Any loaned equipment (BP machine, weighing scales) will have serial number listed on comments section of the dashboard (HF/digital hub).

f. RPM Hub team to check if patient can return device labelled “For Heart Failure Team” at first call with HFSN

Patient will be instructed to input daily morning readings of BP, HR and weight on Luscii.

Patient will be instructed to complete the symptom questionnaire every morning.

RPM Hub team will have scheduled contact with patients by telephone on day 2, 7 and 14. If no data entered or amber /red flags, the RPM Hub team will proactively contact the patient the same day.

RPM Hub team to attend weekly HF MDT’s Monday at 1pm with HFSN. Escalations from HFSN can be discussed at full HF MDT Tuesdays at 11am.

Patient will be instructed to contact RPM Hub team by telephone if their readings go outside of the set parameters on any day.

RPM Hub team to review measurements (BP, heart rate and weights) and symptom questionnaire responses on Luscii if contacted by patient by telephone.

RPM Hub team will refer to previously set escalation criteria and forward any queries accordingly to the HF team via email: hfu.imperial@nhs.net. The HF administrator will contact the relevant HFSN within hours Monday – Friday 9-5pm.

If patient remains stable, RPM Hub team will discuss with HFSN prior to discharge on day 14 and patient will be discharged from VW pathway. A discharge summary, including a list of medications, will be sent to the GP and recorded on CERNER.

RPM Hub team will arrange for the patient to return any loaned equipment at next appointment or to the main reception at Hammersmith, St Mary’s or Charing Cross Hospital.

If patient unstable or concerns raised RPM Hub team will refer to escalation criteria and contact the relevant specialist for advice.

Contacts:
RPM Hub contact number: **0203 704 3704**
HFSN team- Monday to Friday 9-4 only

- St Marys Heart Failure Team: 020 3312 3242
- Charing Cross Heart Failure Team: 020 3313 0223
- Hammersmith Heart Failure Team: 020 3313 1697

PATIENT REPORTS: ***will be individualised***	**ESCALATE TO:**
Weight gain of 2kgs over 3 days	HFSN team
Weight loss of > 4.5kg over 3 days	HFSN team
Systolic BP below 90 mmHg (3 consecutive attempts)	HFSN team
Increased leg swelling	HFSN team
Palpitation (without associated symptoms)	HFSN team

New vomiting or diarrhoea	HFSN team
New reduction exercise tolerance / PND / orthopnoea	HFSN team
Dizziness	HFSN team

PATIENT REPORTS:	**ESCALATE TO:**
Severe SOB	LAS/GP/111
Syncope	LAS/GP/111
Chest pain at rest	LAS/GP/111

3.