written materials may not be the optimum medium for this, particularly with the rise in remote consultations following the Covid-19 pandemic. Mobile applications (Apps) have shown early promise as patient education tools. In particular, 'Avatar'-based Apps, where a virtual, interactive 3D character serves as a teacher, have shown potential in other conditions such as ischaemic heart disease and rheumatoid arthritis.

Methods A moderated, structured focus group of 8 HF patients and one patient carer was held to explore their experiences with patient education and identify areas in which HF education and knowledge of self-care was lacking. All participants shared their thoughts during moderated discussion, and recurring themes were identified. Participants then developed a 'curriculum' of topics that they considered most important in an educational App, with input from the HF team.

Results Key themes that emerged from patients' prior experience of patient education included feelings of being overwhelmed and isolated during the initial diagnosis of HF, the importance of a trusted medium for accessing health information (and fear of misinformation), and 'a picture says a thousand words' – visual information was easier to absorb than text. The educational curriculum developed by participants prioritised the following areas: impact on lifestyle, medical management (including the importance of HF medicines), lifestyle changes and care planning, and self-management (including monitoring for signs of deterioration). A prototype App was developed in conjunction with Cognitant Group, using an Avatar (figure 1). The Avatar was designed to be a patient expert in HF, aged ~65 years old. A living room setting was picked for the content for viewers to feel more relaxed. For Avatar movements to seem natural, voice and movements were recorded and synchronised using motion-capture technology. The first module entitled 'Living with heart failure' outlines of the following topics: explaining HF and the typical patient journey, the purpose of HF medications, lifestyle advice (including exercise and healthy eating, smoking and alcohol, sex and relationships), self-monitoring of HF symptoms, when to call for help and signposts to trusted HF educational resources. Acceptability of the App is currently being evaluated in the HF cohort at this specialist centre.

Conclusions Avatar-based Apps may be a useful tool in patient education in HF when co-designed with patients. Further research will evaluate the acceptability of such an App to a cohort of patients in a specialist HF centre.

Conflict of Interest Laboratoires Servier provided funding for the development of the App. Dr Singhal's salary is funded by a fellowship from Abbott.

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ONE YEAR OUTCOMES OF HEART FAILURE MULTISPECIALTY MULTIDISCIPLINARY TEAM VIRTUAL MEETINGS

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Background/Introduction Heart Failure is frequently associated with several comorbidities such as ischaemic heart disease,

diabetes mellitus, chronic obstructive pulmonary disease, chronic kidney disease and frailty. This level of complexity is best dealt with by a multispecialty multidisciplinary team (MDT) model.

Methods This was a single centre observational study (January 2020-December 2020) that was undertaken in a British university hospital looking at effect of HF multispecialty virtual MDT meetings on HF outcomes. Patients acted as their own controls outcomes compared for equal period pre versus post MDT meeting. The multi-specialty meeting was conducted once monthly via video-conferencing. It consisted of heart failure cardiologists (from primary secondary and tertiary care), heart failure specialist nurses (hospital and community), nephrologist, endocrinologist, palliative care specialists, chest physician, pharmacist, pharmacologist and geriatrician. Recommendations were made as consensus from the multispecialty meeting. The main outcome measures were 1) number of hospitalisations and 2) outpatient clinic attendances 3) cost savings.

Results A total of 189 patients were discussed from January-December 2020. This was uninterrupted during the COVID-19 pandemic. The mean age was 70.3 ± 18.1 years and median follow-up 6 months (range 1-13 months). The mean Charlson Co-morbidity score was 5.3 ± 1.2 and Rockwood Frailty Score was 4.9 ± 1 . The mean number of outpatient clinic attendances avoided was 1.7 ± 0.4 . This reduced inconvenience to patients, saved patients money (transport and parking costs) and led to carbon footprint reduction. The MDT meeting total costs were £15,400 and the 31 clinic appointments they generated cost an estimated £3720. However, the MDT meetings prevented 277 clinic appointments (cost saving £33,352). Finally, the mean number of hospitalisations pre-MDT was 0.7 Vs 0.2 post MDT ($p < 0.01$) with a saving of around 730 bed days (estimated cost-saving £260,000).

Conclusion The HF multispecialty virtual MDT approach provides seamless integration of primary care community services with secondary and tertiary care. Consensus decision from MDT meetings provides holistic approach for HF patients with comorbidities and frailty, and reduces inconvenience to patients by preventing the need to attend multiple specialty clinics. This approach can also lead to significant cost-savings to the healthcare system.

Conflict of Interest nil

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DEVELOPMENT OF OUTPATIENT BASED ACUTE HEART FAILURE CARE CALLS FOR DEVELOPMENT OF CLINICAL PSYCHOLOGY SERVICE FOR WHOLE-PERSON CARE PROVISION IN THE UK

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Introduction Acute heart failure (AHF) is associated with 7-11% mortality and substantial morbidity. Whole person care of patients with HF is important as depression and hopelessness are prevalent. Patients may feel more hope if they can be successfully treated with IV diuretics at home, in the community or hospital ambulatory care [outpatient management (OPM)]. In 2016, 24% of HF services offered OPM in the

UK. Observation studies of OPM suggest substantially lower mortality than IPM data in National HF audits. This suggests observation bias. Aims: To determine: (i) if there has been expansion in OPM service in UK centres; (ii) what proportion of patients are treated with OPM; (iii) what proportion of HF service has clinical psychology support; and (iv) feasibility of conducting a multicentre randomised controlled trial (RCT) in the UK to test safety and cost-effectiveness of OPM. Methods and

Results The 'AHF-IN or OUT-Survey' was sent using Survey Monkey software via the UK HF Investigators Research Network and local Clinical Research Network to hospitals in the UK in 2021. 53 responded and estimated 25485 patients with AHF receive inpatient care per year - median 600 per site [IQR 295,800]: 2730 patients {median 50 [7,100] per site} are treated per year with OPM, representing 9.7% of the total population of patients who had AHF. 67% (35 of 53) centres provided access to OPM. Of the 17 which do not (33%), 11 of these hope to develop this service while 4 do not know if they should develop this service. Two sites had no intention to develop this service. 4 provide Subcutaneous (SC) diuretics only whilst the majority (31) provide IV diuretic service, including 9 which can deliver both IV and SC

Diuretic Service. 28 provide Hospital based OPM ("frusemide lounge"/ambulatory care centre). There are 8 community-based services and 12 sites can deliver parenteral diuretics at home (figure 2). Table 1 shows details of the healthcare professionals who administer outpatient based IV diuretic treatment. Only 19% (10) have clinical psychology service; whilst 75% (39) do not. 6% (3) of respondents are not sure if they have clinical psychology service. We are planning a multicentre RCT to test if indeed OPM of AHF is safe, cost-effective, improves wellbeing and hope. 3573 patients are eligible to take part in the SAFE-RCT over 2 years - median 64 per site [33,100]. 1501 can be randomised within 2 years {median 20 per site [30,50]}.

Conclusions Outpatient based IV diuretic therapy is gaining popularity in the UK. Only a small minority of hospitals have clinical psychology service for patients who suffer from HF. Before further rapid expansion of outpatient based IV diuretic service in the UK, a multicentre RCT is urgently needed to test the safety and cost-effectiveness of this innovative service. Importantly, there also needs to be expansion of clinical psychology service alongside in order to provide patients with excellent whole person care

Conflict of Interest No

Abstract 133 Table 1 Who administers outpatient based IV diuretic treatment?

Frequency	%	
"Community IV team"	8	15.4
Ambulatory team	3	5.7
Cardiac outpatient nurses	1	1.9
District nurse	2	3.8
Heart failure specialist nurse	17	32.7
rapid response team (community)	1	1.9

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LANCASHIRE OBJECTIVE VOLUME EVALUATION OF LEG OEDEMA IN HEART FAILURE RANDOMIZED CONTROLLED CROSS-OVER TRIALS (LOVE-HF ARTIFICIAL INTELLIGENCE RESEARCH PROGRAMME): RATIONALE AND METHODOLOGY

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Introduction In England and Wales, heart failure (HF) was the primary diagnosis for >81,000 hospital admissions in 2016-17, with a 30-day readmission rate of nearly 20%. The National HF Audit reports that half of these admissions were associated with moderate or severe peripheral oedema. Conventionally, leg oedema is assessed and graded by a healthcare professional (HCP). A serial measurement of weight is an alternative method of assessing water retention at home but this relies on patient compliance. The Heartfelt device uses high-resolution cameras to generate 3D images of the lower legs and calculates volumes with a precision of about 20mLs without the need for active patient input. Linking Artificial Intelligence algorithms may then be applied to inform either the patient or a healthcare professional of appropriate actions.

Methods The Lancashire Objective Volume Evaluation of leg oedema in Heart Failure (LOVE-HF) artificial intelligence research programme consists of two pilot randomised controlled, cross-over trials (each with 30 patients and 30 day assessment periods), a registry and screening log (the latter to permit comparison of baseline characteristics to ensure generalisability).

Abstract 133 Figure 1 Ways to provide outpatient based acute heart failure treatment