



Medicines Optimisation Innovation Centre



Appendices

An Evaluation of New Models of Prescribing (NMOP):

A Heart Failure
Nurse Specialist
Prescribing Pilot

September 2022

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Appendix 1: Task and Finish Group Membership

Name	Title	Organisation
Gillian McCorkell	Nurse Consultant (Chair)	PHA
Andrea Linton	NMOP Co-ordinator	HSCB ¹
James McAuley	NMOP Project Manager	HSCB
Cathy McClure	Heart Failure Nurse Specialist	BHSCT
Donna McLaughlin/ Hilary Clarke	Heart Failure Nurse Specialist	NHSCT
Myrtle Donnell	Heart Failure Nurse Specialist	WHST
Matthew Galway (*until Feb 2021)	Cardiology Pharmacist	BHSCT
James Blackburn Smith (*from Feb 2021)	Cardiology Pharmacy Lead	BHSCT
Brendan Moore	Clinical Pharmacy Development Lead	WHST
Linden Ashfield	Principal Pharmacist - Clinical Services Pharmacy	NHSCT
Paul Molloy	GP	GPC
Glenda Fleming	Deputy Director	MOIC
Karen Jenkins	Interim Divisional Nurse/Governance Manager Medicine and Emergency Medicine	NHSCT
Lana Dixon	Cardiologist	BHSCT
Katy Rennick	Cardiology Service Manager	BHSCT

¹ On 31 March 2022 the HSCB was closed and its staff and functions migrated to the Strategic Planning and Performance Group (SPPG) of the Department of Health on the 1st April 2022

Appendix 2: Analysis plan

Overview of project aims and objectives:

The project considered new and transformative processes to allow prescribers to prescribe directly to patients, rather than going through a third party, and proposed mechanisms to enable new models of prescribing (NMOP).

The objectives of the pilot project are to:

- Establish potential volume of prescribing activity that can be implemented by heart failure nurse prescribers
- Identify benefits in relation to access to medication and reducing pressure on GPs
- Support and enhance the delivery of tailored heart failure nurse interventions to patients, maximising professional skills at the point of care delivery
- Support the delivery of care pathways that can be delivered by a heart failure nurse
- Reduce delays in patients accessing medication - greater opportunity to access the right medicines, at the right time, from the right person.
- Support a reduction in the amount of unnecessary health care appointments and hospitalisations and promote faster recovery and self-caring.
- Support improvements in patient / client concordance with taking prescribed medicines.
- Establish communication processes to GPs regarding items prescribed.

In addition: to evaluate

- whether or not the aims and objectives of the project have been met using various data collection methods e.g. surveys, audits, patient stories, correspondence and a stakeholder workshop.

Analysis mapped to aims and objectives:

Data/info sources:

- clinician reports (excel),
- mentimeter reports (excel)
- stakeholder surveys (citizen space),
- patient surveys,
- process maps (word document),
- minutes from task and finish groups and other workshop meetings (word documents) for qualitative reports – perhaps only those at the end of project are useful for collecting qualitative outcomes. Agree earlier reports were for facilitating service delivery rather than record outcomes of pilot.
- Patient stories
- Cost of prescribed items
- Summary of time and resource investment into the pilot implementation

Data source	Processing needed	Who is responsible
Clinician audit reports (excel sheet)	Collation and combination of baseline, interim and final excels	MOIC

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	Learning from physio pilot- check combined master excel sheet with HCSB pre analysis	
Mentimeter reports (excel sheet)	Sorting, extracting and theming of qualitative comments Calculating mean scores of agreement rating	HSCB lead on sorting, MOIC lead on theming MOIC
Stakeholder surveys (citizen space)	Sorting, extracting and theming of qualitative comments Descriptive summary of other responses	HSCB lead on sorting, MOIC lead on theming MOIC lead on key findings HSCB lead on summary and MOIC review and provide feedback
Patient surveys	Descriptive summary of responses	HSCB lead on summary and MOIC review and provide feedback
Process maps (word document)	Collation and summary of steps Compilation into PowerPoint	HSCB lead on summary and MOIC review and provide feedback MOIC lead on key findings
Cost of prescribed items Prescribing data	Summary of volume and cost of items prescribed.	HSCB to insert later when data becomes available (Nov/Dec 21)
Patient stories	Collation and summary	HSCB to collate and MOIC lead on key findings
Minutes from task and finish groups and other workshop meetings Emerging themes from all data sources	Collation of discussion points from the results	MOIC to provide bullet points/ short sections HSCB to expand

Results tables and sections to be populated:

During the stakeholder feedback session, data from x heart failure nurse prescribers and other stakeholders were collected.

When asked how strongly do you agree or disagree to the following statement and to select a score from 0-5 (or 1 -5) (5 = strongly agree and 1 strongly disagree).

		Mean Score
1	Robust governance arrangements put in place to ensure safe and effective prescribing	
2	This pilot project provided a greater opportunity to access the right medicines at the right time from the right person	
3	The pilot project maximised the use of professional skills at the point of care?	

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4	The pilot project displaced prescribing activity from GP practices	
5	This pilot project facilitated more timely titration of doses to tolerated maximums	
6	This pilot project supported a reduction in the amount of unnecessary health care appointments and hospitalisations and promoted faster recovery	

Objective	Theme	Supporting extract	Consider any negative impacts to be listed here corresponding to objectives (as per dietetic pilot)?
<ul style="list-style-type: none"> Robust governance arrangements in place to ensure safe and effective prescribing 			
<ul style="list-style-type: none"> Identify benefits in relation to access to medication and reducing pressure on GPs 			
<ul style="list-style-type: none"> Establish communication processes to GPs regarding items prescribed. 			
<ul style="list-style-type: none"> Support and enhance the delivery of tailored heart failure nurse interventions to patients, maximising professional skills at the point of care delivery 			
<ul style="list-style-type: none"> Support the delivery of care pathways that can be delivered by a heart failure nurse 			
<ul style="list-style-type: none"> Reduce delays in patients accessing medication - greater opportunity to access the right medicines, at the right time, from the right person. 			
<ul style="list-style-type: none"> Support a reduction in the amount of unnecessary health care appointments and hospitalisations and promote faster recovery and self-caring. 			
<ul style="list-style-type: none"> Support improvements in patient / client concordance with taking prescribed medicines. 			

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Sample characteristics

Between DATE and DATE, N=X heart failure nurse prescribers in the LOCATION were involved in a pilot of new models of prescribing pilot. At the start, middle and end of the pilot, prescribers reported on their prescribing activity (1 week period of data collection) (Patient and prescriber characteristics at the start (DATE) and end (DATE) of the pilot are summarised in Table X.

Sample characteristics Table X

	Start	Interim	End
Number of prescribers recording data			
Number of patient contacts			
Mean WTE clinical time			
Mean number of years qualified as prescriber			
N of prescribers with experience of using HS21			
Trust N (%) NHSCT N (%) WHSCT N (%) BHSCT			
Patient Diagnosis N (%) Mild / moderate/ severe			
Consultation N (%) Virtual N (%) Face to face N (%) not reported			

- Summarise key findings in text.

Results table 2: Changes to medication

Overall, at the start of the pilot, n=x (%) patient contacts involved a change to medication (start or stop or both). At the end of the pilot this had increased to n=x %.

	Baseline N=x patient contacts N=x prescribers	Interim N=x patient contacts N=x prescribers	Final n=x patient contacts n=x prescribers	Change from start to end of audit	Change from start to interim of audit
N (%) Recording no change to medication					
N (%) Medication started					
N (%) Medication stopped					

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N (%) Medication started and stopped N (%) Not reported N (%) increase / decrease/ optimise dose					
Other action					

Medication started

Medication type	Start	Interim	End
	(n=x patient contacts where medication started)	(n=x patient contacts where medication stopped)	(n=x patient contacts where medication started)

Medication stopped

Medication type	Start	Interim	End
	(n=x patient contacts where medication stopped)	(n=x patient contacts where medication stopped)	(n=x patient contacts where medication stopped)

- Summary and key findings

Activity linked to change in medication

	Start N=x	Interim N=x	End N=x	Change
N (%) HS21 issued by HF nurse N (%) Letter of recommendation N (%) Telephone contact or email contact with GP or community pharmacy N % of ETANs N (%) PGD used				

Stakeholder survey and stakeholder feedback session

- Descriptive summary of responses

Positives from the pilot

Theme	Sub theme	Quotes/ supportive extracts

Negatives from the pilot / suggestions for improvement for future pilots

Theme	Sub theme	Quotes/ supportive extracts

Improvements for the full implementation

Theme	Sub theme	Quotes/ supportive extracts

- Key points summarised

Patient stories /journeys

- Descriptive summarises collated
- Key points summarised

Patient questionnaire

- Descriptive summary of responses
- Key points summarised

Process maps

- Steps in bullet points summarised
- Steps visually displayed in Figures
- Key points summarised

Discussion point

- Bullet points summarised

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Appendix 3.1: Stakeholder feedback in relation to each objective: Themes and direct extracts

Objective 1		Objective 2		Objective 3	
Robust governance arrangements put in place to ensure safe and effective prescribing		Did the pilot project maximise the use of professional skills at the point of care and support the delivery of care pathways that can be delivered by a HF nurse		What were the benefits in relation to accessing medication and reducing pressure on GPs	
eTAN facilitated good governance	<ul style="list-style-type: none"> eTAN facilitated good governance. Minimised duplication eTAN- positive step to improve governance 	Reduced time delay for patients	<ul style="list-style-type: none"> HS21 stopped time delays with some patients. Faster access to medicines for patients Beneficial for patients who needed something within 72 hours, HS21 used for up titration. 	Streamlines patient journey.	<ul style="list-style-type: none"> HS21 excellent for patient getting medications right away. Beneficial for urgent medications. Streamlines patient journey. HS21 to improve access and clinician time to phone a recommendation. Beneficial for urgent medicines and streamline journey for patient. Reduced patient anxiety
Access to HS21s	<ul style="list-style-type: none"> NMP committee - access to HS21 on Trust NMP committee - need to update 	HS21 good for urgent scripts, patients who were unstable	<ul style="list-style-type: none"> Most clinics at end of week therefore good opportunity to use skills to issue HS21 for urgent scripts. eTAN has been an unintended opportunity 	Specialist prescribing vs generalist	<ul style="list-style-type: none"> Specialist prescribing vs generalist Provided a good opportunity to use skills via hospital hub especially on a Friday

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			<p>from project to increase use of professional skills</p> <ul style="list-style-type: none"> 72 hour interpreted differently by different clinicians. Some prescribers will use the HS21 to up titrate especially when it is close to the weekend. 		
Safe storage and transportation of HS21s	<ul style="list-style-type: none"> Issue with safe storage and transportation in one Trust as clinics are held remote to hospital. This has been the biggest hurdle and as limited ability to prescribe 	Reduced patient anxiety	<ul style="list-style-type: none"> Straight forward patients who were titrated remotely - some who were unstable and needed something quickly - useful for these patients and reduced patient anxiety Provided a good opportunity to use skills via hospital hub especially on a Friday and reduced patient anxiety 	Prescriber responsible for script	<ul style="list-style-type: none"> Prescriber is accepting clinical responsibility by signing script and therefore is accountable
Good governance in place	<ul style="list-style-type: none"> NMP joined later cohort was also content with robust governance There were clear governance 	Helpful for clinics not at dispensing hospital	<ul style="list-style-type: none"> Helpful when clinic isn't based at a dispensing hospital 	Expert signing the script therefore of benefit to GP	<ul style="list-style-type: none"> Expert HFN signing the HS21 beneficial to GP

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	<p>arrangements in place. Need to reduce risk by double checking and having >1 source of drug history due to possible omissions / changes</p> <ul style="list-style-type: none"> • Good governance processes and support in place. It meant more aware of checking and cross checking 				
Good support in place	Good support from Trust pharmacist.	Reduced need for patient to visit GP or pharmacist	<ul style="list-style-type: none"> • Therefore reduced burden on GP receptions - patient access to GPs diff during Covid • Avoid patient having to drop in hard copy to GP or pharmacy 	Good use of MDT	<ul style="list-style-type: none"> • Use of HS21 meant utilising MDT and not reliant only on GP • Good use of MDT vs all on GP • Prescriber had access to blood results to assist with directions and monitoring

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Objective 4		Objective 5		Objective 6	
From your experience of the pilot what are the existing barriers in policy and legislation to NMP in the community and outpatient setting?		Did prescribing processes address challenges with respect to		Did it provide a greater opportunity to access the right medicines at the right time from the right person?	
		<ul style="list-style-type: none"> ○ communication with primary care ○ timely updating of clinical records ○ interface with community pharmacy 			
Range of drugs that are provided influences the cost and decision on funding	<ul style="list-style-type: none"> • trust policy of funding: range of drugs that are provided influences the cost and decision on funding • barrier to interface prescribing will be adequate designated project 	Timely communication and receipt of communication key	<ul style="list-style-type: none"> • Communication and timely update - eTAN via EDT - GPs do not always action in a timely manner e.g. 4 weeks to initiate diuretic and agreeing responsibility for follow up and review • If patient's name not tagged to information then it can add a delay. Information sent via EDT in one practice only • eTAN - sent straight away which improves communication. Direct line to GPP would be very beneficial • ETAN extremely useful. Goes straight though which improves communication. Would still be keen to get direct line through to practice pharmacists. • Extreme difficulty in accessing GP by phone - stressful when need is urgent 	Positive response from nurse prescribers	<ul style="list-style-type: none"> • 4 nurse prescribers replied positively • Yes; achieved objective!

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			<ul style="list-style-type: none"> • Communication issues - e.g. - remote computer at community based clinic and prescriber could not access eTAN functionality 		
1992 circular may need revised	<ul style="list-style-type: none"> • Trust policies for NMP, medicines code, prescription security - due to remote clinics and problems with transportation. • 1992 circular may need revised due to increases in NMP e.g. 48 hours versus 72 hours • current ministerial consultation on 92 circular and comments fed back on behalf of NMOP 	Awareness of eTAN process key	<ul style="list-style-type: none"> • Some IT issues communicating with GP via ETAN. Patients name must be tagged to ensure expedited in GP. Direct lines to pharmacy practice are better. • Communication- some concerns from HF nurses that GPs do not action recommendations in a timely manner or update records based on HS21s issued • some GPs lack of awareness with ETAN • Clarification on who in the GP practice picks up the ETAN. Practice specific. • eTAN- concerns that not a consistent approach in GP practices to manage information • Community Pharmacy - prescriber adds mobile number to every script to enable contact for clinical queries if appropriate 	Some patients in some areas	<ul style="list-style-type: none"> • For some patients in some areas.

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		Awareness of NMOP key	<ul style="list-style-type: none"> Some feedback from practices that not aware of NMOP and HF project 		
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Appendix 3.2: Stakeholder feedback session: Positives of the pilot: Themes and direct extracts

Theme	Direct extracts and comments
Differences of opinion relating to monitoring responsibility identified	<ul style="list-style-type: none"> Pilot provided an opportunity to identify differences in opinion relating to monitoring responsibility
Phlebotomy hubs	<ul style="list-style-type: none"> Phlebotomy hubs are good, but limited in terms of geographical location
Huge benefits of eTAN	<ul style="list-style-type: none"> eTAN - huge benefit Added benefit of eTAN to be clear on recommendations and communicated effectively If service continued without eTAN this would be a step-back HF pilot provided an opportunity to pilot ETAN in WHSCT eTANS- positive step to improve governance
Pilot utilised MDT and skillset	<ul style="list-style-type: none"> Use of HS21 meant utilising MDT and not reliant only on GP Good opportunity to use skills via hospital hub especially on a Friday Helpful when clinic isn't based at a dispensing hospital Specialist prescribing vs generalist

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Patients benefit	<ul style="list-style-type: none"> • Avoid patient having to drop in hard copy to GP or pharmacy • Faster access to medicines for patients • HS21 excellent for patient getting meds right away. Beneficial for urgent medications. Streamlines patient journey • Straight forward patients who were titrated remotely - some who were unstable and needed something quickly- useful for these patients • Reduced patient anxiety
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Appendix 3.3: Stakeholder feedback session: Negatives/ challenges of the pilot: Themes and direct extracts:

Theme	Direct extracts and comments
Issues with safe transport and storage of HS21s, unused HS21s	<ul style="list-style-type: none"> • Issue with safe transport and storage of HS21s - solution to have availability to overcome security issues. One Trust not allowing storage off site overnight. This is an issue as clinics are held remote to hospital. This has been the biggest hurdle and as limited ability to prescribe • Lockbox not good practice for transport of HS21s. Impossible to know how many scripts will be needed for offsite clinics. Need to know how to deal with unused HS21 safely
Communication issues and links with GPs	<ul style="list-style-type: none"> • A solution is needed to help improve communication with GPs needed including the regular review of eTAN. Establishing robust links between HF prescribers and GPPs
Issues with interpretation of 72 hours	<ul style="list-style-type: none"> • The 72 hour criteria was interpreted differently by different clinicians • Clarification on 72 hours needed
Issues with Follow up's via GP	<ul style="list-style-type: none"> • The follow up bloods with GP is an issue as it can be difficult to organise • Need a consistent approach to monitoring responsibility - bloods, BPs and ECGs

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	<ul style="list-style-type: none"> • The follow up bloods with GP an issue - difficult to organise. While I agree we should follow up, it isn't feasible for each patient to travel for U+E's
Issues with NMP and updating register	<ul style="list-style-type: none"> • NMP issues such as updating register - linking in with Trust Governance pharmacists
Budget	<ul style="list-style-type: none"> • Need to define where the budget sits
Redeployed staff and reduced patient contacts due to COVID a challenge	<ul style="list-style-type: none"> • Covid did hamper opportunities to commence project when intended. In an ideal world would not have been implemented during Covid as nurses redeployed • Patient feedback - reduced number of contacts with HCP • The staff redeployments meant that roll out was difficult
Issues with flow of information via ETANS	<ul style="list-style-type: none"> • Consider the consequences of eTAN not getting picked up or delay in getting picked up. Who is responsible needs clarified
Issues with location of phlebotomy hubs	<ul style="list-style-type: none"> • Phlebotomy hubs are good, but limited in terms of geographical location

Appendix 3.4: Stakeholder feedback session: What will be required for roll out? Themes and direct extracts

Themes	Direct extracts and comments
Team ownership	<ul style="list-style-type: none"> • Ensuring team ownership is in place from the start and throughout will help roll out
Resolution of HS21s issues	<ul style="list-style-type: none"> • Issues re Transportation and storage of HS21s to be resolved
Finance and budget	<ul style="list-style-type: none"> • No financial risk to Trust • Any scope to increase ownership of service in future • Comment from Trust Pharmacy - concern regarding costs of medicines and have a dedicated budget to cover costs going forward • Budget
Robust clinical governance	<ul style="list-style-type: none"> • Ensuring robust clinical governance - as assessed by Trust CG team - risk vs benefit • NMP issues - updating register - linking in with Trust Governance pharmacists
Support and training	<ul style="list-style-type: none"> • How do we support more hesitant / apprehensive prescribers • Training for prescribers on writing HS21s is key • Updates on how to write hs21s. Familiarity in writing triplicates • More work on training on writing prescriptions • Identify more opportunities to provide support to prescribers new to HS21s
Clarification on 72 hours criteria	<ul style="list-style-type: none"> • Future clarification on definition of what is urgent • 72 hour interpreted differently by diff clinicians. Someone prescribers will use HS21 to up titrate especially close to weekend

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	<ul style="list-style-type: none"> • Clarification on 72 hours needed • Greater clarity on interpretation of criteria within urgent "72 hours" • Service approach - and remove 72 hour limit
Engagement and communication with internal stakeholders	<ul style="list-style-type: none"> • Engage consultant cardiologists at an early stage and be more fully involved - local vs regional • Increased emphasis of importance of project via HF networks regionally • Identify consultants involved in regional HF network - assumption made that communication to Trusts was cascaded • Internal communication within Trusts optimised to ensure all key stakeholder are informed • Local quarterly meetings of key stakeholders in each organisation to discuss and resolve and any issues • Involve consultants and other stakeholders regularly • Establishing robust links between HF prescribers and GPPs • Engagement of HFN at beginning of projects to ensure can be fully utilised • Solution to help improve communication with GPs needed • Establishing robust links between HF prescribers and GPPs
Policy	<ul style="list-style-type: none"> • Policy Needs to be clear and unambiguous • 92 circular - clarity on when responsibility passes from secondary to primary care - need clear pathways
Clarity on responsibilities	<ul style="list-style-type: none"> • Clarification on GP responsibilities and NMP responsibilities in policies • Consistent approach to monitoring responsibility - bloods, BPs and ECGs

Clear guidance on use of eTANs

- Added benefit of eTAN to be clear on recommendations and communicated effectively
- Communication to GPs - ensuring robust process in place to review eTANS and action
- Consider the consequences of eTAN not getting picked up or delay in getting picked up. Who is responsible needs clarified
- If service continued without eTAN this would be a step-back

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Appendix 4.1: Stakeholder survey: Do you feel this pilot benefits the patient?

Themes	Direct extracts and comments
Time saving / more convenient for the patient	<ul style="list-style-type: none"> • If patients are attending clinics in person, or if a specialist nurse is attending the patient face to face elsewhere, then the prescription being issued via community pharmacy takes the need to visit a GP out of the process. This will save time for the patient • "Excellent service, good pt. feedback Cuts out a lot of red tape" • More convenient for the patient, they can take the script straight to the local pharmacy
Quick access to medications	<ul style="list-style-type: none"> • Patients able to obtain medications promptly direct from pharmacy • Medications are commenced sooner or titrated sooner for patients • Quicker prescribing for urgent medications
Facilitates optimisation of medications	<ul style="list-style-type: none"> • The majority of our clinic patients are having their medications optimised; it is less often that we need to prescribe a medication on the day. • Medications are commenced sooner or titrated sooner for patients • Timely up titration of HF medications which reduce morbidity and mortality" • Excellent scheme which allowed quick initiation and up titration of medication by HFNS

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<p>Access to urgent medications</p>	<ul style="list-style-type: none"> • The scripts are for urgent medications required • If used for urgent script required within 72 hours • In some cases, for example beta blockers or digoxin for fast heart rate, having access to an HS21 for immediate prescription of medications would be beneficial for the patient.
<p>ETANs a key part</p>	<ul style="list-style-type: none"> • For the most part, electronic treatment advice notes are sufficient for the patient, however further improvements are noted in Appendix 3.2. These being sent directly to the GP removes the need for the patient to go to GP practice and pharmacy. They can collect the medication from the pharmacy directly, usually within a few days."
<p>Enabled holistic patient care</p>	<ul style="list-style-type: none"> • Enabled the Specialist Nurse to provide holistic care, ensuring that the patient received the right treatment at the right time by the right person. • Excellent thorough care and follow up of HF patients
<p>Better patient experience with the HF service</p>	<ul style="list-style-type: none"> • The HF population are predominantly elderly with many pre-existing comorbidities. They are classed as vulnerable and the ability to assess a person at my clinic and simplify the pathway for them to access vital medications in a timely manner has enhanced the user's experience of the HF Service.
<p>Safer prescribing for the patient</p>	<ul style="list-style-type: none"> • Safer prescribing- medications being prescribed/de-prescribed by the specialist assessing the patient on the day
<p>Facilitates early patient intervention</p>	<ul style="list-style-type: none"> • Really good feedback and good early patient intervention

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Appendix 4.2 - Stakeholder survey: Did respondents feel comfortable using the electronic treatment advice note (eTAN)?

Theme	Direct quotations or extracts
Additional workload	<ul style="list-style-type: none"> • Having to write a separate document electronically, alongside a handwritten prescription, added to the nurses' workload
Streamlining of ETAN processing with primary care practices needed	<ul style="list-style-type: none"> • "Yes if the practices are printing off etans. Pt then doesn't need to attend she practice." • Not all GP practices check the system; many say they don't have either Docman/Apollo. • In some cases, the GP's are not seeing and actioning the etan's in a timely manner, however, this is likely just teething problems for a new system and the feedback from the GP stakeholders is that they are responsible for actioning them appropriately. • However , like all change process, there were a few teething problems - but as this is a pilot project , it identified to the team and project board the issues and problems that needed addressed before further roll out to other areas.
Communication with practice pharmacist useful	<ul style="list-style-type: none"> • The electronic system is handy once we have spoken to the practice pharmacist. • GP pharmacists play an integral role in this. For the most part, they are actioned quickly
ETAN make up-titrating medications more efficient	<ul style="list-style-type: none"> • Etan is more efficient when up-titrating medications. These are routine and therefore not required within 72 hours
ETANS have streamlined communication	<ul style="list-style-type: none"> • Prior to the project the patient had to take a letter of recommendation to the GP, or make a phone call. When implemented the electronic communication provided a much smoother streamlined service. • The eTAN template clarified and simplified the prescribing process and provided a central point of intra-surgery communication. • Essential

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	<ul style="list-style-type: none"> • Immediate quick transfer of information via eTAN • Timely and appropriate
ETANS facilitate communication with primary and secondary care	<ul style="list-style-type: none"> • Safe communication to both GP and also MDT as acute hospital staff also have access to this electronic communication
ETANS facilitates faster, clear and secure communication	<ul style="list-style-type: none"> • Increased speed of transmission of recommendations to Primary care • Less room for tampering/ fraud compared to the hard copy of clinical advice sheet • Clear and legible • The benefits of EDT are that documents are delivered securely to the patient's GP and the GP is alerted when a document has been processed.

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Appendix 4.3: Stakeholder survey: Are you happy for the pilot to continue?

Themes	Direct quotation or comment
Alongside ETAN	<ul style="list-style-type: none"> • I feel this should continue as an option alongside eTAN (electronic treatment advice note), which can be used if the patient needs medication dispensed from the hospital dispensary, or issued by the GP at next visit • Duplication as etan also sent. Only useful for meds required within 72 hours
Prescribing practice adds time to busy clinician schedule	<ul style="list-style-type: none"> • As documented earlier, it is just another step added into our already busy schedule.
Barriers to some sites implementing this prescribing practice exist	<ul style="list-style-type: none"> • "As a team we felt that there were quite a few barriers to this pilot being safe and efficient and it was agreed we would not continue with the pilot • The safe storage and transport of the HS21's was an issue as our clinics are done off site in Wellbeing Centres. We sought advice from community teams who use HS21's and then their protocol is that the HS21's are returned to base and locked securely, not taken home at any time. This was difficult as often we go straight to clinic from home in the morning or home from clinic in the afternoon." • In my experience all prescribing and the vast majority of follow up checks , blood pressure, blood tests have been dumped on GPs
Patient benefit justifies continuation	<ul style="list-style-type: none"> • The heart failure nurses have seen the benefit of this for their patients and this would be good to continue
Prescribing model enhances holistic patient care	<ul style="list-style-type: none"> • Kept the patient at the centre of care episodes
COVID impacts on prescribing	<ul style="list-style-type: none"> • Unfortunately as my outpatient clinics have been indefinitely suspended due to COVID I am not able to see as many patients and therefore use the HS21 as much as I would like or could have pre-COVID
Important that prescribing model continues	<ul style="list-style-type: none"> • I think it is imperative that they do

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	<ul style="list-style-type: none"> • Absolutely, beneficial to the patient and HFNS • It would be a terrible backward step if it stopped • 100% want to see this continue
<p>Utilises HFN skill set and job satisfaction</p>	<ul style="list-style-type: none"> • Increases autonomy of the HFNS and utilizes specialist skills in a safe manner • I feel being able to discuss medications, their effects/side-effects and treatment plans, with my patients and then being able to provide an HS21 for treatment to commence swiftly has enhanced my feeling of job satisfaction

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Appendix 4.4: Stakeholder survey: Did this add to your workload/time of consultation?

Themes	Direct quotation or comment
Duplication linked to ETAN	<ul style="list-style-type: none"> • Duplication of etan. • There is duplication of work as an eTAN must also be completed to alert GP's to an HS21 having been used. • Completing etans for patients who had a HS21 script did add to my work, but I do think the etans is necessary for safe hs21 prescribing and communication and worth the time due to the numerous benefits of HS21 prescribing. I am now quicker at completing the etans, due to practice
Travel associated with prescription pad added to workload	<ul style="list-style-type: none"> • Travelling back and forth to base with prescription pad
Additional time required for patient consultation	<ul style="list-style-type: none"> • Some additional time to explain the pilot, provide information and questionnaire
Additional time required for meeting to implement the project	<ul style="list-style-type: none"> • Yes added some extra workload by organising meetings and having some contact with key people in preparation for the meetings and to understand the project.
No additional time / reduces workload	<ul style="list-style-type: none"> • I discuss medications as above with my patients, so writing an HS21 and completing the eTAN in a contemporaneous manner, does not inconvenience me. • No absolutely not. It reduces my workload • Not the actual HS21 script writing, as it removed the need to ring the GP practice and pharmacist in order to arrange an urgent script if required.

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	<ul style="list-style-type: none"> • Did not add to workload or time; in fact reduced these
Increased workload for GP	<ul style="list-style-type: none"> • All prescribing and majority of follow up checks deferred to Gp without Gp consent

Appendix 4.5: Stakeholder survey: Positives of the pilot project?

Theme	What do you think were the positives of this project
Reduce burden on GPs	<ul style="list-style-type: none"> • Utilising non-medical prescribing in another setting. This takes work away from GP practices • helped relieve pressure on GP colleagues to prescribe • Reduces GP workload • GPs did not have to wait on letter to prescribe
Time saving for patient	<ul style="list-style-type: none"> • can save time for the patient in certain circumstances • Enabled the patient to receive a script immediately to take to their community pharmacy and • Quick access for patients to urgent medications • Ensuring timely access to medicines and treatment, improved access to treatment, and • Patient swift and timely access to evidence based HF disease modifying therapies

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	<ul style="list-style-type: none"> • quicker from prescription to dispensing • Reduces delay for patients accessing new medications • Streamlined process for patients, didn't have to try and drop off letter particularly with current restrictions on access to GP Practice
Facilitates urgent patient medication	<ul style="list-style-type: none"> • If patient needed urgent medication then beneficial • Useful for urgent 72 hours scripts such as Metolazone or Sando K • Timely prescribing of urgent medications,
Increase patient satisfaction	<ul style="list-style-type: none"> • increasing flexibility for patients • Increased patient satisfaction with HF Service • Simplifies process for patients
Skills and knowledge utilisation	<ul style="list-style-type: none"> • Ensuring that NMP's can utilise their skills and knowledge to benefit the patients in a more timely manner. • Great autonomy for the nurse specialists • increased my autonomy and utilized my HF assessment and prescribing skills • Independence and autonomy of Nurse Prescribers
Improved MDT communication and working	<ul style="list-style-type: none"> • Better communication with the nurse specialists and GP's • On a few occasions I lifted the phone to the Heart failure nurse about patients under their care and they were great and getting back to me with advice

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	<ul style="list-style-type: none"> • Provided a further point of contact and probably has improved medical management of our heart failure patients • Timely communication and more rapid initiation/ up titration of life saving cardiac meds
Raised profile of HFNS	<ul style="list-style-type: none"> • Raised the profile of the HFSN in the health care setting as being an expert in managing HF disease modifying therapy • Enhanced role for HFNS in managing our patients.
Reduce chance of prescription error	<ul style="list-style-type: none"> • Reduced the 'links' in the traditional prescribing chain from secondary to primary care - therefore reducing chances of errors • Safer prescribing • Sending documents electronically and securely to the patient's GP
Increase transparency with prescriptions	<ul style="list-style-type: none"> • Audit - the paper trail is clear and easily audited for use in service improvements.
Patient access to specialist treatment and advice	<ul style="list-style-type: none"> • Pt gets the treatment from the expert • Improves patient care • The person gets to see the best person who understands their condition best and get the appropriate treatment quickly • This is a great service for patients and HCPs involved in their care. Improves patient care • beneficial for the patient

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Increase job satisfaction	<ul style="list-style-type: none"> Increased job satisfaction for the HFSN.
Facilitated optimisation of medication	<ul style="list-style-type: none"> More rapid up-titration of HF medications Quick resolution of medication queries/changes - Allowed the patient's medications to be optimised quickly

Appendix 4.6: Stakeholder survey: Challenges/Negatives of the pilot project?

Themes	What do you feel were the challenges/negatives of the pilot
Need for electronic document	<ul style="list-style-type: none"> Handwritten prescriptions are not ideal for a variety of reasons including handwriting errors, and the need for a separate document to be written electronically to update patient records on NIECR
Prescriber confidence	<ul style="list-style-type: none"> Was nervous writing the prescription as never used the pad before Confidence of prescribers Confidence initially but with support and guidance the Nurse Practitioners were able to fully engage
Issues with transportation, storage and insurance of prescription pads	<ul style="list-style-type: none"> Transporting prescription pad from base to satellite clinics As a team we felt the main challenge was storage and transportation. We work out of both the MIH & RVH; our face to face clinics are in Shankill Wellbeing. Insurance was also an issue. Main issues were around the transportation of prescriptions between sites and storage of these out of hours. Safe storage and transport of HS21's

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	<ul style="list-style-type: none"> • Security - keeping script pads safe and secure at all times. Hot desking and shared office/ clinical spaces has become more of the norm now
Duplication of work	<ul style="list-style-type: none"> • Duplication of work
Redeployment of staff due to COVID	<ul style="list-style-type: none"> • The covid pandemic had big implications on the project. • Challenges encountered included redeployment of staff and reduced face to face consultations.
Issues with patient uptake	<ul style="list-style-type: none"> • Some worry regarding patients not actually taking the HS21's to their chemist
Complexities associated with communicating and agreeing roles with primary care	<ul style="list-style-type: none"> • A number of issues also emerged in relation to EDT and communicating changes to medicines. • The HFNS pilot was more complex than the other pilots as it included recurrent prescribing, planned up-titration with associated monitoring, followed by handover to the GP practice for ongoing prescribing and monitoring once the patient's medication is stabilized. Challenges ensued with taking of blood samples etc. - however I would say the benefits outweighed the challenges!! • It might be hard for the nurses to get in touch with us (GPs) at times
Clarification on funding	<ul style="list-style-type: none"> • Clarification on who was going to be paying for the medication
Resistance to change	<ul style="list-style-type: none"> • Resistance of colleagues to change the way they work.
Lack of awareness of ETANs in GP practices	<ul style="list-style-type: none"> • Electronic prescribing • Not all GP practices were aware of the eTAN communication pathway.

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	<ul style="list-style-type: none"> • Challenges when I used etans for virtual prescribing initially. Some GP practices did not know what an etans was, and did not action them. This has now been embedded in the general day to day practice of prescribing and all the initial issues have been resolved • Confidence that GPs would pick up electronic communication
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Appendix 4.7: Stakeholder survey: What improvements/considerations should be made for full implementation?

Themes	What improvements/considerations should be made for full implementation?
<p>Clear guidance on prescribing criteria / Training</p>	<ul style="list-style-type: none"> • Clearer brief, less open to interpretation. Our brief was to use HS21 for urgent prescribing if medication required within 72 hrs. Perhaps the brief should have been more clear and stipulated it was for use to facilitate prescribing in general in the HF clinic and NOT just urgent prescribing • Training of all staff • Secure more funding for NMP training for nurse specialists • Rolling up-dates and education for the nurses etc. who undertake the role of prescribing. • Perhaps a longer prescribing practice session face to face. Where professionals can practice writing scripts and gain confidence in same • Support for prescribing processes

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Streamline communication methods with GP	<ul style="list-style-type: none"> • Clarity of communication methods with GP practices when handwritten prescriptions are issues • Good prep of the region - all GP practices made aware of the eTAN communication pathway
Clear guidance on storage and transport of prescription pads	<ul style="list-style-type: none"> • Clear information as to storage and transport/insurance • Transportation/ storage of pads needs revisited/ made uniform throughout trusts
Electronic solution	<ul style="list-style-type: none"> • Electronic generation of prescriptions or an IT solution that would enable prescribing information / a prescription to be sent directly to a community pharmacy • Electronic prescriptions • Electronic prescribing
Project management	<ul style="list-style-type: none"> • Trust ownership supported by a dedicated team, similar to that provided by Andrea and James.
Removal of policy barriers	<ul style="list-style-type: none"> • Removal of some existing barriers in policy and legislation to NMP in the community and outpatient setting
Team working	<ul style="list-style-type: none"> • Commitment and co-operation from all members of the MDT
Clarity on funding	<ul style="list-style-type: none"> • Provide clarification at the outset of the project as to where the funding comes from. • For this to be properly funded • Clarification of funding
Communication with all stakeholders	<ul style="list-style-type: none"> • Community Pharmacies made aware of the changing role of the HFNS to issue scripts • Buy in from other HFNS team members

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Roll out to other areas	<ul style="list-style-type: none"> • Encourage the roll out to other identified areas that will make a difference • Printing of scripts throughout health care settings like that available in primary care now • Not sure if this is across specialities or heart failure specifically
Awareness of other methods of prescribing	<ul style="list-style-type: none"> • Medications prescribed for other reasons as well as urgent within 72hrs • Our team does utilise their prescribing qualification by prescribing in hospital
Agree responsibilities	<ul style="list-style-type: none"> • Heart failure clinics should take responsibility for follow up checks and reviews following medication changes that they have recommended
Audit evaluation process	<ul style="list-style-type: none"> • Audit process required at each stage to monitor level of prescribing.

Appendix 4.8: Stakeholder survey: Additional comments

Themes	Do you have any final/additional comments
Pilot a positive experience	<ul style="list-style-type: none"> • Happy to continue either way Trust depending • Within nurse-led heart failure services, prescribing capabilities give nurses the independence to provide more streamlined care that is patient-focused, Ensuring timely access to medicines and treatment, improved access to treatment, and increasing flexibility for patients • Thank you, very worthwhile doing this and look forward to rolling this out to other areas • No I'd be very disappointed if this stopped.

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	<ul style="list-style-type: none"> • Generally very helpful to enable rapid escalation of treatment
Pilot management and implementation a positive experience	<ul style="list-style-type: none"> • Great support from NMOP team - thank you • range of MDT members impressive from pharmacy to managers to clinical governance and clinical HF staff • Thank you for your support and guidance and in particular to Gillian McCorkell for her guidance. • I felt supported by the pilot leads and the zoom meetings regularly were useful. • Virtual meetings were useful and time efficient and always kept to time
Some transition required	<ul style="list-style-type: none"> • Prior to E-Tan system, we used the treatment advice slip and gave to patients, it worked very well as it was handed into GP surgery by patient. We generally didn't need to contact the GP surgery. Since E-Tan has begun as mentioned phonecalls are still required, in the instances it works it works well. • Less writing on the coming to primary care may be helpful
A learning and development experience	<ul style="list-style-type: none"> • I found writing scripts daunting at first. I was afraid of making a mistake in how I filled in the scripts and clarity of the instructions. However, the continued positive feedback I got from patients whom I issued HS21s to at clinic was very encouraging and rewarding • I think with the proper training and supervision, the specialist nurses across the region can improve patient experience and level of care thus preventing episodes of deterioration requiring hospital admission

Appendix 5: Process Map Templates

Template for Baseline Information for NMP Heart Failure Nurse Specialist Project Pilot – September 2020 v0_1

Locality			
Trust	BHSCT		
Completed by		Date	05/05/2021

Current Prescribing Pathway

(Briefly outline the current pathway for accessing medications within this locality area)

Start point – decision to amend medications.

End point – patient receives medications/de-prescription processed and meds removed.

Provide approximate timescales for each part of the pathway

- Heart failure nurse assessment, either face to face or virtual
- Multiple factors considered. Clinical presentation and examination, blood results, drug history
- Decision to amend medication (either commence new medication, up/down titrate current medication, switch to alternative agent or discontinue)
- Electronic treatment advice note completed which transfers to the GP's system almost immediately, though there have been variable timescales for action at the GP's end.
- GP prescribes medication and sends to community pharmacy
- Patient collects from Pharmacy

Service Information

Average Length of stay on caseload	Variable. 'Straightforward' optimisations of heart failure medications can be completed within 3-6 months. Other patients remain on caseload for many years for symptom control.
Average number of contacts per episode of care	Again variable. We would aim to review with phone call/clinic review and bloods 2 weeks post medication change
Number of acute admissions per caseload	Data not available

How often would you use alternative methods of prescription and de-prescribing and supply of medications?

Alternative method	Times per week
Letter of recommendation	Clinic letters sent for every clinic review +/- eTAN
PGD	None
Advice	Variable. eTANS may be sent 15 times or more per heart failure nurse per week
Other: (describe)	Occasional direct phone call to GP practice for urgent medication changes, together with an eTAN (no longer sending emails)

Is there capacity to prescribe any items in your role as HF Specialist Nurse at present? (Please describe process for prescribing and frequency of prescribing via this method).

Yes. There would be times when direct prescribing would be useful. For example for potassium supplements, rate control medications or diuretics.

Describe any specific issues related to prescribing in your area of practice?

Recent issues with GP practices actioning eTANS, though this is being addressed at management level

Follow up bloods are difficult to arrange locally for patients in some cases with a few GP practices refusing to facilitate. GP's unwilling to take joint care approach in some cases with all follow up to be left with HFN. We use Phlebotomy hub and MPH as much as possible but it's not suitable for all patients.

Additional Comments – Please add any additional information which you feel it would be appropriate to capture in relation to medications in your area of work.

Template for Baseline Information for NMP Heart Failure Nurse Specialist Project Pilot – September 2020 v0 1

Locality			
Trust	NHSCT		
Completed by	HFNs @ Northern Trust	Date	06/10/20

Current Prescribing Pathway

(Briefly outline the current pathway for accessing medications within this locality area)

Start point – decision to amend medications.

End point – patient receives medications/de-prescription processed and meds removed.

Provide approximate timescales for each part of the pathway

- HFN assesses patient – direct physical examination at F to F clinic / indirect examination via virtual telephone clinic. Access blood results on ECR / current medication via ECR and patient
- Decision made to amend medication
- Hand written OP advice note given to patient with medication changes (*immediate*) – followed up by clinic letter to GP (*usually up to 1 week*)
- GP / GP pharmacist receives OP advice note from patient (*varies according to patient – from a few hours to days*)
- Prescription issued to community pharmacist who dispenses medication (*within 48hrs*)
- Patient collects medication / pharmacist delivers medication (*varies according to patient/pharmacy*)
- Blister packs – can take longer if already prepared as they will need adjusted

Service Information

Average Length of stay on caseload	Difficult to quantify as there are marked variations between individual patients – from non-complex patients to those with ongoing complex needs and co-morbidities who require close monitoring of their symptoms and frequent medication changes (at least 6 months to years)
Average number of contacts per episode of care	Varies according to individual patients. Non- complex titrations can take at least 6 contacts on a monthly basis
Number of acute admissions per caseload	Not captured by HFNs

How often would you use alternative methods of prescription and de-prescribing and supply of medications?

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Alternative method	Times per week
Letter of recommendation	Varies but up to 20 (per HFN fte)
PGD	None
Advice	Approx. 10 – 15
Other: (describe)	email Electronic HF clinic letter

Is there capacity to prescribe any items in your role as HF Specialist Nurse at present? (Please describe process for prescribing and frequency of prescribing via this method).

Yes – for quicker prescribing & dispensing

Eg. Diuretic increased at short notice / Reducing dose of HF medication

Describe any specific issues related to prescribing in your area of practice?

Up to date list of medication / accuracy of ECR / recording changes with GP practices

Additional Comments – Please add any additional information which you feel it would be appropriate to capture in relation to medications in your area of work.

Many Thanks for taking the time to complete this short questionnaire.

Template for Baseline Information for NMP Heart Failure Nurse Specialist Project Pilot – September 2020 v0 1

Locality	Altnagelvin Hospital		
Trust	Western Health Trust		
Completed by		Date	02/10/2020

Current Prescribing Pathway

(Briefly outline the current pathway for accessing medications within this locality area)

Start point – decision to amend medications.

End point – patient receives medications/de-prescription processed and meds removed.

Provide approximate timescales for each part of the pathway

Following discussion with the patient at review re possible treatment change and counselling them on the medication etc:

- 1) Complete clinic letter and upload to ECR via EDT usually same day.
- 2) E-mail GP practice re patient has attended HFC and there is a treatment change recommendation to be actioned – usually same/next day.
- 3) Phone patient re recommended treatment change – usually same/next day. Advise patient there may be several days wait for the script to be processed at GP surgery and supplied to their named Pharmacy. If a Friday or coming into a bank holiday weekend there may 5+ days before communication from HFC reviewed by GP and script issued.
- 4) Overall can range from 2 to 5+ days for medicine to be dispensed to patient from Pharmacy.

Additional, though infrequent issues: May have to liaise with named Pharmacy re supply of medications from manufacturer – Entresto. This can mean arranging with Pharmacy to contact other shops re the medication and then ringing patient back re availability and dispensing of the drug.

Service Information

Average Length of stay on caseload	1 year.
Average number of contacts per episode of care	Appointment/phone patient re Rx changes; may have to phone GP surgery re script especially if for diuretic commencement/increase; e-mail to surgery; phone patient again re script issue = 4.
Number of acute admissions per caseload	0-1 per month. Fluctuates with flu season/ C-19.

How often would you use alternative methods of prescription and de-prescribing and supply of medications?

Alternative method	Times per week
Letter of recommendation	8+ weekly per nurse = 24+.
PGD	Independent Prescribers.
Advice	Patients – 24+.
Other: (describe)	Practice Pharmacist – may ring to clarify medication, dose, review plans. May have to contact patient's consultant re drug/ treatment plans and liaise with Pr Pharm – time-consuming as have to contact cons, wait for reply, contact Pr Pharm and possibly other specialities if there are procedures planned across specialities.

Is there capacity to prescribe any items in your role as HF Specialist Nurse at present? (Please describe process for prescribing and frequency of prescribing via this method).

We act as NMPs – but follow the recommended national and international guidelines for use of gold standard HF therapies. We decide what medication to commence, titrate or stop.

See response to prescription pathway above.

Describe any specific issues related to prescribing in your area of practice?

Time delays – getting medication titrations actioned, can potentially delay planned review appointments and therefore delay patient receiving gold standard HF therapies and the prognostic benefit they confer. As these delays accumulate per patient it may take longer than planned to titrate to target doses.

There is evidence to suggest that rapid titration can be of great prognostic and symptomatic benefit to HF patients thus reducing readmission rates.

Additional Comments – Please add any additional information which you feel it would be appropriate to capture in relation to medications in your area of work.

Being allowed to adjust and prescribe medications on hospital drug kardex for known HF patients.

Being able to liaise with Pharmacies regarding medications.

Pre and Post Process Map for NMOP Heart Failure Prescribing

Pre Pilot – Steps Involved

1. Patient assessed (Clinic or Virtual)
2. Decide if medicines or changes to medication are required including commencing new medication, up/down titrate current medication, switch to alternative agent or discontinue.
3. Hand written OP advice note given to patient with medication changes
4. Clinic letter to GP and upload to ECR via EDT
5. GP / GP pharmacist receives OP advice note from patient (varies according to patient – from a few hours to days)
6. GP reviews OP advice note / calls HF nurses if needed
7. GP write writes prescription
8. Prescription issued to community pharmacist who dispenses medication (within 48hrs)
9. Patient collects medication / pharmacist delivers medication (varies according to patient/pharmacy). Blister packs – can take longer if already prepared as they will need adjusted

Total timescale - 4-7 days

Issues with current process

- Delays in patient care - getting medication titrations actioned, can potentially delay planned review appointments. It may take longer than planned to titrate to target doses.
- Follow up bloods are difficult to arrange locally for patients in some cases
- Adds to GP time when the heart failure nurse has the qualifications/skills to write the HS21
- Time taken to write letters of recommendation and telephoning GPs for prescription
- NIECR is not a live system – need a system to enable access to up to date list of medications
- Recording changes with GP practices

During/After Pilot – Steps Involved

1. Patient assessed (community or clinic)
2. Decide if medicines or changes to medication are required including commencing new medication, up/down titrate current medication, switch to alternative agent or discontinue
3. Nurse writes HS21
4. Nurse completes eTAN
5. Prescription taken to community pharmacy
6. Community pharmacy dispense medication
7. Medication is delivered or collected by patient

Total timescale = 1-4 days

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Issues with new process

- Time to handwrite prescription
- Some issues with GP practices actioning eTANs, however though this is being addressed through regional correspondence
- Record keeping for evaluation purposes (need for this will be removed when service becomes business as usual)
- NIECR is not a live system – need a system to enable access to up to date allergy information and alerts.

Benefits of new process

- Reduced workload for GPs
- Reduces delays in obtaining medication
- Heart Failure Nurses can use their specialist knowledge for medications
- Reduction in heart failure nurse time for follow up which increases capacity for clinical work

Appendix 6: Patient Journeys

Finding at initial assessment of patient	NMOP intervention
<ul style="list-style-type: none"> • Patient referred to HF service due to fluid overload, detected at a pre op assessment for knee replacements • ECHO- moderate LVSD He was short of breath walking 50-100 yards, sleeping in his bed elevated on bricks due to nightly PND. • Gross pitting oedema from pedal to tops of thighs/ sacral area. • He had a recent U+E 1 week previously and result was improving, Creat. 131, EGFR 45. BP 120/80 at clinic. Current heart failure medications were Bisoprolol 5 mg od and Bumetanide 1 mg 	<ul style="list-style-type: none"> • Bumetanide was increased to 2mg od, and Ramipril 1.25mg started at night, U+E arranged at the Trust phlebotomy clinic for 1-2 weeks after • HS21 script was issued for both of these medications, his son was able to take to the local pharmacy for his dad • eTAN sent to GP practice on the same day • A follow up, one week later found the patients SOB had improved. He could now walk into his son's house next door with only slight SOB. Follow up appointment arranged at the HF clinic to assess changing ACE-I over to ARNI

Finding at initial assessment of patient	NMOP intervention
<ul style="list-style-type: none"> • Patient referred to the heart failure service for the first time in July 2021 following an admission with decompensated heart failure. • Diagnosed with severe LV dysfunction • On review at clinic the patient was short of breath on minimal exertion, walking up to 0.5 miles on the flat, but SOB on an incline. • Two follow up phone calls showed that the patient was feeling improved and SOB had reduced. • At Planned HF Clinic review patient continues to feels much improved, but slightly more SOB as last week, Slight postural dizziness- no falls and U+E Improved 	<ul style="list-style-type: none"> • HS21 script issued for a 28 day supply of sacubitril/valsartan and titrated furosemide • eTAN completed on the same day and U+E for 1 week • Advised patient to cautiously reduce the Furosemide • At the planned follow up clinic, HS21 script written for 28 day supply of Spironolactone • eTAN completed on the same day- and U+E requested for 1 week and 4 weeks post medication change on the eTAN • Positive patient feedback regarding being able to access medicines quickly and start straight away. • Review again at HF clinic face to face in 4 weeks for further assessment regarding HF medication optimisation

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Appendix 7: Items prescribed

PrescriberCipher	PresYear	PresMonth	DrugName	Quantity	Items	Cost
A	2021	1	Eplerenone 50mg tablets	28	1	£10.00
A	2021	1	Entresto 49mg/51mg tablets	56	1	£91.56
A	2021	1	Entresto 97mg/103mg tablets	56	1	£91.56
A	2021	2	Bisoprolol 2.5mg tablets	28	1	£0.96
A	2021	2	Bisoprolol 3.75mg tablets	28	1	£1.26
A	2021	2	Bisoprolol 5mg tablets	28	1	£0.95
A	2021	2	Bisoprolol 7.5mg tablets	28	1	£1.30
A	2021	2	Bumetanide 1mg tablets	28	1	£1.85
A	2021	2	Eplerenone 25mg tablets	3	1	£1.02
A	2021	2	Furosemide 40mg tablets	7	1	£0.23
A	2021	2	Ramipril 1.25mg tablets	28	1	£1.61
A	2021	2	Ramipril 2.5mg tablets	28	1	£1.52
A	2021	2	Entresto 49mg/51mg tablets	168	3	£274.68
A	2021	3	Bisoprolol 2.5mg tablets	28	1	£0.96
A	2021	3	Furosemide 40mg tablets	28	1	£0.93
A	2021	3	Ivabradine 2.5mg tablets	56	1	£93.56
A	2021	3	Entresto 49mg/51mg tablets	56	1	£91.56
A	2021	3	Entresto 97mg/103mg tablets	56	1	£91.56
A	2021	4	Bisoprolol 3.75mg tablets	28	1	£1.23
A	2021	4	Eplerenone 25mg tablets	28	1	£12.00
A	2021	4	Perindopril erbumine 2mg tablets	28	1	£2.03
A	2021	4	Entresto 49mg/51mg tablets	56	1	£91.56
A	2021	5	Furosemide 40mg tablets	28	1	£0.94

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A	2021	5	Ramipril 1.25mg capsules	28	1	£1.17
A	2021	5	Sacubitril 49mg / Valsartan 51mg tablets	56	1	£91.56
A	2021	5	Spironolactone 25mg tablets	40	2	£2.43
A	2021	5	Entresto 24mg/26mg tablets	112	2	£183.12
A	2021	5	Entresto 49mg/51mg tablets	56	1	£91.56
A	2021	6	Eplerenone 25mg tablets	28	1	£14.00
A	2021	6	Furosemide 40mg tablets	28	1	£0.94
A	2021	6	Ivabradine 5mg tablets	28	1	£14.44
A	2021	6	Ramipril 1.25mg tablets	28	1	£1.67
A	2021	6	Ramipril 2.5mg tablets	28	1	£1.39
A	2021	6	Sacubitril 49mg / Valsartan 51mg tablets	56	1	£91.56
A	2021	6	Sacubitril 97mg / Valsartan 103mg tablets	56	1	£91.56
A	2021	7	Bisoprolol 1.25mg tablets	28	1	£0.96
A	2021	7	Bisoprolol 3.75mg tablets	28	1	£1.13
A	2021	7	Sacubitril 24mg / Valsartan 26mg tablets	28	1	£45.78
A	2021	7	Spironolactone 25mg tablets	56	2	£2.96
A	2021	7	Entresto 24mg/26mg tablets	112	2	£183.12
A	2021	7	Entresto 49mg/51mg tablets	112	2	£183.12
A	2021	7	Entresto 97mg/103mg tablets	112	2	£183.12
A	2021	8	Bisoprolol 2.5mg tablets	28	1	£0.91
A	2021	8	Bisoprolol 5mg tablets	28	1	£0.89
A	2021	8	Digoxin 62.5microgram tablets	28	1	£1.50
A	2021	8	Furosemide 40mg tablets	56	2	£1.68
A	2021	8	Nebivolol 2.5mg tablets	14	1	£1.97
A	2021	8	Ramipril 1.25mg tablets	28	1	£1.51
A	2021	8	Ramipril 5mg tablets	28	1	£1.11
A	2021	8	Sacubitril 24mg / Valsartan 26mg tablets	28	1	£45.78
A	2021	8	Spironolactone 12.5mg tablets	84	1	£43.89

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A	2021	8	Entresto 24mg/26mg tablets	56	1	£91.56
A	2021	8	Entresto 97mg/103mg tablets	56	1	£91.56
A	2021	9	Bisoprolol 1.25mg tablets	28	1	£0.96
A	2021	9	Bumetanide 1mg tablets	56	1	£2.60
A	2021	9	Furosemide 40mg tablets	28	1	£0.84
A	2021	9	Ramipril 1.25mg capsules	28	1	£1.23
A	2021	9	Ramipril 1.25mg tablets	28	1	£1.51
A	2021	9	Entresto 24mg/26mg tablets	56	1	£91.56
A	2021	9	Entresto 97mg/103mg tablets	56	1	£91.56
A	2021	10	Bisoprolol 3.75mg tablets	28	1	£1.07
A	2021	10	Bumetanide 1mg tablets	84	2	£3.57
A	2021	10	Ramipril 1.25mg tablets	28	1	£1.40
A	2021	10	Sacubitril 24mg / Valsartan 26mg tablets	84	2	£137.34
A	2021	10	Spironolactone 25mg tablets	40	2	£1.90
A	2021	10	Entresto 24mg/26mg tablets	56	1	£91.56
A	2021	10	Forxiga 10mg tablets	140	5	£182.95
B	2021	4	Furosemide 40mg tablets	28	1	£0.94
B	2021	5	Nebivolol 5mg tablets	28	1	£1.99
C	2021	4	Furosemide 20mg tablets	28	1	£0.92
D	2021	4	Dapagliflozin 10mg tablets	28	1	£36.59
D	2021	4	Eplerenone 25mg tablets	28	1	£12.00
D	2021	4	Furosemide 40mg tablets	28	1	£0.94
D	2021	5	Bisoprolol 1.25mg tablets	28	1	£1.06
D	2021	5	Bisoprolol 10mg tablets	28	1	£1.07
D	2021	5	Bisoprolol 5mg tablets	28	1	£0.98
D	2021	5	Dapagliflozin 10mg tablets	28	1	£36.59
D	2021	5	Digoxin 125microgram tablets	28	1	£1.70
D	2021	5	Sacubitril 24mg / Valsartan 26mg tablets	28	1	£45.78

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D	2021	5	Sacubitril 97mg / Valsartan 103mg tablets	28	1	£45.78
D	2021	5	Entresto 49mg/51mg tablets	28	1	£45.78
D	2021	6	Bisoprolol 10mg tablets	28	1	£1.07
D	2021	6	Bisoprolol 2.5mg tablets	56	2	£2.00
D	2021	6	Bumetanide 1mg tablets	28	1	£1.63
D	2021	6	Ramipril 1.25mg tablets	28	1	£1.67
D	2021	6	Ramipril 2.5mg capsules	28	1	£1.12
D	2021	7	Bisoprolol 10mg tablets	28	1	£0.98
D	2021	7	Digoxin 125microgram tablets	28	1	£1.51
D	2021	7	Furosemide 20mg tablets	28	1	£0.80
D	2021	8	Digoxin 62.5microgram tablets	28	1	£1.50
D	2021	8	Forxiga 10mg tablets	28	1	£36.59
D	2021	9	Bisoprolol 1.25mg tablets	28	1	£0.96
D	2021	9	Bisoprolol 7.5mg tablets	14	1	£0.59
D	2021	9	Bumetanide 1mg tablets	28	1	£1.30
D	2021	9	Furosemide 40mg tablets	21	1	£0.63
D	2021	9	Ramipril 1.25mg tablets	28	1	£1.51
D	2021	9	Entresto 49mg/51mg tablets	28	1	£45.78
D	2021	9	Forxiga 5mg tablets	28	1	£36.59
D	2021	10	Furosemide 40mg tablets	28	1	£0.81
D	2021	10	Entresto 24mg/26mg tablets	56	1	£91.56
D	2021	10	Entresto 49mg/51mg tablets	56	1	£91.56
E	2021	4	Eplerenone 25mg tablets	7	1	£3.00
E	2021	4	Forxiga 10mg tablets	28	1	£36.59
E	2021	5	Bisoprolol 10mg tablets	28	1	£1.07
E	2021	7	Bisoprolol 10mg tablets	28	1	£0.98
E	2021	7	Bisoprolol 2.5mg tablets	56	2	£1.82
E	2021	7	Ramipril 2.5mg tablets	28	1	£1.18

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E	2021	7	Crestor 5mg tablets	28	1	£18.03
E	2021	7	Entresto 49mg/51mg tablets	56	1	£91.56
E	2021	8	Bisoprolol 5mg tablets	14	1	£0.45
E	2021	9	Bisoprolol 2.5mg tablets	56	2	£1.82
E	2021	9	Bisoprolol 5mg tablets	28	2	£0.89
E	2021	9	Dapagliflozin 10mg tablets	28	1	£36.59
E	2021	9	Ramipril 2.5mg capsules	14	1	£0.57
E	2021	9	Ramipril 5mg capsules	14	1	£0.59
E	2021	9	Spironolactone 25mg tablets	14	1	£0.74
E	2021	9	Entresto 24mg/26mg tablets	168	3	£274.68
E	2021	9	Forxiga 10mg tablets	14	1	£18.30
E	2021	10	Amlodipine 5mg tablets	14	1	£0.44
E	2021	10	Bisoprolol 1.25mg tablets	14	1	£0.46
E	2021	10	Bisoprolol 5mg tablets	28	1	£0.85
E	2021	10	Perindopril erbumine 2mg tablets	14	1	£0.63
E	2021	10	Perindopril erbumine 4mg tablets	14	1	£0.74
E	2021	10	Spironolactone 25mg tablets	21	2	£1.00
E	2021	10	Entresto 24mg/26mg tablets	28	1	£45.78
E	2021	10	Entresto 49mg/51mg tablets	84	2	£137.34
Total				4,941	150	£4,171