



# **An Evaluation of New Models of Prescribing (NMOP):**

A Heart Failure  
Nurse Specialist  
Prescribing Pilot

September 2022

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### **Task and Finish Group Membership**

A task and finish group was set up to oversee the implementation of the pilot project. Membership is detailed in Appendix 1.

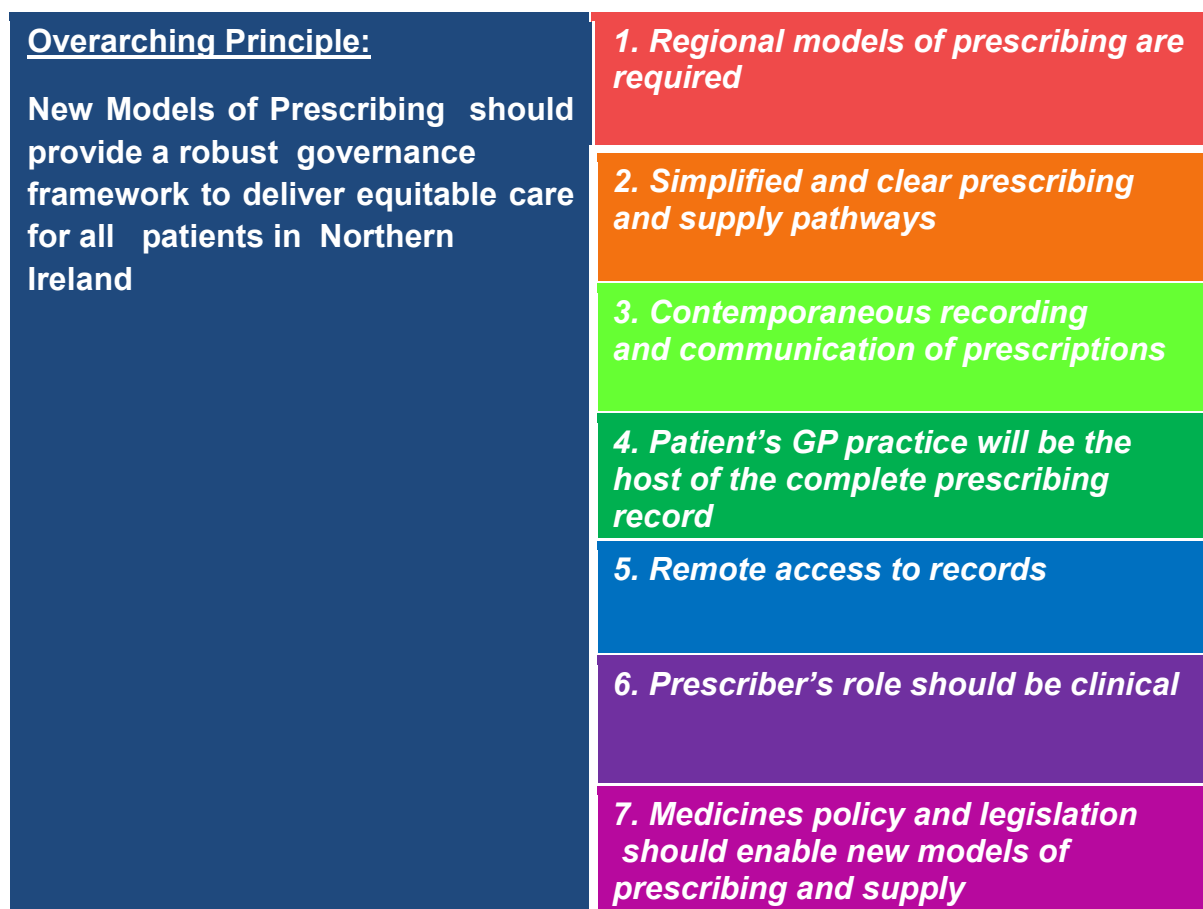
### **Overview of New Models of Prescribing project**

Northern Ireland lacks mechanisms to allow some prescribers working at interfaces between primary and secondary care to prescribe treatments directly to their patients. This means that there may be duplication of work, with the original prescriber needing to work through the patient's General Practitioner (GP) to ensure that the required treatments are prescribed.

In order to address these issues, a transformation project, led by the Health & Social Care Board<sup>1</sup> (HSCB) and involving extensive stakeholder engagement, was established to scope out the arrangements that need to be in place to enable prescribers working at the interface to work in a more effective and autonomous way. The stakeholder engagement established key principles to enable New Models of Prescribing (NMOP) (Figure 1).

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<sup>1</sup> 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



**Figure 1 - Agreed NMOP Principles**

A number of pilot projects were initiated to test the principles and explore the processes, governance and policy frameworks required for NMOP. The pilots included:

- Dietitian led direct ordering of oral nutritional supplements for care home patients
- Physiotherapist prescribing at the interface: community and outpatients
- Heart failure nurse specialist (HFNS) prescribing at the interface
- Mental Health Home Treatment Team: medical and non-medical prescribers

The Medicines Optimisation Innovation Centre (MOIC) is a regional centre in Northern Ireland dedicated to delivering medicines optimisation to the population. MOIC were tasked with assisting in the evaluation of the NMOP pilot studies.

This report will describe the evaluation of the HFNS prescribing pilot.

## **Context**

Specialist nurses (SPN) have an increased role in the management of patients suffering from chronic diseases such as diabetes, respiratory conditions and heart failure. Many are qualified non-medical prescribers and therefore have an opportunity to maximise the benefits of interactions with patients by optimising medication. The majority of SPNs are based within Secondary Care and operate from Trust premises. Therefore, they rely on GPs implementing their recommendations regarding changes in medications due to a lack of a facility to issue HS21s directly to patients. Consultations with patients by SPNs can be by telephone, during nurse-led clinics and at home visits. As an emphasis on “shift-left” and treatment in the community continues, GPs are at risk of significant burdens with requests to prescribe and qualified non-medical prescribers risk under-utilisation of their qualifications, skills and expertise. Furthermore, since the commencement of the COVID-19 pandemic, both primary care and secondary healthcare resources have been stretched with the need to rebuild and optimise the benefit from every member of the multi-disciplinary team.

Heart failure is often complex, associated with co-morbidities and significant symptom burden including, breathlessness, fluid retention, reduced physical capacity, and mental health issues. Sub-optimal management can lead to unscheduled hospital admissions. HFNS are ideally placed to ensure continuity of care and are often involved in the management of the patient from diagnosis to end-of-life. HFNS should have a more direct role in the prescribing of medicines during acute or titrating medication phases of illness, to ensure patient access to specialist multi-disciplinary teams.

## **Drug monitoring arrangements during the pilot**

The HFNS pilot had the potential to be more complex than the other NMOP pilots as it included planned up-titration of medicines with associated monitoring, followed by a

handover to a registered prescriber within the GP practice for ongoing prescribing and monitoring once the patient's medication was stabilised.

The importance of HFNS work is apparent from studies such as EUROASPIRE<sup>2</sup>, which provides evidence of the need to ensure that patient therapy is optimised as well as commenced. Previous evidence shows that therapy is sometimes started but not optimised. Optimisation requires dose titration and monitoring to a maximum tolerated threshold, which is complicated and research shows that this does not always occur<sup>3</sup>. Historically, titration of therapy was mostly carried out by the patient's GP and, as such the GP was clinically responsible for the prescribing and associated monitoring.

As part of the NMOP pilot, participating HFNS assumed the responsibility for prescribing and the up-titration of medication. As a consequence, it was necessary that all stakeholders understood the expectations of each other in the process and their own responsibilities at all points in the pathway, until care was returned to the GP for ongoing management at a defined point.

The relevant Trust's electronic Treatment Advice Note (eTAN) was used to communicate any prescribing undertaken by the HFNS to the GP, to avoid any ambiguity and to ensure integration into NI Electronic Care Record. For the duration of the pilot the HFNS compiled an eTAN for the entire titration course, describing their planned monitoring arrangements as well as the target dose and timescale / expected date for handover to GP for ongoing prescribing and monitoring.

In relation to monitoring, the HFNS pilot had to consider the following:

- The frailest patients had bloods taken at home by Trust Community Nurses, organised by Trust HFNS.
- Trust phlebotomy Hubs were used where appropriate for Trust-raised phlebotomy requests. The pilot had to consider that there was variability in Hub

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<sup>2</sup> Lifestyle and impact on cardiovascular risk factor control in coronary patients across 27 countries: Results from the European Society of Cardiology ESC-EORP EUROASPIRE V registry - Kornelia Kotseva et al. (2019).

<sup>3</sup> Guirguis K. Prescribed heart failure pharmacotherapy: How closely do GPs adhere to treatment guidelines? Res Social Adm Pharm. 2020 Jul;16(7):935-940. doi: 10.1016/j.sapharm.2019.10.002. Epub 2019 Oct 23. PMID: 31690529.

provision across NI i.e. where distance precluded travel to a hub, participating HFNS were aware that the interface with GPs' treatment rooms could be utilised, but this was kept to a minimum.

- Many (but not all) GPs participate in the funded NI Local Enhanced Service (LES) for Provision of Enhanced Phlebotomy Service, where GPs act as a phlebotomy service with Trust labels ensuring Trust requestor gets the results directly.

### **Aims and objectives of NMOP HFNS pilot evaluation**

The overarching aim was to complete an evaluation of the NMOP HFNS pilot through joint working between MOIC and HSCB<sup>5</sup>.

The objectives were to evaluate:

- the potential volume of prescribing activity that can be shifted to HFNS.
- the benefits in relation to access to prescribed items and reduced pressure on GPs.
- perspectives on the delivery of tailored HFNS interventions to patients and maximising professional skills at the point of care delivery.
- perspectives on the care pathways that can be delivered by a HFNS.
- perspectives on patients accessing prescribed items.
- perspectives on the impact on health care appointments and hospitalisations.
- perspectives on patient / client concordance with taking prescribed items.
- perspectives on communication processes to GPs regarding items prescribed.

### **Evaluation methodology**

An analysis plan linking project objectives to the collected data was co-produced by MOIC, HSCB and clinicians participating in the NMOP pilot. Division of tasks under the plan was agreed between HSCB and MOIC (Appendix 2).

In line with the agreed analysis plan, the following outcome measurement and analysis was undertaken:

- **Stakeholder feedback sessions:** An agenda for a virtual feedback session was co-produced by HSCB and MOIC. Mentimeter software was used to capture quantitative agreement ratings and qualitative commentary from contributors. Qualitative feedback from participants was mapped to the project objectives using a theming approach (a theme or discussion point was summarised and presented, supported by quote extracts from contributors). Average agreement ratings from the participants on how the pilot met the project objectives, were summarised.
- **Stakeholder survey:** A survey co-designed by HSCB and MOIC was launched via Citizen Space. Descriptive statistics were used to summarise responses. Qualitative feedback from participants was themed and tabulated.
- **NMOP audit activity:** Clinicians were invited to submit prescribing activity from 1 week of their practice prior to the commencement of the project (mid-November 2020 onwards) and end of the pilot (October 2021). Audit activity was collated using Excel. Data was quality checked and re-categorised as necessary. Descriptive statistics were used to summarise activity at the start and end of the pilot and results were tabulated.
- **Process maps:** Clinicians participating in the NMOP pilot summarised their clinical workflow at the start and end of the pilot. The main steps from the process at the start and at the end of the pilot were extracted from the text and collated in flowchart figure. Key findings were summarised.
- **Patient journeys:** Clinicians participating in the NMOP pilot summarised patient journeys which emerged during the pilot. The full summaries and key findings were presented in text.
- **Patient satisfaction survey:** Patients receiving care as part of the NMOP pilot were invited to complete and submit a paper patient satisfaction survey in person or via post. Descriptive statistics were used to summarise results. Direct quotes were extracted and presented.
- **Prescribing data:** Monthly prescribing data (number of prescribers, number of prescriptions, number of items, cost of items, average cost of item and average



cost of item per prescriber) from the start to the end of the pilot was summarised using descriptive statistics.

## **Results**

### **Stakeholder feedback session**

During the stakeholder feedback session, agreement ratings on whether the pilot met the overall objectives of the project were collected using Mentimeter software. Data from 7 stakeholders (4 HFNS, 2 hospital pharmacists and 1 nurse manager) were collected.

During the stakeholder feedback session, 7 attendees responded to a poll when asked “How strongly do you agree or disagree to the following statement” and asked to select a score from 1-5 (5 = strongly agree and 1 = strongly disagree)” (Table 1).

**Table 1 - Agreement ratings on whether the pilot met the overall objectives of the project**

	Question	Mean Score
1	Robust governance arrangements put in place to ensure safe and effective prescribing	4/5
2	This pilot project provided a greater opportunity to access the right medicines at the right time from the right person	3/5
3	The pilot project maximised the use of professional skills at the point of care	3/5
4	The pilot project displaced prescribing activity from GP practices	3/5
5	This pilot project facilitated more timely titration of doses to tolerated maximums	3/5
6	This pilot project supported a reduction in the amount of unnecessary health care appointments and hospitalisations and promoted faster recovery	3/5

All attendees engaged in discussion on their experience of how the pilot project met the objectives. Key themes were identified and a summary of the themes linked to the objectives are presented in Table 2 and further detail with supporting extracts in Appendix 3.1 – 3.3.

Overall, agreement ratings and positive comments from stakeholders indicate that there was agreement that the HFNS pilot met its objectives.

**Table 2 - Key themes identified from feedback provided at stakeholder workshop aligned with project objectives**

Objective 1	Objective 2	Objective 3	Objective 4	Objective 5	Objective 6
<b>Robust governance arrangements put in place to ensure safe and effective prescribing</b>	<b>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 HFNS</b>	<b>What were the benefits in relation to accessing medication and reducing pressure on GPs</b>	<b>From your experience of the pilot what are the existing barriers in policy and legislation to NMP in the community and outpatient setting?</b>	<b>Did prescribing processes address challenges with respect to</b> <ul style="list-style-type: none"> <li>communication with primary care</li> <li>timely updating of clinical records</li> <li>interface with community pharmacy.</li> </ul>	<b>Did it provide a greater opportunity to access the right medicines at the right time from the right person?</b>
eTAN facilitated good governance	Reduced time delay for patients	Streamlines patient journey	Range of drugs that are provided influences the cost and decision on funding	Timely communication and receipt of communication key	Positive response from nurse prescribers
Access to HS21s	HS21 good for urgent prescriptions, patients who were unstable	Specialist prescribing vs generalist	1992 circular may need revised	Awareness of eTAN process key	Some patients in some areas
Safe storage and transportation of HS21s	Reduced patient anxiety	Prescriber responsible for prescriptions		Awareness of NMOP key	
Good governance in place	Helpful for clinics not at dispensing hospital	Expert signing the prescription therefore of benefit to GP			
Good support in place	Reduced need for patient to visit GP or pharmacist	Good use of MDT			

Key themes were identified from the stakeholder feedback in relation to the benefits and challenges and requirements for regional roll-out. Key themes were identified as presented in Table 3. Appendix 3.1 – 3.3 details the direct extracts and comments from contributors that link to each theme.

**Table 3 - Positives, negatives and what was required for roll out: Key themes**

Positives	Negatives/Challenges	Required for roll out
Differences of opinion relating to monitoring responsibility identified	Issues with safe transport and storage of HS21s, unused HS21s	Team ownership
Phlebotomy hubs	Communication issues and links with GPs	Resolution of HS21s issues
Huge benefits of eTAN	Issues with interpretation of 72 hours	Finance and budget
Pilot utilised MDT and skillset of HFNS	Issues with follow up's via GP e.g. bloods	Robust clinical governance
Improved communication with GP practices	Limited face to face consultations due to COVID pandemic restrictions	Support and training
Clarity of roles and responsibilities of MDT members relating to management of HF patients	BHSCT had access to outpatient dispensing and utilised eTANs with follow up calls to GP Pharmacist to arrange prescription of medication and did not have the same perceived need for HS21 prescriptions	Clarification on 72 hours criteria
Patients benefit where there was no access to outpatient dispensing	Issues with non-medical prescribing and updating register	Engagement and communication with internal stakeholders
	Other predisposing issues and impact on HF services due to COVID pandemic	Policy
	Prescribing budget i.e. ownership of costs of items dispensed	Clarity on responsibilities
	Redeployed staff and reduced patient contacts due to COVID a challenge	Clear guidance on use of eTANs

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	Issues with flow of information via eTANS	
	Issues with location of phlebotomy hubs	

### Stakeholder survey

An online survey was developed to obtain the views and experiences of a range of key stakeholders. It was circulated to relevant groups after the stakeholder feedback workshop. There were 25 responses in total. Most of the responses were from HFNS or GPs (Table 4).

**Table 4 - Respondents to stakeholder survey**

Stakeholder	Number	Percentage
HFNS	9	36%
GP	5	20%
Cardiologists	4	16%
Director/Assistant Director of Nursing	2	8%
Trust Pharmacist	2	8%
Other*	2	8%
Practice Based Pharmacist	1	4%
<b>Total</b>	<b>25</b>	<b>100%</b>

\*Other: 1 response from a Public Health Agency colleague and 1 response from an ICT colleague

Most of the respondents worked in the Western Trust locality (10/25; 40%), 8 of the 25 (32%) worked in the Northern Trust locality, 6 (24%) worked in the Belfast Trust locality. One (4%) respondents selected 'Other'. Respondents were asked to respond to a number of questions.

### Do you feel this pilot benefits the patient?

21 out of the 25 (84%) respondents felt that the pilot benefits the patient; 4 (16%) highlighted that they were unsure if the pilot benefitted the patient.

14 of the 25 respondents (56%) provided further comment. The key themes extracted from these comments are summarised. Further detail is provided in Appendix 4.1.

<b>Key themes identified: Do you feel this pilot benefits the patient?</b>
• Time saving / more convenient for the patient
• Quick access to medications
• Facilitates optimisation of medications
• Access to urgent medications
• eTANs a key part
• Enabled holistic patient care
• Better patient experience with the HF service
• Safer prescribing for the patient
• Facilitates early patient intervention

### ***Did respondents feel comfortable using the eTAN?***

20 of the 25 (80%) respondents stated they felt comfortable using the eTAN. 3 (12%) respondents highlighted that they were unsure. 2 (8%) answered “No” to this question.

13 of the 25 (52%) provided further comment. The key themes extracted from these comments are summarised. Further detail is provided in Appendix 4.2.

<b>Key themes identified: The eTAN</b>
• Additional workload
• Streamlining of eTAN processing with primary care practices needed
• Communication with practice pharmacist useful
• eTAN make up-titrating medications more efficient
• eTANS have streamlined communication
• eTANS facilitate communication with primary and secondary care
• eTANS facilitates faster, clear and secure communication

**Were respondents happy for prescribing to continue?**

18 of the 25 (72%) respondents indicated that they were happy for the pilot to continue. 4 (16%) respondents answered “No” to this question, whilst 3 (12%) respondents stated they were unsure.

11 of the 25 (44%) provided further comment. The key themes extracted from these comments are summarised. Further detail is provided in Appendix 4.3.

<b>Key themes identified: Happy for pilot to continue?</b>
Alongside eTAN
Prescribing practice adds time to busy clinician schedule
Barriers to some sites implementing this prescribing practice exist
Patient benefit justifies continuation
Prescribing model enhances holistic patient care
COVID impacts on prescribing
Important that prescribing model continues
Utilises HFNS skill set and job satisfaction

**Did this add to your workload/time of consultation?**

12 of the 25 (48%) respondents indicated that this did not add to their workload/time of consultation. 7 (28%) stated that it did add to their workload/time of consultation. 1 respondent (4%) was unsure. 5 respondents (20%) stated this was not applicable to them.

10 of the 25 (40%) provided further comment. The key themes extracted from these comments are summarised. Further detail is provided in Appendix 4.4.



<b>Key themes identified: Did this add to your workload/time of consultation?</b>
Duplication linked to eTAN
Travel associated with collection of prescription pad from a secure location for onward transfer to clinic site added to workload
Additional time required for patient consultation
Additional time required for meeting to implement the project
No additional time / reduces workload
Increased workload for GP

### ***What were the positives associated with prescribing of HS21s***

24 of the 25 (96%) respondents provided a response to this question. The key themes extracted from these comments are summarised. Further detail is provided in Appendix 4.5.

<b>Key themes identified: Positives of the pilot project</b>
<ul style="list-style-type: none"> <li>• Reduce burden on GPs</li> </ul>
<ul style="list-style-type: none"> <li>• Time saving for patient</li> </ul>
<ul style="list-style-type: none"> <li>• Facilitates urgent patient medication</li> </ul>
<ul style="list-style-type: none"> <li>• Increase patient satisfaction</li> </ul>
<ul style="list-style-type: none"> <li>• Skills and knowledge utilisation</li> </ul>
<ul style="list-style-type: none"> <li>• Improved MDT communication and working</li> </ul>
<ul style="list-style-type: none"> <li>• Raised profile of HFNS</li> </ul>
<ul style="list-style-type: none"> <li>• Reduces chance of prescription error</li> </ul>
<ul style="list-style-type: none"> <li>• Increased transparency with prescriptions</li> </ul>
<ul style="list-style-type: none"> <li>• Patient access to specialist treatment and advice</li> </ul>
<ul style="list-style-type: none"> <li>• Increased job satisfaction</li> </ul>
<ul style="list-style-type: none"> <li>• Facilitated optimisation of medication</li> </ul>

***What were the challenges/negatives associated with HFNS prescribing of HS21s***

18 of the 25 (72%) respondents provided a response to this question. The key themes extracted from these comments are summarised. Further detail is provided in Appendix 4.6.

<b>Key Findings: Challenges/Negatives of the pilot project</b>
• Need for electronic document
• Prescriber confidence
• Issues with transportation, storage and insurance of prescription pads
• Duplication of work
• Redeployment of staff due to COVID
• Issues with patient uptake
• Complexities associated with communicating and agreeing roles with primary care
• Clarification on funding
• Resistance to change
• Lack of awareness of eTANs in GP practices

***What improvements/considerations should be made for full implementation?***

17 of the 25 (68%) respondents provided a response to this question. The key themes extracted from these comments are summarised. Further detail is provided in Appendix 4.7.

<b>Key Findings: What improvements/considerations should be made for full implementation?</b>
• Clear guidance on prescribing criteria / training
• Streamline communication methods with GP
• Clear guidance on storage and transport of prescription pads
• Electronic solution
• Project management
• Removal of policy barriers
• Team working
• Clarity on funding
• Communication with all stakeholders
• Roll out to other areas
• Awareness of other methods of prescribing
• Agree responsibilities
• Audit evaluation process

***Additional comments***

13 of the 25 (52%) respondents provided a response to this question. The key themes extracted from these comments are summarised. Further detail is provided in Appendix 4.8

<b>Key Findings: Additional Comments</b>
• Pilot a positive experience
• Pilot management and implementation a positive experience
• Some transition required
• A learning and development experience

**NMOP audit activity**

At the commencement of the pilot, 11 heart failure nurse specialist prescribers in the Northern, Western and Belfast HSCTs were involved in the collection of baseline data. BHSCT (5 HF nurse prescribers) withdrew from the pilot due to redeployment during the pandemic and were unable to collate end-point data. Clinicians were invited to submit activity from 1 week from before they started to prescribe on HS21 prescriptions (November 2020 onwards) and 1 week towards the end of the data collection period (October 2021) of the pilot. Data collected before the start and at the end of the pilot are summarised in Table 5.

**Table 5 - HFNS prescribers audit results**

	<b>Start</b>	<b>End</b>
Number of prescribers recording data	11	4
Number of patient contacts	146	69
Mean number of prescribers with previous experience of HS21	1 (*n=4/11 returning data)	N/A
<b>Patient contacts / trust</b>		
N (%) NHSCT	62/146 (42%)	44/69 (64%)
N (%) WHSCT	15/146 (10%)	25/69 (36%)
N (%) BHSCT*	69/146 (47%)	-
<b>Patient Diagnosis N (%)</b>		
HF	141/146 (97%)	69 (100%)
Other	4/146 (3%)	-
<b>Consultation</b>		
N (%) Virtual	85/146 (58%)	28/69 (41%)
N (%) Face-to-face	61/146 (42%)	41/69 (59%)

*\*BHSCT (5 HFNS prescribers) withdrew from the pilot due to redeployment during the pandemic and were unable to collate end-point data*

At the starting time point before the commencement of the pilot, the majority of consultations were virtual. By the end of the pilot, the majority of consultations were face to face. This change may have been influenced by the fact that HS21s could only be issued at face-to-face consultations.

Other actions linked to the patient consultation were also recorded in some patient consultations (Table 6).

**Table 6 - Changes to medication**

	<b>Baseline</b> N=146 patient contacts N=11 prescribers	<b>Final</b> n=69 patient contacts n=4 prescribers	<b>Change from start to end of audit</b>
N (%) medication started*	39/146 (27%)	22/69 (31%)	↑
N (%) medication stopped*	14/146 (10%)	11/69 (16%)	↑
N (%) medication dose increased*	41/146 (28%)	24/69 (35%)	↑
N (%) medication dose decreased*	11/146 (8%)	5/69 (7%)	↓
N (%) no change to medication	54/146 (37%)	21/69 (31%)	↓
Other action e.g. laboratory tests, medication review, onward referral	58/146 (40%)	8/69 (12%)	↓

\*Some patients had a combination of changes to medication (n=13 at baseline and n=11 at final)

The ability to draw conclusions on changes to medication is limited due to the reduced sample size at the end of the pilot. Overall, there was little change when comparing medication related interventions at the start to the end of the audit. The proportion of patients starting medication changed little. The proportion of patients who had medications increased, changed from 28% at the start of the pilot, to 35% at the end of the pilot. The proportion of patients who had no change to their medication, decreased slightly from 37% at start of the pilot, to 31% at the end of the pilot (Table 6).

Table 7 summarises the main mechanisms used to achieve a change to medication at patient consultations at the baseline and final time points of the pilot.

**Table 7 - Mechanism of achieving change to medication**

	<b>Baseline</b>	<b>Final</b>
<b>Telephone contact with GP practice regarding medication</b>	36/146 (25%)	2/69 (3%)
<b>Letter of recommendation to GP practice</b>	106/146 (73%)	46/69 (67%)
<b>HS21 issued by HFNS</b>	N/A*	10/69 (14%)
<b>eTAN</b>	28/146 (19%) BHSCT 28 NHSCT 0 WHSCT 0	18/69 (28%) BHSCT N/A NHSCT 10 WHSCT 9

\*N/A as HS21 not in use

Overall, from the start to the end of the pilot, there was a large reduction in the number of contacts that required a telephone contact with a GP practice to initiate a medication change. There was a corresponding increase in the number of eTANs issued as these were implemented during the course of the project within WHSCT and NHSCT and a modest increase in the number of HS21s issued. It is important to note that at baseline BHSCT were the only Trust to have access to eTANs. As 5 BHSCT HFNS prescribers withdrew from the pilot and were unable to collate end-point data, the potential increase in the use of eTANs may not have been fully realised in this pilot.

Some patient consultations involved multiple mechanisms to change medication (e.g. telephone call plus letter of recommendation). At baseline there were 69/146 (47%) patient consultations that involved > 1 mechanism. At final, there were 23/69 (33%) patient consultations that involved > 1 mechanism. This demonstrated a decrease in the number of mechanisms that clinicians were involved in to change medications, potentially improving efficiency.

## Process Maps

HFNS prescribers within each Trust taking part in the pilot were asked to outline the current pathway for accessing medicines for patients within the service at the start of the pilot and again at the end, following introduction of HS21 prescriptions. Table 8 summarises the number of steps in each pathway at the start and end, showing a reduction in both the number and time taken. On average the number of steps required reduced by 2. Completed process map templates can be viewed in Appendix 5.

**Table 8 - Process Maps: Number of steps and time taken to access medicines**

Measurement period	Number of steps	Time taken	Issues with process
Pre-pilot	9 steps	4-7 days	<ul style="list-style-type: none"> <li>• Delays in patient care. It may take longer than planned to titrate to target doses</li> <li>• Follow up bloods are difficult to arrange locally</li> <li>• Requires GP time</li> <li>• Significant time for HFNS to write letters of recommendation and telephoning GPs</li> <li>• NIECR is not a live system</li> <li>• Recording changes with GP practices</li> </ul>
End of pilot	7 steps	1-4 days	<ul style="list-style-type: none"> <li>• Time to handwrite prescription</li> <li>• Some issues with GP practices actioning eTANs</li> <li>• Record keeping for evaluation purposes</li> <li>• NIECR is not a live system</li> </ul>



**Patient journeys**

HFNS participating in the NMOP pilot submitted patient journeys which emerged during the pilot. Tables 9 and 10 summarises the key findings from 4 examples. Full texts can be viewed in Appendix 6.

**Table 9 - Patient journey example 1**

<b>Finding at initial assessment of patient and NMOP intervention</b>
<ul style="list-style-type: none"> <li>• Patient had been on waiting list for knee replacements but at the pre-operative assessment clinic was found to have hypervolemia (fluid overload). Surgery was delayed and a referral made for the patient to be reviewed at the Heart Failure Clinic.</li> <li>• Review and clinical assessment by the HFNS resulted in a HS21 prescription being issued directly to the patient detailing an increase in diuretic therapy and commencement of an ace inhibitor. Patient took prescription to community pharmacy and medication was commenced immediately. In addition eTAN sent simultaneously to patients GP noting the treatment plan.</li> <li>• Bloods and assessment 1 week later – condition improving and symptoms resolving.</li> <li>• Once HF medications are optimised postponed surgery will take place, with less risk.</li> </ul>

**Table 10 - Patient journey example 2**

<b>Finding at initial assessment of patient and NMOP intervention</b>
<ul style="list-style-type: none"> <li>• Patient referred to Heart Failure service following a number of admissions to hospital when diagnosed with having severe LVD.</li> <li>• Initial examination on assessment by HFNS revealed that patient was short of breath on minimal exertion. Commenced on combination treatment and diuretic therapy adjusted.</li> <li>• HS21 prescription issued directly to patient and treatment started immediately. In addition eTAN sent simultaneously to patients GP noting the treatment plan,</li> </ul>

and advising that HF nurse would follow up patient until treatment had maximum tolerated therapeutic dose.

- Patient reviewed weekly by HF nurse – bloods and symptoms monitored, and medication adjusted as required- each time HS21 issued directly to patient.
- Patient and patient's daughter (who attended appointments with mother) extremely thankful and welcomed the streamlined process to ensure treatment started straight away resulting in improvement in symptoms and optimisation of therapy in a timely manner.

### **Patient satisfaction survey**

A patient satisfaction questionnaire was developed to obtain the views and experiences of patients during the pilot period. Patients were provided with the satisfaction questionnaire at the end of their appointment and were given a patient information leaflet to explain background information and further detail regarding the HFNS prescribing pilot. In addition, a freepost envelope to return the questionnaire was provided in order to maximise response. There were 28 respondents in total. 18 of the 28 (64%) respondents stated they were seen in the Western Trust area; 10 (36%) were seen in the Northern Trust area. 28 of the 28 (100%) respondents outlined that they were seen in a clinic setting.

A number of questions were asked in the survey to which the patient was asked to agree or disagree (Table 11).

**Table 11 - Patient responses to patient survey questions**

<b>Question</b>	<b>Agree</b>
I was aware the medication was being prescribed/ reviewed by a HFNS prescriber	26/28 (93%)
It was explained clearly why the medication was prescribed	27/28 (96%)
I was advised on how to take the medication and how long to take the medication for	27/28 (96%)
I was advised of possible risks or side effects and what to do should there be any reaction to the new medication prescribed	26/28 (93%)
I was informed of arrangements to obtain repeat prescriptions	27/28 (96%)
I was satisfied with the consultation and felt I received appropriate and sufficient information	28/28 (100%)

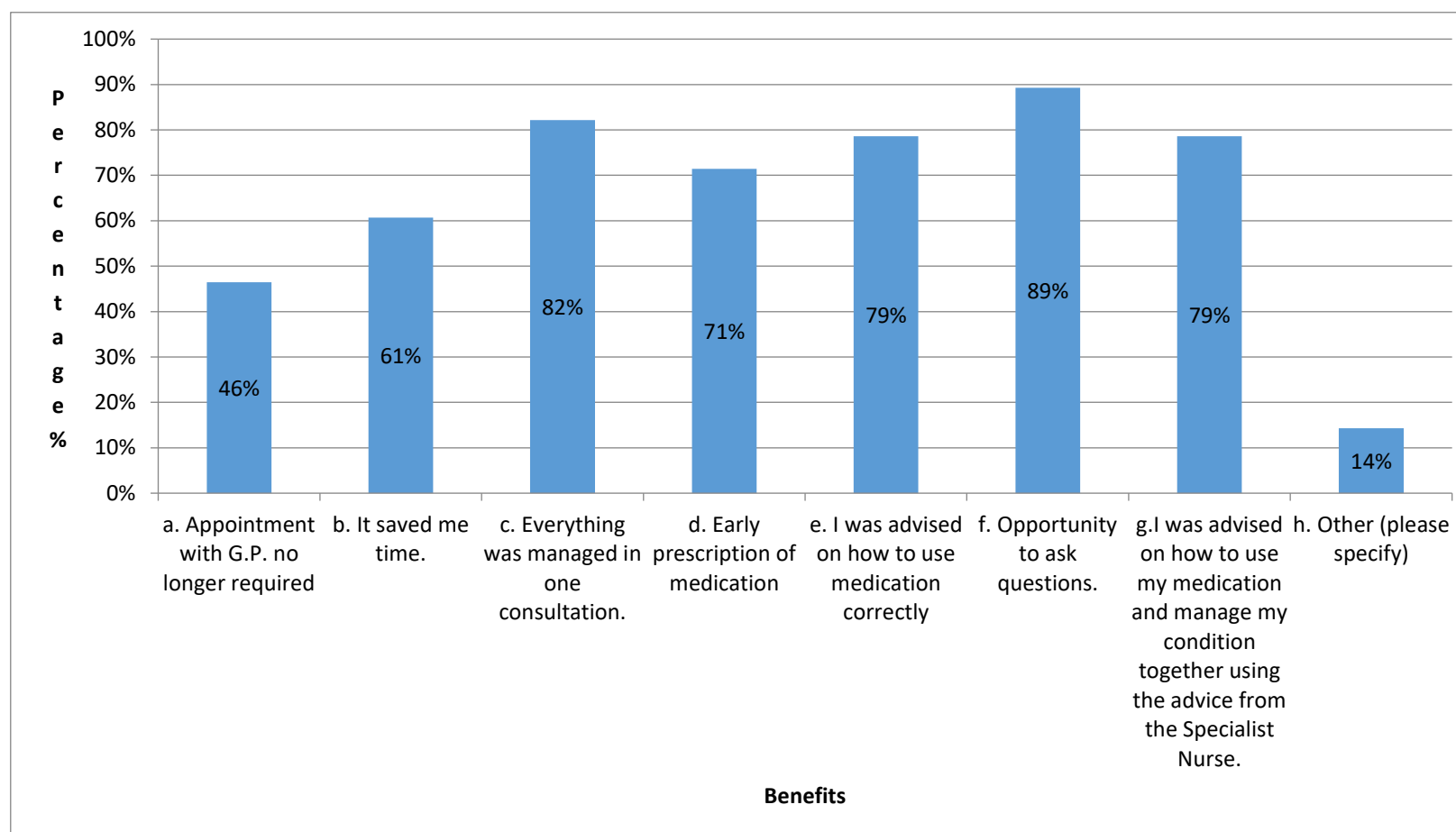
Patients were also asked to indicate agreement to the following statement: "If there were no medications prescribed, but there were changes to my existing medications, I was aware of future planned changes". 16/28 (57%) agreed, 8/28 (29%) answered the question was not applicable and 4/28 (14%) did not answer the question.

### **Patient perceived benefit**

Each respondent was asked to identify how the consultation had brought benefits. Results are presented in Figure 2.

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**Figure 2 - How did the consultation benefit you?**

*\*Other – see table below for further detail*

### Other ways that the consultation benefitted the patient

- Only partly
- I received a lot of reassurance and comfort from nurse A
- Through my journey to a triple bypass carried out at Blackrock private clinic, Dublin. I could not have been served any better
- It's very satisfying to know I have a specialist nurse to speak to if and when I need

### Suggestions for improvement

13 of the 28 (46%) respondents included comments on how the service could be improved upon; these are summarised below.

### Comments on how the service could be improved upon:

- Would be helpful if specialist nurse could take blood samples at time of visit
- Information from nurse B was clear and easily understood - no need for further change
- It was a large help to have it in Moyle hospital as it saved a quite long trip to either Whiteabbey or Antrim Area
- The patient should be told more about his possible side effects of his medications
- Everything was made clear to me as to having some tablets stopped and others started to help my condition. Thank you all for the kindness shown
- Satisfied with service provided and information. No improvement needed
- Very satisfactory
- I feel that the service is excellent
- I could not be any more happy with the quality of service all around that I am experiencing and can heap nothing but praise to all that I come into contact with. Thank you
- Receptionists at GP surgeries getting new medications and doses updated on the patients record ASAP

- |  |
|--|
| <ul style="list-style-type: none"><li>• I'm very happy with the way things are with my nurse specialist. At this stage I have no reason to look for improvements</li></ul> |
| <ul style="list-style-type: none"><li>• Have no problems with this service, I can't praise staff enough. Excellent attention and advice</li></ul>                          |
| <ul style="list-style-type: none"><li>• Felt very reassured with nurse specialist and trusted her decision</li></ul>   |

**Key Finding**

- |  |
|--|
| <ul style="list-style-type: none"><li>• Patients aware of the process and provided with high level of medication information</li><li>• Patients report high levels of satisfaction</li><li>• A wide range of patient perceived benefits reported</li></ul> |
|--|

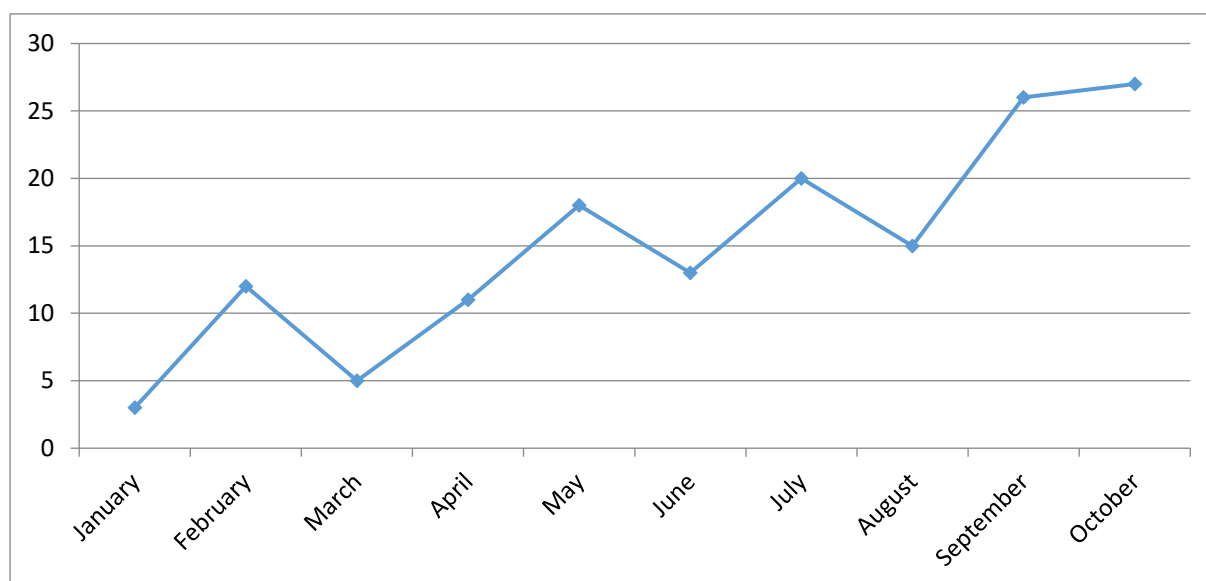
**Prescribing data**

Prescribing data relating to items prescribed by HFNS and dispensed by Community Pharmacies between January and October 2021 were provided by the Business Services Organisation and are presented in Table 12, Figures 3 and 4. The number of prescribers and volume of prescribing and associated costs fluctuated during the course of the pilot and was influenced by redeployment of nurses at various stages of the pandemic and HFNS annual leave entitlements. The average cost of a prescription item during the pilot was £32 and the average cost of items prescribed per prescriber per month was £186.

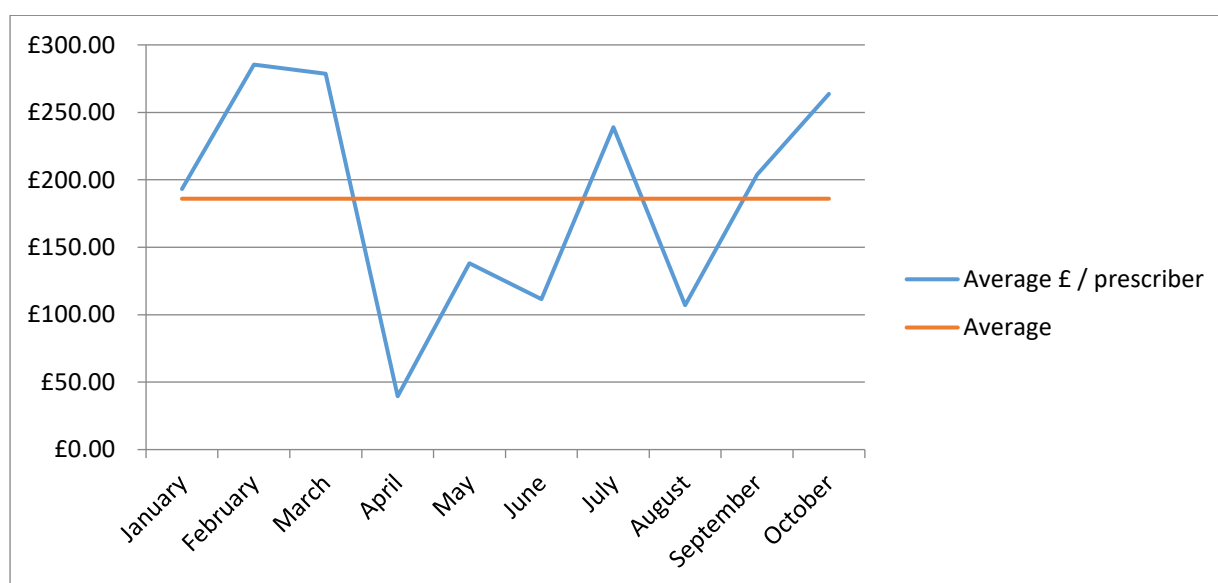
**Table 12 - Prescribing volume and costs**

<b>Month</b>	<b>No. of prescribers</b>	<b>No. of items</b>	<b>Cost of items (£)</b>	<b>Average £ / item</b>	<b>Average £ / prescriber</b>
<b>January</b>	1	3	£193.12	£64.37	£193.12
<b>February</b>	1	12	£285.38	£23.78	£285.38
<b>March</b>	1	5	£278.57	£55.71	£278.57
<b>April</b>	5	11	£197.80	£17.98	£39.56
<b>May</b>	4	18	£552.58	£30.70	£138.14
<b>June</b>	2	13	£223.05	£17.16	£111.53
<b>July</b>	3	20	£717.05	£35.85	£239.02
<b>August</b>	3	15	£320.89	£21.39	£106.96
<b>September</b>	3	26	£611.79	£23.53	£203.93
<b>October</b>	3	27	£790.95	£29.29	£263.65
<b>Monthly Average</b>	2.6	15	£417.12	£31.98	£185.99
<b>Total</b>		150	£4,171.18		





**Figure 3 - Number of items prescribed by HFNS (Jan-Oct 2021)**

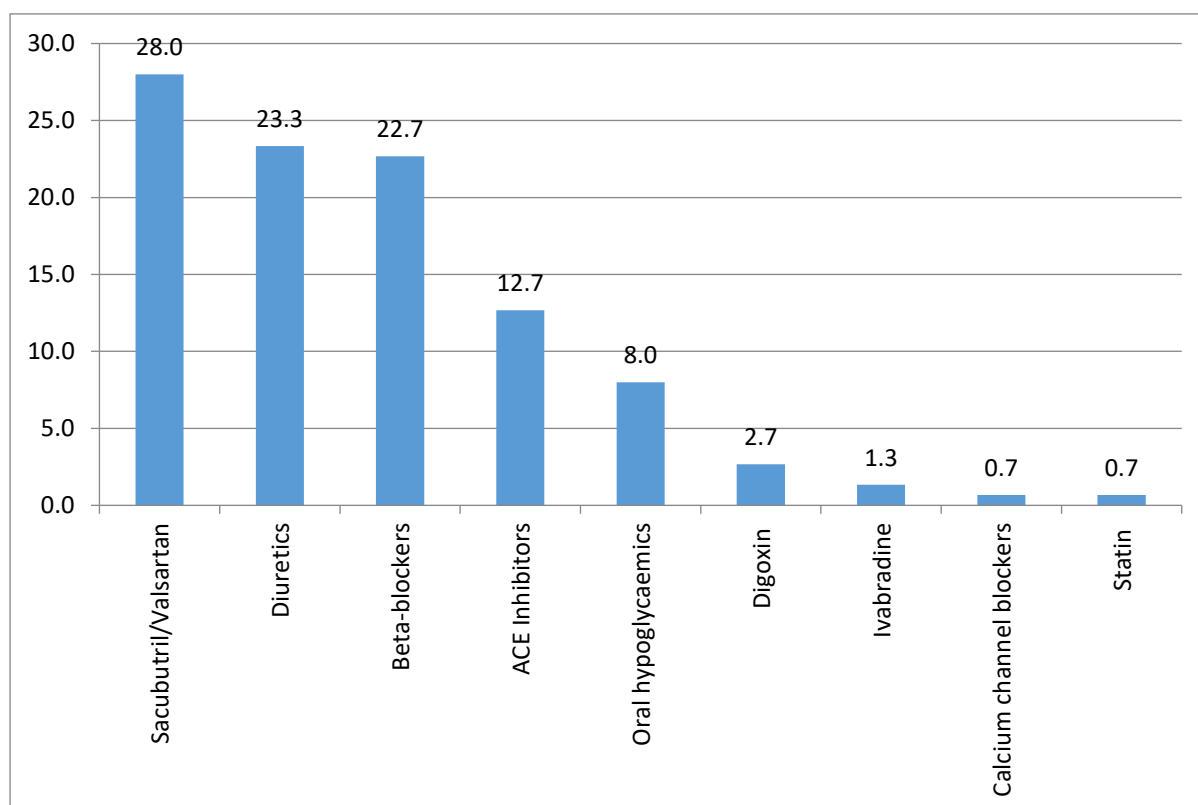


**Figure 4 - Average cost of prescribing per month**

A total of 150 medicines were prescribed during the pilot period (Appendix 7). These were categorised into therapeutic groups and are presented in Table 13 and Figure 5.

**Table 13 - Medicines prescribed by therapeutic group**

Therapeutic Group	Number of items
Sacubitril/Valsartan	42
Diuretics	35
Beta-blockers	34
ACE Inhibitors	19
Oral hypoglycaemics	12
Digoxin	4
Ivabradine	2
Calcium channel blockers	1
Statin	1



**Figure 5 - Percentage of items prescribed by therapeutic category**

Medicines prescribed by HFNS were reviewed to determine compliance with NI Formulary choices (for those therapeutic areas for which a formulary exists). Best practice guidance indicates that clinicians should aim for at least a 70% compliance rate with medicines' formularies. Table 14 indicates the formulary compliance achieved.

Overall, only three non-formulary items were prescribed by the HFNS participating in the pilot (branded statin and ivabradine)

**Table 14 - Compliance with NI Formulary**

Formulary	Compliance
Diuretics (n=35)	100%
Beta-blockers (n=34)	100%
Statin (n=1)	0%
ACE-inhibitors (n=19)	100%
Calcium channel blockers (n=1)	100%

## Conclusion

Northern Ireland lacks mechanisms to allow some prescribers working at interfaces between primary and secondary care to prescribe treatments directly to their patients. HFNS should have a more direct role in the prescribing of medicines during acute or titrating medication phases of illness, to ensure patient access to specialist multi-disciplinary teams. This transformation project, led by the HSCB was established to scope out the arrangements that need to be in place to enable prescribers working at the interface to work in a more effective and autonomous way.

In this evaluation, there was agreement amongst project stakeholders that the NMOP HFNS pilot met its objectives. The pilot successfully put in place robust governance arrangements, provided greater opportunity to access the right medicines at the right time for the right person, maximised professional skills at point of care, displaced prescribing activity from GP practices and reduced the amount of unnecessary health care appointments.

The majority of HFNS involved felt that the pilot benefitted patients, were comfortable using the eTAN and were happy for prescribing via HS21s to continue. A range of positive impacts were reported by the HFNS involved including a reduced burden on GPs, time savings for patients, improved MDT working and skills utilisation. Key challenges were also highlighted by stakeholders including, complexities when communicating with primary care, duplication of work and lack of HFNS prescriber confidence. A range of recommendations for roll out were suggested by stakeholders and serve as learning points for the further scale-up of NMOP activity. When

considering the electronic solution there was key learning from this pilot as eTAN's were used alongside HS21 prescriptions, for different reasons. The prescribers underlined that development of a technical solution for printing of prescriptions, as well as consideration of the timeline to complete this, would be required. Clarification on the criteria for using HS21 would be useful as there were different interpretations of what was urgent clinical need. The pilot also encountered delays linked to GP for dealing with hospital correspondence transmitted electronically and this would need to be a consideration for use of the prescribing model in the future.

The audit activity in this pilot clearly showed that HS21 forms were being used to deliver medication to HF patients. However, the volume of activity (with regards to number of medication interventions) changed little when comparing the start to the end of the audit. Even so, there was a reduction in the volume of telephone contacts required with GP practices and a corresponding increase in the number of eTANs issued. There was also an overall decrease in the number of mechanisms that clinicians were involved in to change medications, potentially improving efficiency. The activity captured as part of this pilot demonstrated utilisation of NMOP in a complex group of patients. There were also a number of issues that impacted on the delivery and implementation of this pilot during COVID-19, including redeployment of HFNS, shielding of staff and staff sickness. Prescribers outlined that whilst there were differences in NMOP activity between different sites and different areas, it was particularly useful in the acute setting where access to the clinic environment and to phlebotomy and labs was readily available. Stakeholders underlined that there would be interest in replicating the practice in other nurse specialist areas as well as in other multidisciplinary teams.

Following the introduction of HS21 prescriptions, there was a reduction in both the number of steps and the time taken to access medicines in the service, clearly demonstrating pathway redesign with processes becoming more efficient. Patients reported high levels of satisfaction and a wide range of benefits from the NMOP service, indicating that practices in the pilot followed a patient centred approach.

The number of prescribers and volume of prescribing and associated costs fluctuated during the course of the pilot and was influenced by redeployment of nurses at various stages of the pandemic and annual leave entitlements. Furthermore, high levels of formulary compliance amongst clinicians were achieved.

The wider project group highlighted the success of the project work as an example of excellent collaboration and collective leadership across stakeholder groups.