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HEALTH SERVICES CHANGE GUIDE

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Integrated Care Programme for the Prevention and Management of Chronic Disease

Sláintecare Integration Fund Project 153

End to End Implementation of the Model of Integrated Care for Type 2 Diabetes in Two Community Healthcare Networks

Presenters: National Clinical Programme for Diabetes, Integrated Care Programme for the Prevention and Management of Chronic Disease

Introduction

- The Irish health service is undergoing major reform to address the populations' changing healthcare needs. Primary care services are being aligned to new community healthcare networks (CHNs), each with a population of 50,000 people, and care for chronic conditions such as diabetes is being moved to the community for the vast majority of patients.
- The National Framework for the Integrated Prevention and Management of Chronic Disease (2020-2025) outlines the roadmap for the reform of chronic disease management in Ireland including the introduction of specialist ambulatory care hubs providing GP access to diagnostics, specialist services and specialist opinions within the community.
- The National Clinical Programme for Diabetes developed this project to pilot the introduction of Community Specialist Diabetes Teams in two CHNs and evaluate its implementation to help inform the further development and scaling up of the initiative.
- The Model of Integrated Care for Type 2 Diabetes and the Model of Care for the Diabetic Foot were used to guide service implementation.
- The pilot ran from 1st September 2020 for a period of 10 months until 30th June 2021.

People & Culture Change Platform
CREATING READINESS

Change Framework

Engagement

People's Needs Defining Change
Service Users, Families, Citizens, Communities & Staff

- The NCP Diabetes Team with the change manager engaged in a **stakeholder mapping exercise** (using the template from the Health Service Change Guide) to inform membership of the project teams.
- A strong governance structure was developed through local and national project teams comprising key stakeholders. This ensured that key stakeholders were involved in decision making around the design, development and implementation of the new specialist service.
- A survey of diabetes care in general practice across both CHNs at the beginning of the project helped identify the needs of general practice.
- To support service implementation the community specialist teams (CSTs) engaged with 29 general practice across both CHNs through outreach introductory / educational meetings. These were key to developing a rapport between specialist teams and GPs and Practice Nurses.
- Engagement with the aligned hospital specialist team was through meetings and representation on the local project team, and then a mix of regular virtual MDT case discussion meetings and the split 80:20 Community-Hospital nature of the CNS and podiatry posts.
- View and experiences of patients attending the services were captured as part of the evaluation and will inform further service development and scaling up of the project.

DEFINE

Aims and Objectives

- We aimed to pilot the introduction of Community Specialist Diabetes Teams (CNS, dietitian, podiatrist) in two CHNs and evaluate its implementation from the perspectives of people with diabetes attending the services, the community specialist team and general practice staff to help inform the further development and scaling up of the project.
- We hypothesised that the introduction of a community diabetes specialist service at CHN level would facilitate right care, by the right team, in the right place at the right time.
- By evaluating service implementation from various perspectives we aimed to identify facilitators and barriers to implementation of new community-based diabetes specialist services to help inform national implementation.

DESIGN

Methodology, Evidence and Planning

- Actions, tasks, outputs and outcomes were defined and agreed.
- Using the templates in the Health Service Change Guide (and facilitated by the Change Manager) the newly appointed Dietitians, Podiatrists and CNS designed a Service Operational Model for their service. This process was facilitated by the Change Manager. This involved developing service eligibility criteria, referral processes, pathways and policies (informed by the national diabetes Models of Care) which were reviewed and approved by the local project teams.
- The new clinical services were implemented over a 10 month period in both Community Healthcare Networks.
- We monitored and evaluated the project by collecting monthly clinician activity data, quarterly caseload audits, practice nurse focus groups, a patient experience questionnaire, a GP survey and qualitative interviews with the community specialist team, GPs and people with diabetes attending the services.
- Quarterly caseload audit findings were reviewed by the clinician and the change manager to inform service improvements. These audits identified areas for development which were discussed and agreed with the local project teams.
- Data collected by the Community Specialist Team (CST) on their 6-month activity and their caseload (December 2020 to May 2021) and this was analysed against agreed targets.

DELIVER

Discussion and Conclusion

- There is currently a restructuring of community healthcare with the development of new CHNs and the introduction of new Specialist Ambulatory Care Hubs in the community as part of the Enhanced Community Care (ECC) Programme. This is the first time diabetes CSTs have been piloted at CHN level and the findings can inform further development of the specialist service.
- Our results indicate that patients and referrers considered this **new community diabetes specialist service** to be **accessible**, **responsive** and **patient-centered**:
  - Both general practice staff and patients reported very positive experiences of accessing the CST.
  - Patients reported that consultations were patient-centred and increased their confidence with self-management.
  - GPs reported difficulty 'keeping up' with diabetes treatment options and viewed the CNS's as having expertise in medicine management.
  - General practice staff valued the direct link CSTs had with the hospital OPD.
  - A set of recommendations were developed based on the experiences and views of the CST, general practice staff and patients.
- Further work is needed to evaluate the clinical effectiveness of this new model of care.
- The project was selected by Sláintecare for mainstreaming into the ECC Programme.

Safer Better Healthcare, and Staff & Public Value
CHANGE OUTCOMES

Outcomes

We have highlighted barriers and facilitated designing, developing and implementing a new community specialist service for a Community Healthcare Network and developed a set of recommendations. The learning from the project have been shared with the ECC Steering Group and is informing national implementation.

Key recommendations:

- CSTs should be co-located to facilitate responsive patient care, delivery of joint/coordinated appointments, informal information-sharing, networking and relationship-building.
- It is vital that new CSTs are supported by administrative and IT infrastructure to ensure efficient service delivery. This was a key recommendation in terms of the wider roll-out of CSTs.
- The implementation of a shared clinical information system that supports integrated disease management across hospital and community should be prioritised as part of service upscaling.
- Where implementation of new models of care require changes to local care pathways, this should be done collaboratively with all aligned service at network, specialist hub and hospital level to ensure a seamless transition across all levels of care, ongoing service capacity and a patient centered service.
- There should be clear communication of new geographical boundaries and eligibility criteria for CHN and Specialist Ambulatory Care Hub services to all referrers, to limit ineligible referrals.
- Teams need time for service and process planning prior to service commencement:
  - Supporting and resourcing engagement of the CST with GPs and PNs is important to develop rapport, clarify referral processes, provide education, and to inform and facilitate new-service development and implementation.
  - Services should establish mechanisms for regular engagement with consultants and hospital- based specialist.

For more information contact:
Lorna Hurley, Change Manager
Integrated Care Programme for Chronic Disease (ICPCD)
E: Lorna.Hurley@hse.ie
Case studies: www.hseland.ie/changehub

Acknowledgements:

The NCP Diabetes would like to thank Sláintecare for funding the project. We would also like to thank the clinical specialist teams and local project teams in Community Healthcare West and Cork Kerry Community Healthcare for their support and leadership throughout the project.
The NCP Diabetes would like to acknowledge the help and expertise of our research partners in the School of Public Health and Department of General Practice in UCC and the Discipline of Medicine in NUI Galway with the evaluation of this project.

Sláintecare
Cúram Sláinte Phobail, Iarthar ag freastal ar Ghaillimh, Maigheo agus Ros Comáin | Community Healthcare West serving Galway, Mayo and Roscommon
Cúram Sláinte Pobail Corcaigh Ciarraí Cork Kerry Community Healthcare

SLAINTECARE INTEGRATION FUND PROJECT 153

End-to-End Implementation of Model of Integrated Care for Type 2 Diabetes in Two Community Healthcare Networks

Final Report

National Clinical Programme for Diabetes

In collaboration with the School of Public Health and Department of General Practice UCC and the Discipline of Medicine NUI Galway

Acknowledgement

The National Clinical Programme for Diabetes would like to acknowledge the commitment of the local project teams (LPTs) in Community Healthcare West (CHW) and Cork-Kerry Community Healthcare (CKCH), and specifically the support and leadership of the LPT chairpersons, Siobhan Woods and Majella Daly throughout the delivery of the project. See full LPT membership in appendix 1.

The Integrated Care Programme for Chronic Disease (ICPCD) would like to thank Sláintecare for the funding to deliver this initiative. The ICPCD would also like to acknowledge the projects' research partners Dr Sheena McHugh, Dr Fiona Riordan and Dr Cormac Sheehan at University College Cork and Dr Máire O'Donnell at National University of Ireland Galway for their expertise and support with project evaluation.

Evaluation Working Group

Membership	
Professor Sean Dinneen	Clinical Lead, NCP Diabetes and Consultant Endocrinologist, University Hospital Galway, Saolta Hospital Group, HSE
Lorna Hurley	Change Manager, Primary Care Strategy and Planning, HSE
Cliodhna O'Mahony	Programme Manager, NCP Diabetes, HSE
Margaret Humphreys	National Lead, Diabetes Self-Management Education, NCP Diabetes, HSE
Dr Suzanne Kelly	ICGP Diabetes Lead, NCP Diabetes
Dr Sheena McHugh	Senior Lecturer & Health Services Researcher, School of Public Health, UCC
Dr Máire O'Donnell	Health Services Researcher, Discipline of Medicine, NUI Galway
Dr Fiona Riordan	Post-doctoral Researcher, School of Public Health, UCC
Dr Cormac Sheehan	Researcher, Department of General Practice, UCC
Katie Murphy	Nurse Facilitator, Department of General Practice, UCC
Dr Aaron Liew	Consultant Endocrinologist, Portiuncula University Hospital, HSE
Dr Ciara McGowan	Senior Dietitian, Community Nutrition and Dietetics, Cork Kerry Community Healthcare, HSE
Bernie McDonnell	CNS Diabetes Integrated Care, Community Healthcare West, HSE

Abbreviations

CNA: Could Not Attend
CHN: Community Healthcare Network
CHW: Community Healthcare West
CKCH: Cork Kerry Community Healthcare
CNS: Clinical Nurse Specialist
CPD: Continuing Professional Development
CST: Community Specialist Team
DNA: Did Not Attend
DSME, Diabetes Self-Management Education
ECC: Enhanced Community Care
F2F: Face to Face
GMS: General Medical Services
GPVC: GP Visit Card
HCP: Health Care Professional
IFG: Impaired Fasting Glucose
IGT: Impaired Glucose Tolerance
NR: not recorded
OPD: Outpatient Department
PHN: Public Health Nurse
PN: practice nurse

TABLE OF CONTENTS

Contents

Executive summary

The aim of the project was to pilot and evaluate the introduction of a multidisciplinary Diabetes Community Specialist Team (CNS, dietitian, podiatrist) in two community healthcare networks: Network 7 (Tuam, Athenry, Abbeyknockmoy, Loughrea, in Community Healthcare West) and Network 9 (North Cork City – Blarney in Cork Kerry Community Healthcare).

Funding was secured for a CNS Diabetes, senior dietitian and senior podiatrist at each site, and a change manager to support project delivery. Six of seven staff members were successfully recruited, and all were in post by mid-November 2020. Recruitment campaigns for a CNS Diabetes in Network 9 CKCH were unsuccessful during the project timeline and therefore the project was supported by a pre-existing CNS Diabetes service that served nine of the eighteen practices in the network.

The pilot commenced in September 2019. It was paused in March 2020 due to the COVID-19 pandemic and resumed on 1st September 2020 for a period of 10 months until 30th June 2021.

To evaluate implementation, data were collected by the Community Specialist Team (CST) on their 6-month activity and their caseload (December 2020 to May 2021). Interviews were conducted with the team and the project change manager. A survey of diabetes care was completed by general practices in the two networks and interviews and focus groups were conducted with GPs and practice nurses. A patient experience survey was completed by people with diabetes who engaged with the service, and interviews were conducted with a purposive sample of those who completed a patient questionnaire.

Summary of findings from analyses of service delivery data

Overall, 516 patients were seen by 2.0 WTE podiatrists, 435 patients by 2.0 WTE dietitians, and 545 patients by approximately 1.6 WTE CNSs (1.0 SIF CNS plus input from established CNSs in some practices estimated at 0.6 WTE in total) in the 6-month period across the two community healthcare networks in Galway and Cork.

- A greater proportion of return patients (compared to new patients) were seen across all clinicians (Galway Podiatry = 52%; Cork podiatry = 96%; Galway dietitian = 56%, Cork dietitian = 65%; Galway CNS = 76%, Cork CNS = 79%). This greater proportion of return patients would indicate that episodes of care are likely to involve more than one appointment.
- All clinicians conducted both face-to-face (F2F) and phone appointments due to Covid 19 restrictions.
- Structured education for people with diabetes was adapted from face-to-face group courses to virtual delivery due to Covid 19. Five virtual Discover Diabetes courses were delivered by the SIF Dietitian in Co Cork. In Galway 13 DESMOND courses were completed, and while accessible to patients in the network, they were delivered by other experienced DESMOND educators.
- Limited professional education was delivered at both sites over the projects 10-month duration. likely reflecting the impact of COVID-19. In Galway, General Practice introductory and educational 'zoom' meetings (16 GPs and 10 PNs), clinic shadowing (2 PNs), lunchtime educational workshop (13 PHNs), were held. In Cork General Practice introductory and educational 'zoom' meetings (31 GPs and 27 PNs) and a Nurse educational webinar (11 PNs and 2 PHNs) were held.
- The number of people with diabetes on waiting lists and the wait time increased across all clinicians during the evaluation period from December 2020 to May 2021: Galway podiatrist = from 3.7 to 6.5 weeks, Cork podiatrist = not available; Galway dietitian = 2.8 to 4 weeks, Cork dietitian = 5.6 to 6 weeks; Galway CNS = 2 to 4 weeks, Cork CNS = not available. The reasons for this are likely to be multiple

including a) general practice becoming more familiar with the service resulting in more referrals, b) a greater proportion of return patients and c) delays in offering face to face appointments during periods of lockdown due to Covid 19. There were a greater number of patients on the wait list for the dietitian in Cork compared to Galway, which may reflect the greater pre-diabetes caseload at this site (28% vs. 3%).

- There were differences in risk profile of people with diabetes seen by podiatrists in the Galway and Cork CHNs. In the Cork site, a higher proportion of people in remission (44% vs. 9%) or high risk (33% vs. 21%) were seen while in the Galway site a higher proportion of people at moderate risk were seen (68% v 17%). These differences could be attributed to the fact the podiatrist in Cork inherited an established caseload from the community podiatry service, whereas the podiatrist in Galway started with new referrals and cases from a community podiatry waiting lists.
- In terms of referrals between team members, a lower proportion of people with diabetes were directly referred by the dietitian and podiatrist to the CNS in Cork (2% and 3% respectively) compared to Galway (13% and 22% respectively). This may reflect the fact the Cork team could only cross-refer patients to CNS from the nine practices that the pre-existing CNS attended in CHN9 and the lack co-location of the full team at this site.
- Discharges from the services were monitored by caseload audit in February and in May 2021.
    - The number of patients on the discharge register for dietitians in both networks increased: Galway dietitian = 22 to 41 patients; Cork dietitian = 8 to 67 patients
    - Discharge by podiatrists remained low, increasing slightly in Galway over time: Galway podiatrist = 1 to 5 patients; Cork podiatrist = 0 patients
    - Discharges by the Galway CNS increased from 4 patients to 10 patients. Discharges from the non-SIF CNSs were not monitored.

Summary of findings from interviews with the Community Specialist Team

Two podiatrists, two dietitians, three CNSs and 1 change manager were interviewed.

Facilitators of implementation

- Networking and communication between team members facilitated joint or coordinated appointments, sharing information and engagement in service planning e.g. outreach engagement activities, referral management processes, team triage etc.
- Availability of a shared space also facilitated joint or coordinated appointments, bringing benefits to both people with diabetes attending service (accessibility) and integrated care team (opportunity for shared learning).
- Engaging key stakeholders through introductory and educational outreach meetings (virtual / F2F) supported delivery of HCP education, '*upskilling*', and subsequent contact regarding referrals. These activities fostered relationships between HCPs in the CHN.
- Team members valued leadership from the central project team as it ensured issues with service delivery were discussed and addressed early on, and implementation '*momentum*' was maintained.
- Virtual MDT case discussion meetings with consultants were valued as they provided access to specialist clinical guidance when required by the team. Case studies indicate that these meetings facilitated fast-track access to outpatients when needed.
- Features of the Diamond shared information system ('*talks to the hospital and talks to us'* and ability to access other team members' patient notes) were facilitators of service implementation in Galway, as well as features of HealthLink e-referral (self-populating function).

Barriers to implementation

- Lack of administrative staff impeded the organisation of joint or coordinated appointments and education, and impacted on clinical time. Provision of administrative support was a key recommendation from the team.
- The lack of integration between hospital and primary care IT systems was a barrier to implementation in both sites, as well as the lack of access for the CST to certain hospital IT systems. Other IT barriers included the lack of a scheduling and caseload management function (i.e. appointment and recall system) with the Diamond system in Galway, the inability to easily generate electronic reports to enable bespoke service monitoring at both sites, and the administrative burden of adding new patients to Tyndale in Cork and Diamond in Galway.
- The perceived lack of alignment of national diabetic foot care model of care with what was happening '*on the ground*' presented a challenge for podiatrists. Specifically, it was felt that people classified as being at high-risk of ulceration would need more frequent appointments than indicated in the model, and risk screening in general practice was not happening routinely.
- The lack of clarity about community healthcare network boundaries (which were in development during project implementation) created issues with referrals into the services at both sites.

Summary of findings from the GP Survey on diabetes care at the beginning of the project

Fifteen practices across both CHNs participated in the survey.

- In December 2020 prior to implementation, all practices in both networks were registered to deliver the CDM programme, and most (93%, n=14) were registered to deliver the Diabetes Cycle of Care. Most practices (87%, n=13) had a diabetes register and most (73%, n=11) used the register to support call/recall for the Diabetes Cycle of Care and/or CDM programme. Most (80%, n=12) practices recalled people with uncomplicated T2D twice a year.
- Most practices believed it would be very useful to have the network diabetes dietitian (93%, n=13/14), podiatrist (100%, n=14/14) and CNS (93%, n=13/14) support the management of their patients with diabetes in the community.
- When asked about their preference for the location of CNS clinics during Covid times and in non-covid times the preference for clinics in primary care was 91% (n=10) and 64% (n=9).
- Most practices (63%, n=13) report their staff had specific education and training needs relating to diabetes care. Only 58% (n=7) of practices had staff trained in diabetic foot screening, and 86% (n=12) thought further training in diabetic foot screening would be useful. Of the respondents, 67% (n=8/14) felt 'shadowing' opportunities for staff with the CST would be useful.

Summary of findings from interviews with General Practice staff on their experience of engaging with the CST.

- GPs and practice nurses valued the accessibility (i.e. locally delivered services, ease of referral, shorter waiting times) and flexibility (i.e. open to case discussions regarding referrals) of the CST.
- Both GPs and Practice Nurses highlighted the difficulties in *'keeping up'* with diabetes treatment options. CNS's were perceived to have a high level of expertise in managing me dication.
- GPs valued the access they had to the CST, who provided a direct link to hospital outpatient departments as appropriate.
- Practice Nurses often took on the responsibility of the running the diabetes clinics and so valued the access they has to the specialist support as and when need.

- Both GPs and practice nurses commented on the 'continuity of care' that was provided by the CST, where patients were seen by the same person and this was perceived to improve patients' engagement with their diabetes care.
- The support offered by the CST helped educate general practice staff and improve confidence in delivering diabetes care.
- GPs perceived that the CST had more time for patient education and individual-level support compared to practice staff.
- Similar to the CST experience, lack of access to integrated IT systems across general practice, primary care and the hospital service was a barrier to coordinated and integrated care delivery for people with diabetes.

Findings from patient questionnaires and interviews on people's experiences of attending the CST

Forty-nine percent (41/85) of patients returned a postal questionnaire about their experiences of attending a Community Specialist Team health care professional (CST HCP).

When asked about the consultation:
- 93% (37/41) reported being provided with the '*right amount*' of information to help them manage their diabetes.
- 88% (36/41) reported having enough time to discuss their diabetes care and treatment.
- 78% (32/41) responded 'Yes, *definitely*' to being involved as much as they wanted to be in discussions about their diabetes care and treatment and 20% (8/41) responded '*Yes, to some extent*'.
- 73% of survey respondents responded '*definitely*' feeling more confident about managing their diabetes after seeing the HCP and 22% (9/41) responded feeling more confident 'to some extent'.
- 56% felt the HCP had '*definitely*' asked them how their diabetes impacted on their everyday life with a further 27% indicating this had happened to '*some extent*'.
- 82% reported being informed who to contact if they had any concerns following their appointment.

In response to the 5 item CARE person-centred measure the majority of the 41 survey respondents rated the HCP as excellent/very good at making them feel happy and relaxed (91%), asking questions/letting them talk (85%), listening to and understanding them (88%), explaining things (88%), and making a plan (88%).

Of the 33 survey respondents who had attended a face-to-face appointment:
- 88% (29/33) reported waiting less than 15 minutes to see the HCP on the day of the appointment
- 76% (25/33) reported travelling less than 5 miles to attend the appointment.

Of the 29 survey respondents who reported having their first appointment within the last 6 months
- 69% (20/29) reported a waiting time of less than 4 weeks to see the HCP from time of referral.

Interviews
Nine out of the 31 survey respondents who consented to be contacted on the questionnaire were purposively selected to participate in a telephone interview (based on their age, gender, number of appointments attended and number of CST HCPs they had seen).

Interviewees also commented positively on:

- the accessibility of the service in terms of short waiting times both to attend their first appointment and on the day of their appointment and short distances to travel to attend their appointment.
- the provision of information during the consultation and being involved in discussions about their care.
- the level of support provided after and in-between consultations describing how they were provided with contact details of HCPs if they had any concerns/queries following the consultation and receiving follow-up calls from HCPs to see how they were getting on.

Qualitative feedback from interviewees also indicated that:

- consultations were person-centred with interviewees describing how they felt '*listened to*' and describing HCPs as '*friendly*' '*caring*' '*informative*' and '*easy to talk to*'.
- they perceived that communication between their general practice and the integrated care service and between the members of the CST was good.

Key Recommendations

- CSTs should be co-located to facilitate responsive patient care, delivery of joint/coordinated appointments, informal information-sharing, networking and relationship-building.
- It is vital that new CSTs are supported by administrative and IT infrastructure to ensure efficient service delivery. This was a key recommendation in terms of the wider roll-out of CSTs.
- The implementation of a shared clinical information system that supports integrated disease management across hospital and community should be prioritised as part of service upscaling.
- Where implementation of new models of care require changes to local care pathways, this should be done collaboratively with all aligned service at network, specialist hub and hospital level to ensure a seamless transition across all levels of care, ongoing service capacity and a patient centered service.
- There should be clear communication of new geographical boundaries and eligibility criteria for Community Healthcare Network and Specialist Ambulatory Care Hub services to all referrers, to limit ineligible referrals.
- Teams need time for service and process planning prior to service commencement*:*
  - Supporting and resourcing engagement of the CST with GPs and PNs is important to develop rapport, clarify referral processes, provide education, and to inform and facilitate new-service development and implementation.
  - Services should establish mechanisms for regular engagement with consultants and hospital-based specialist teams.

This is the first time diabetes specialist services have been delivered at CHN level. Despite the significant impact of the Covid 19 pandemic on the health service throughout this project, we successfully developed and implemented new diabetes CSTs and demonstrated feasibility and acceptability among stakeholders. The project has been selected by Sláintecare for mainstreaming under the Enhanced Community Care (ECC) Programme and will be scaled up and rolled out nationwide. The National ECC Steering Group values the learning from this project which will be used to inform the rollout of the ECC chronic disease specialist teams. It is hoped that the experience and learning shared in this report will also inform and support implementation at local level.

SECTION 1: DESCRIPTION OF THE PROJECT

In this section:

1.1 Background to the project

The prevalence of Type 2 Diabetes is growing year on year [1] [2] and with the right specialist support, most people with Type 2 Diabetes should have their care in the community setting. Although there have been significant advancements in community based diabetes services in Ireland over the last decade with the introduction of approximately 60 integrated care 'demonstrator' posts in diabetes nursing, dietetics and podiatry, significant gaps still exist. Multidisciplinary teams are rarely co-located and often their services cover different geographical areas making it difficult for them to work together to implement the Model of Integrated Care for Type 2 Diabetes [3].

1.1.1 Aim of the project

The aim was to pilot the introduction of a Community Specialist Diabetes Team (CNS, dietitian, podiatrist) in two community healthcare network (CHN) and evaluate its implementation from the perspectives of the specialist team, general practice staff and people with diabetes attending the service.

1.1.2 Funding and Governance

Funding was provided through the Sláintecare Integration Fund (2019). HSE Primary Care Strategy and Planning division in collaboration with the Integrated Care Programme for Chronic Disease and the National Clinical Programme (NCP) for Diabetes was responsible for the overall governance of this project. Local project governance was through the local project implementation teams (LPTs) reporting to a Central Project Team (CPT).

Central Project Team Chair & Vice-Chair:

Professor Sean Dinneen (Clinical Lead, NCP Diabetes & Consultant Endocrinologist at UHG) and Dr Diarmuid Quinlan GP (ICGP Diabetes Lead)

Members of the Central Project Teams

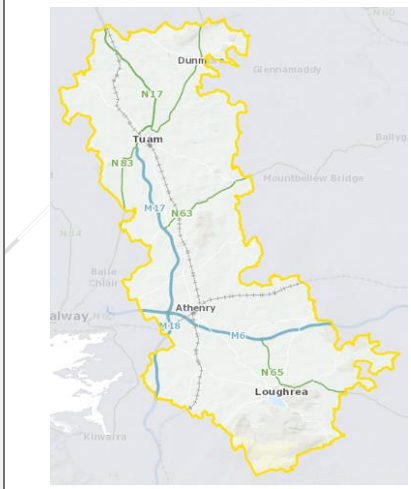
David Watterson (Podiatry Manager CHW), Lorna Hurley (Change Manager, Primary Care Strategy and Planning), Cliodhna O'Mahony (Programme Manager, NCP Diabetes), Andrea Devine (ADPHN CHW), Siobhan Woods (Chair of the LPT CHW), Katie Murphy (Chair of the LPT CKCH). Full membership in Appendix 1.

1.1.3 Project timeline

The original planned timeline for project delivery was September 2019 - September 2020 (12 months). However, due to the Covid 19 pandemic the project being paused for 6-months in March 2020, shortly after recruitment had commenced. When the project resumed, it ran from 1st September 2020 – 30th June 2021 (10 months) at which stage it was mainstreamed into the new Enhanced Community Care Programme.

1.2 Project sites

The two sites chosen by the NCP for this project (table 1) were purposively selected to represent different levels of diabetes care delivery at the hospital and primary care level.

Table 1: Description of project sites		
Site	**Community Healthcare West**	**Cork Kerry Community Healthcare**
	Network 7, **Tuam, Athenry, Loughrea Co. Galway** ***(this is a designated learning network)***	**Network 9** **North Cork City-Blarney, Co Cork**
Population (including social profile)	58,118 people	50,257 people
	Level of disadvantage = 19% (national average = 23%)	Level of disadvantage = 24% (national average = 23%)
	Level of unemployment = 5% (National average = 6%).	Level of unemployment = 7% (National averages = 6%).
General practices	11 GP practices, 40 GMS GPs	18 GP practices, 39 GMS GPs
	3 single handed practices 8 group practices	8 single handed practices 10 group practices
Orientation of diabetes care	Traditionally diabetes care in this areas has been hospital-focused and has only recently started to shift care more towards the community	For over a decade, there has been a strong focus on diabetes management in primary care, facilitated by DiGP which has over 83 practices enrolled.
Public outpatient clinics	University Hospital Galway (model 4) Wait time: >17 months** Distance from PCCs: 35-50 minutes	Cork University Hospital (model 4) Wait time: >17 months** Distance from PCC: 22 minutes
	Portiuncula University Hospital (model 3) Wait time: 3-6 months Distance from PCCs: 28-55 minutes	South Infirmary Victoria University Hospital (model 3) Wait time: 7-12 months Distance from PCC: 22 minutes
Network Map		

**Diabetes in General Practice (DiGP) is a General Practice led initiative in Cork and Kerry whose aim is to provide a forum for GPs and practice nurses to ensure best practice in their management of diabetes in general practice through peer support, education and audit.*

*** O'Donnell M, Smyth N, Dinneen SF on behalf of the National Clinical Programme for Diabetes (2018). National Survey of Diabetes Care Delivery in Acute Hospitals.*

1.3 Setting-up the community specialist diabetes service

1.3.1 Staff recruitment

Six of seven staff members across both sites were successfully recruited, and all were in post by mid-November 2020. Recruitment campaigns for a CNS Diabetes in Network 9 CKCH were unsuccessful. With support from the Nursing and Midwifery Professional Development unit, a new campaign was launched for a CNM2 Diabetes (with a CNS pathway). This post was successfully filled at the end of the project.

Bernie McDonnell (CNS Diabetes) and **Aoiffe Donnellan (Senior Dietitian)** at Athenry Primary Care Centre, CHN7, CHW

Rosemarie Roache (Senior Podiatrist) at Tuam Primary Care Centre, CHN7, CHW

Eoin O'Farrell (Senior Podiatrist) and **Sinead Mulcahy (Senior Dietitian)** at St Mary's Primary Care Centre, CHN7, CKCH

1.3.2 Eligibility Criteria to access the Community Diabetes Specialist Team

Using the Model of Integrated Care for Type 2 Diabetes [3] and the current and new (unpublished) Model of Care for the Diabetic Foot [4] [5] as key reference documents, and drawing on the experience of other integrated care staff in post nationwide, the eligibility criteria for the integrated care CNS, dietetic and podiatry services were defined and communicated with all general practices at face-to-face or virtual meetings (table 2). The team provided all practices with their mobile phone numbers, e-mail address, and highlighted their open door policy for telephone queries.

Table 2: GP referral / eligibility criteria for the Community Diabetes Specialist Team

CNS Diabetes (Integrated Care) Service*	- Your patient has type 2 diabetes and is on two or more glycaemic agents at maximum tolerated doses and glycaemic control remains out of target. - You require initiation of insulin or GLP1 for a patient with Type 2 Diabetes. - You require a review of the patients' insulin regimen. - You are concerned about a patient with type 2 diabetes who is a regular attendee to A&E with acute diabetes episodes. - You are concerned about hypoglycaemic unawareness and recurrent hypoglycaemia in a patient with type 2 diabetes. - Your patient has type 1 diabetes and has defaulted from the secondary care service.
Diabetes Podiatrist (Integrated Care) Service*	- Your patient has type 2 diabetes or type 1 diabetes and has been categorised on screening as moderate or high risk for diabetic foot disease (including those who have had a previous foot ulcer/amputation)
Diabetes Dietitian (Integrated Care) Service*	- Your patient has type 2 diabetes and elevated HbA1c and would like information and support regarding dietary modification and lifestyle management of type 2 diabetes - Your patient has been diagnosed as having pre-diabetes and would like information and support on lifestyle modifications to prevent progression to type 2 diabetes - Your patient has type 2 diabetes and would like support with weight management - Your patients has type 2 diabetes and has cardiovascular risk factors such as hypertension or dyslipidaemia - Your patient has type 2 diabetes and has impaired renal function *Note: on diagnosis of type 2 diabetes, patients should be referred by their GP to a local structured diabetes education programme and encouraged to attend.
***Note:** The Community Specialist Team accept referrals of both GMS and non-GMS patients.*	

1.3.3 Caseload planning

Introducing a new specialist service to an area can have an impact on existing primary care services. For that reason, the team engaged in a caseload planning exercise with dietetic, nursing and podiatry colleagues with the aim of agreeing care pathways, avoiding duplication and ensuring a seamless transfer of cases. Details are outlined in table 3.

During the time of project delivery, community healthcare networks had not yet 'gone live' and therefore other primary care services (e.g. community podiatry, community dietetics and 'demonstrator' integrated care CNSs and dietitians) were still operating according to their traditional boundaries. For that reason, the process of agreeing pathways with these aligned services was complicated.

Table 3: Caseload planning around existing services		
	Network 7 (Galway site)	**Network 9 (Cork site)**
Dietetian	Any patient on the existing community dietitian caseload and fulfilling the criteria for the diabetes dietitian were transferred to the SIF dietitian, with exception of two GP practices in the southern area of the network in which the dietitian had recently established joint CNS-dietitian clinics. As well as this inherited caseload, the SIF dietitian accepted all new referrals meeting her criteria *(except those from the two southern practices outlined above which were managed by the established dietitian*).	Any patient on the existing community dietitian caseload and fulfilling the criteria for the diabetes dietitian were transferred to the SIF dietitian. As well as this inherited caseload, the SIF dietitian accepted all new referrals meeting her criteria.
Podiatrist	Due to the existence of the School of Podiatry in NUIG and the training facility within community podiatry in Galway, all existing community podiatry services in the area were centralised and operated from Merlin Park Hospital. It was agreed by the local project team that the new SIF podiatrist would take all new eligible referrals from the CHN7 as well as eligible patients on the waiting list for Unit 3 Podiatry Service. This podiatrist did not inherit an existing caseload.	The Tynedale patient information system was searched for patients meeting the service eligibility criteria and residing within CHN9. This caseload was then managed by the SIF podiatrist as well as all new eligible referrals. This podiatrist therefore inherited a caseload, and also accepted all new referrals meeting the service criteria.
CNS	Two GP practices in the southern area of Network 7 had an established diabetes nursing service provided by the East Galway CNS Diabetes (Integrated Care). It was agreed that this service would continue to avoid disruption to the two GP practices and patients so the newly appointed SIF CNS promoted her new service to the remaining network practices.	As a contingency plan in CHN9, due to the lack of a SIF CNS, the local project team asked two existing diabetes CNSs to support the project delivery by a) joining the local project team b) engaging in regular team meetings with the podiatrist, dietitian and change manager d) supporting the delivery of health professional education in the network. c) facilitating integrated care delivery with dietetics and podiatry in their 9 network practices. These two CNSs had an established service in 9/18 general practices in the network and the remaining 9 practices did not have access to the CNS member of the Community Specialist Team.

1.4 Delivering the new community specialist service

1.4.1 Referring to the Community Specialist Team

The process by which new referrals were managed differed at both sites as outlined in Table 4.

Table 4: Referring to the Community Specialist Team

	Network 7 (Galway site)	Network 9 (Cork site)
Process for managing new referrals	In the absence of clerical support for any of the team members, the clinicians managed all the teams' referrals. The establishment of a **Healthlink** account for the team enabled e-referral to be accepted, thereby improving service efficiency. Referrals arrived electronically to a joint team e-mail address, were reviewed at a weekly **team triage meeting** (CNS, Dietitian and Podiatrist), and stored on the shared drive. The team had a rota for checking the e-mails regularly for urgent referrals. On creation of an appointment and a Diamond record for the patient, the referral letter was then uploaded on the patient's electronic Diamond record. Postal referrals were also accepted.	The process for referring to the dietitian and podiatrist was via their respective service departments where they were reviewed and forwarded to the appropriate health professional. The community dietetic service accepts **Healthlink** e-referrals. Podiatry do not yet use Healthlink. The podiatry service accepted referrals on a bespoke **podiatry referral form** (e-mailed or posted) detailing foot-screening results. This was deemed important so that new referrals can be accurately triaged e.g. those with a high-risk foot would be prioritised and seen sooner than moderate risk. Referrals to the pre-existing CNS Diabetes were managed through the GP Practice. CNS clinics within GP practices were pre-scheduled, and the practice staff allocated appointments to patients as required.

1.4.2 Location of community diabetes clinics

The location of clinics is detailed in table 5. The geography of the network, availability of clinical space and accessibility for patients were all factors that influenced decisions on clinic locations.

Due to the Covid-19 pandemic, telephone/virtual appointments were offered during periods of public health restrictions. See appendix 2 for details of the impact of Covid 19 on project delivery.

Table 5: Location of community diabetes clinics

	Network 7 (Galway site)	Network 9 (Cork site)
Clinic sites	CNS, dietetic and podiatry clinics were delivered on a weekly basis in Tuam, Athenry and Loughrea Primary Care Centres. Rooms were booked 6 weeks in advance, as per PCC policies. The team coordinated their clinic schedules so that nursing, dietetic and podiatry clinics could be delivered side-by-side on a regular basis to facilitate care integration.	Podiatry and dietetic clinics were delivered in St Mary's Primary Care Centre. Where appropriate coordinated appointments were provided so the patient could attend both services on the same day. All pre-existing CNS clinics were delivered in GP practices for patients from these practices. Two CNSs provided this service to nine GP practices in the network prior to and during the SIF project. A further nine practices in the network did not have access to a CNS due to the recruitment difficulties.

1.4.3 Patient clinical records

In the absence of a national electronic health record, primary care services nationally tend to use paper-based records which are transported from site to site and stored securely in primary care centres. In a number of CHOs, some services (e.g. podiatry / physiotherapy) have moved to electronic patient records. Some hospital OPD clinics use disease specific clinical information systems (e.g. some diabetes services use Diamond Clinical Information System) but these have not yet been expanded into the community. Table 6 outlines the types of patient records used by members of the Community Specialist Teams in this project.

Table 6: Patient clinical records

	Network 7 (Galway site)	Network 9 (Cork site)
Patient clinical records	As part of this project, we piloted the expansion of the Diamond Clinical Information System in UHG OPD to diabetes clinics in primary care. Three new licences were secured from Hicom for each of the team members. A new patient record was created on Diamond for all new patients attending the community specialist team. Ongoing support was required from the administration team in UHG to add new patients to the system, as this must be done through Diamond's interface IPMS. Patients known to the diabetes service in UHG already had a case file on Diamond and this could be accessed and updated in primary care. Clinic notes were typed directly into each patient's Diamond record during community clinics, and the team could view laboratory results and upcoming OPD appointments on the patient's Diamond case file. In the absence of a dedicated scheduling system for community clinics, the team also used Diamond as a temporary scheduling system for their clinics. It was used to generate batch appointment letters for clinics and generate reports and prescription requests for GPs / referrers.	Tynedale is the clinical information system used by community podiatry service in CKCH, the community dietetic service uses paper records, while the pre-existing CNS Diabetes access patient records via each GPs practices management system when onsite delivering clinics. In the podiatry service, all new podiatry referrals are added to Tynedale by the department administrator, and clinical notes are entered directly into Tynedale by the podiatrist during community clinics. As part of this project, we attempted to pilot the expansion of Tynedale to other members of the Community Specialist Team. We developed new nursing and dietetic pages in the system in January 2021 and the dietitian started using the system as the clinical information system. At the outset of the project we anticipated that the majority of the patients in the network would be attending the community podiatry service and would already be on the system. However, this was not the case and in March 2021, the pilot was ceased due to extra administrative burden on the dietitian who reverted to using paper records. As we were unsuccessful in recruiting a CNS, a pilot of Tynedale use by the CNS could not take place within the timeframe of the project.

1.4.4 Care integration and communication across levels of care

A variety of different media were used to communicate with fellow healthcare professionals across primary and secondary care regarding patient management (Table 7). These included Healthmail, internal HSE e-mail, post, telephone, the 'task' function in Diamond as well as face-to-face meetings and virtual MDT case discussion meetings.

Table 7: routine modes of communication between health professionals

	Network 7 (Galway site)	Network 9 (Cork site)
Shared clinical information system	All diabetes clinics, in primary care centres and in the hospital, shared the same patient information system called 'Diamond'. Patients seen in the hospital could be followed up, as required, by the Community Specialist Team and all clinicians had access to all diabetes records. The task function on Diamond allowed the Community Specialist Team and the hospital team to communicate regarding patient management.	
Routine clinic letters	Clinic letters were generated on Diamond and posted to the patients GP, or if considered urgent, letters were sent by Healthmail and followed up with a phone call. A copy of the GP letter was automatically saved to the patient Diamond record. In the absence of dedicated clerical support, one day each week, per clinician, was ring-fenced for administrative duties.	The podiatrist and dietitian generated clinic letters to communicate with GPs and send these by post (if non-urgent) or healthmail (if urgent). A copy of the letter was stored in the patients file (i.e. Tynedale for Podiatry and paper record for dietetics). In the absence of clerical support, the dietitian ring-fenced one day each week for administrative duties.
Integration with the hospital-based specialist team	Three consultants Endocrinologists (2 at UHG and 1 at PUH) participated in fortnightly virtual MDT case discussion meetings with the Community Specialist Team. These meetings provided an opportunity for the Community Specialist Team to present complex cases and seek advice regarding case management, thereby avoiding unnecessary OPD referrals or facilitating fast-track access to the OPD clinic for more urgent cases. This forum was open to all integrated care diabetes staff in Co Galway. The CNS Diabetes worked 20% in the diabetes OPD clinic in UHG and the podiatrist works 20% in the hospital based complex foot clinic (Merlin Park Hospital / UHG). This arrangement facilitated face-to-face case discussions with the hospital-based team, and maintenance of skills in managing those with complex diabetes.	The podiatrist worked 20% with the vascular team in the Mercy University Hospital (MUH), delivering a podiatry service to those with active foot disease, with an agreed care pathway with the specialist podiatry service in CUH and referral to the endocrinology service in SIVUH in line with the model of care. While there was no SIF CNS recruited, the two existing CNSs (non-SIF) worked with 9/18 practices in the network. They worked 20% in the hospital based OPD (one post attached to CUH and the other to SIVUH). This arrangement facilitated face-to-face case discussions with the hospital based specialists and maintenance of skills in managing complex diabetes.

GP Prescriptions / Medication changes	All CNS clinics took place in HSE Primary Care Centres. When a prescription was required, the CNS communicated this to the GP letter using either post (if not urgent) or Healthmail plus phone call (if urgent). The prescription would be sent electronically to the patient's pharmacy for collection. For insulin initiation, education would be provided at the CNS appointment using a water pen, the patient would then collect their prescription and the CNS would review the patient a few days after initiation.	As per established practice in CKCH, all non-SIF CNS clinics took place within GP practices. This facilitated education and discussion with GPs and Practice Nurses regarding medication changes. Prescriptions would then be sent to the pharmacy for collection by the patient. For insulin initiation, the CNS would usually return later (as her schedule allowed) for the insulin initiation and education.

1.4.5 Patient education and self-management support

A patient education plan was developed by the Community Specialist Teams, with reference to local SMS directories, to ensure consistency in educational materials provided by the team, and in signposting to relevant services/resources. Referral to these self-management programmes was actively promoted in line with National Framework for Self-Management Support for Chronic Conditions [6].

Table 8: Structured self-management education programmes

Network 7 (Galway site)	Network 9 (Cork site)
Both the SIF Dietitian and CNS trained as DESMOND educators. DESMOND was offered to all eligible patients with Type 2 Diabetes. Due to Covid 19, only virtual delivery was available during the project timeline. For practical reasons, this virtual programme (which required additional training) was delivered by a small team of experienced DESMOND educators and on a countywide basis. Those that preferred self-directed online learning were signposted to the Diabetes Ireland SMART course. The peer-support programme 'Living Well with Chronic Illness' was also available to people from the CHN. This was delivered virtually due to the Covid 19 pandemic and patients were signposted to this programme as appropriate.	The SIF Dietitian trained as a Discover Diabetes educator and received peer support with initial delivery. This programme was offered to all eligible patients from the Network. Due to Covid 19, only virtual delivery was available and this was on a countywide basis. Those that preferred self-directed online learning were signposted to the Diabetes Ireland SMART course. Where relevant, patients were signposted to Project Weight-loss, which was another Sláintecare funded project in Cork.Social prescribing was available within the network, and where relevant patients were signposted to this service.

1.4.6 Health professional CPD in diabetes

At the beginning of the project, teams at both sites developed a Health Professional Education Plan for delivery over the project timeline. Due to Covid 19, face to face education sessions were limited and alternatives, such as virtual webinars/education meetings had to be explored. Educational initiatives delivered included:

- Practice Nurse Educational Webinar held in CHN9 (Cork) (n=11);
- Education packs sent to all practices across both sites comprising hard copies and PDFs of latest diabetes guidelines and a laminated foot screening poster
- A training workshop delivered to public health nurses in Network 9 in Dec 2020 (n=6)
- Sponsorship of 5 practice nurses from CHN 7 to participate in the NUIG Diabetes in Primary Care Module
- Sponsorship of 1 GP and 1 Dietitian from the CHN 9 (Cork) on UCC Diabetes in Primary Care Module
- Educational presentations delivered during practice visits by both teams.
- Case study presentations delivered to the hospital-based diabetes specialist team at UHG.
- Shadowing opportunities provided at clinics for practice nurses (n=2) and a nursing student (n=1)
- An educational workshop was delivered by the Community Specialist Team at the National Diabetes Integrated Care Conference in October 2021 (est. n=50 GPs and Practice Nurses).
- All practices in both networks were informed about the launch of the new HSeLanD module on the Nursing Management of Adults with Type 2 Diabetes (April 2021).

SECTION 2: PROJECT EVALUATION

In this section:

2.1 Summary of Methods

To assess implementation from different perspectives, a mixed methods approach was used, involving quantitative and qualitative data collection among healthcare professionals (the Community Specialist Team and general practice) and people with diabetes. Ethical approval to conduct the evaluation was obtained from the Clinical Research Ethics Committees of the Galway University Hospital and UCC Research Ethics Committee.

2.1.1 Data collection from the Diabetes Community Specialist Team (CST)

Activity data

Data on each clinician's activity for a 6-month period (December 2020 to May 2021) and data on their active caseload (two 3-month periods) were analysed. Team members maintained activity data on numbers of patients seen (new and return), number of appointments (and whether face to face or by telephone), number of education sessions delivered, number and type of referrals.

Interviews

In July 2021, semi-structured interviews were conducted with the CST and a pre-existing non-SIF CNS in CHN9, as well as the project change manager. Interviews were conducted to elicit participants' views on the acceptability, and practicality of implementing the integrated care service, including key challenges (barriers and facilitators) to implementation in practice. Interviews were analysed using the Consolidated Framework for Implementation Research (CFIR), a conceptual framework commonly used in implementation research to systematically identify and group factors which influence the implementation of health service interventions.[3]

2.1.2 Data collection from General Practice

Survey & interviews

All general practices in CHN7 (n=11) and CHN9 (n=18) were asked to complete a survey (administered via post and email) on current diabetes care delivery at their practice, including access to specialist diabetes services and allied health services. The survey was administered in December 2020- January 2021 during the early stages of service implementation. See survey in appendix 5.

Focus groups and interviews were conducted with GPs and practice nurses on their experience of delivering diabetes care and linking in with the Community Specialist Team (July-August 2021).

2.1.3 Data collection from people with diabetes

Survey & interviews

A mixed methods approach using postal questionnaires and telephone interviews was used to elicit patient experiences of the service. Questionnaires were posted out to people with type 2 diabetes

who had attended a member of the CST during the first 2 weeks in May 2021. Respondents were asked also to provide their contact details if they were willing to take part in a follow-up telephone interview about their experience. No reminder was sent to non-responders.

Nine respondents were purposively selected (based on age, gender, diabetes duration, source of referral, number of HCPs attended and number of visits) from those were willing to take part in a short follow-up telephone interview. Interviews explored their experience of attending the community integrated care in greater detail

2.1.4 Data analysis

All data were analysed separately using appropriate techniques. Further details on the methods are available in Appendix 3. Key themes and lessons were developed from each data source. Quantitative and qualitative data are integrated in the discussion section to achieve a comprehensive, multi-perspective evaluation of the integrated diabetes care service.

2.2 Results

2.3.1 Podiatry Activity and Caseload Profile

Over a 6-month period, in total 516 patients (new and return) were seen by podiatry in CHN7 (Galway site) and CHN9 (Cork site), an average of 48 (SD16) patients per month in CHN7 and 46 (SD13) patients per month in CHN9 (**Table 9**).

Table 9: Podiatrist 6-month activity (total and mean or median per month) December 2020 – May 2021

	CHN7, Galway		CHN9, Cork	
	Total (%)	Mean/ month (sd)	Total	Mean/ month (sd)
Patients seen in community				
New patients	138 (48%)	23.8 (9.9)	12 (4%)	2.0 (0.9)
Return patients	151 (52%)	25.2 (15.4)	265 (96%)	44.2 (12.6)
Total (new + return)	**289**	**48.2 (15.5)**	**277**	**46.2 (12.9)**
1:1 hospital clinic patients	0[§]	0 (0)	49	8.2 (3.5)
Episodes				
F2F appointments	260	43.3 (26.5)	294	49.0 (12.6)
Phone appointments	46	7.7 (12.2)	29	4.8 (10.9)
Total appointments	**306**	**51.0 (19.7)**	**323**	**53.8 (13.6)**
DNA	20 (5%)	3.3 (4.5)	17	2.8 (1.0)
CNA	38 (10%)	6.3 (4.9)	25 (7%)	4.2 (1.7)
Case consultations with hospital team	3 (1%)	0.5 (1.2)	0 (0%)	0 (0)

[§] *Due to the pandemic, the SIF podiatrist in Galway was redeployed to provide backfill one-day per week in the community and therefore did not commence the hospital-based clinic until April 2021 (and activity data was not collected).*

New vs return patients over time (activity data)

The balance of return to new patients differed substantially between sites (Figure 1), with 138 new patients seen in CHN7 (Galway) and 12 new patients CHN9 (Cork) (Cork) respectively in the same 6-month period.

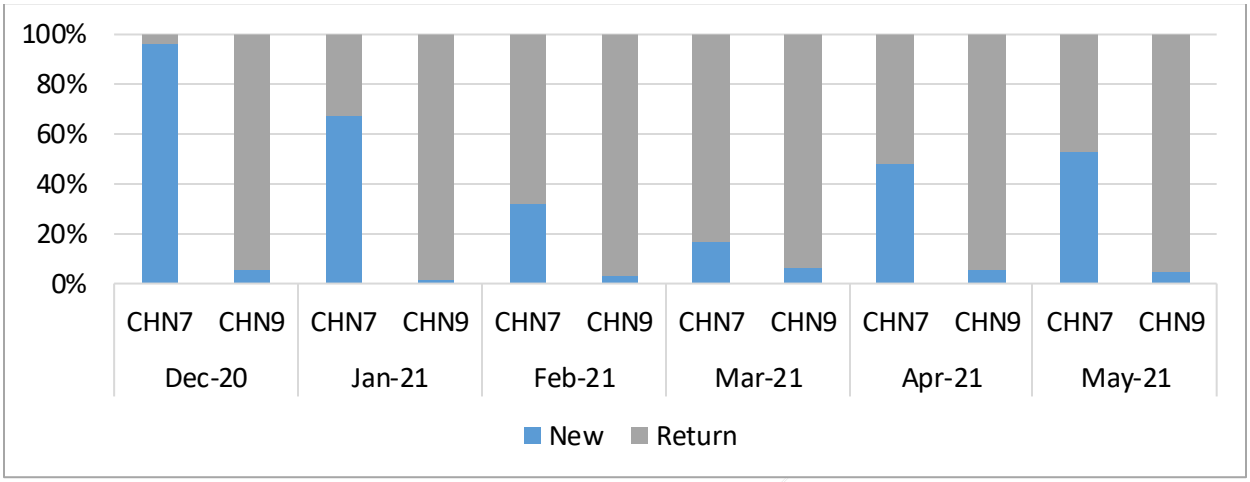


Figure 1 Proportion of new and return patients seen each month by podiatrists

Onward referrals (activity data)

In CHN7 (Galway) the majority (70%) of all onward referrals were to the orthotist, 18% were to the dietitian and 6% were to the hospital podiatrist. In CHN9 (Cork), 45% of onward referrals were to the dietitian, 20% were to the orthotist, and 16% were to the hospital podiatrist. The higher rate of referral to the hospital podiatrist in CHN9 (Cork), likely reflects the higher proportion of high risk and in-remission patients on this podiatrists' caseload (Table 10).

Table 10: Podiatrist 6-month activity (onward referrals and education) December 2020 – May 2021

	CHN7 (Galway), Galway		CHN9 (Cork), Cork	
	Total	Median (range)	Total	Median (range)
Onward referrals made by the Podiatrist				
CNS Integrated Care	1	0 (0-1)	0	0 (0)
Dietitian	6	1 (0-2)	31	5 (3-10)
Orthotist	23	4 (1-7)	14	3 (0-4)
PHN	1	0 (0-1)	9	2 (0-4)
Hospital Podiatrist	2	0 (0-2)	11	2 (0-4)
Vascular Service (via GP)	0	0 (0)	1	0 (0-1)
Dermatology Service(via GP)	0	0 (0)	2	0 (0-1)
Other	0	0 (0)	1	0 (0-1)
Total onward referrals	33		69	

Profile of Podiatry Caseload (caseload audit)

In terms of active caseload assessed every 3 months, patients on the podiatrist caseload in CHN9 (Cork) were on average older (Table 11). The number of people with diabetes on the waiting list increased in both sites between February and May 2021. The average waiting time increasing in CHN7 (Galway). Waiting times were not available for the Cork site.

In both sites, most patients on the caseload were referred from general practice. While the CNS Diabetes was also a main referral source for podiatry in CHN7 (Galway) [22% in CHN7 (Galway) vs 3% in CHN9 (Cork)], in CHN9 (Cork), the other main source was hospital podiatry [19% in CHN9 (Cork) vs. 4% in CHN7 (Galway)]. See figure in appendix 4. The risk profile of people with diabetes in each site differed, with a greater proportion of 'in remission' or high-risk seen in CHN9 (Cork) compared to CHN7 (Galway) (Figure 2).

Table 11: Podiatrist 3-monthly active caseload for Dec 2020 –February 2021 and March 2021 - May 2021

	CHN7 (Galway) CHW		CHN9 (Cork) CKCH	
	Dec-Feb (N=116)	March-May (N=190)	Dec-Feb (N=218)	March-May (N=264)
Profile	N (%)	N (%)	N (%)	N (%)
Male	71 (61)	126 (66)	144 (66)	175 (66)
Average age	68	58	72	73
GMS/GPVC	96 (83)	161 (85)	210 (96)	254 (96)
Type 1	4 (3)	5 (3)	9 (4)	9 (3)
Type 2	112 (97)	185 (97)	208 (95)	255 (97)
Other diabetes	0 (0)	0 (0)	1 (0.5)	1 (0.5)
Waiting list, N	35	47	25	40
Average time on waiting list (weeks)	3.7	6.5	NR	NR
N patients on the discharge register	1	5	0	0
Foot risk status after assessment				
Moderate	91 (78)	130 (68)	42 (19)	46 (17)
High	16 (14)	40 (21)	75 (34)	88 (33)
In-remission	6 (5)	17 (9)	93 (43)	115 (44)
Active foot disease	3 (3)	3 (2)	8 (4)	15 (6)
Referral source				
GP/practice nurse	31 (27)	78 (41)	142 (65)	153 (58)
CNS Diabetes	25 (22)	42 (22)	5 (2)	7 (3)
Dietitian (integrated care)	4 (3)	4 (2)	0 (0)	0 (0)
Vascular team	0 (0)	0 (0)	15 (7)	17 (6)
Hospital podiatrist	2 (2)	8 (4)	42 (19)	51 (19)
PHN	3 (3)	6 (3)	1 (0.5)	21 (8)
Community Podiatry waiting list (original referral source not available)	51 (44)	52 (27)	13 (6)	15 (6)
Practices referring	11/11	11/11	20/23	21/23

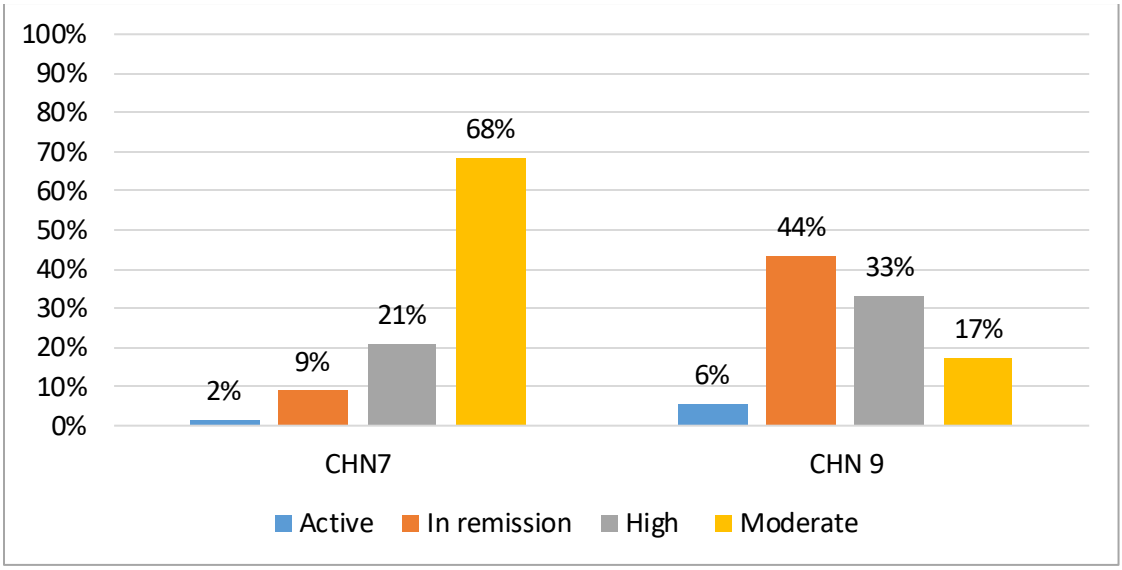


Figure 2 Foot risk profile of podiatry caseload (May 2021) in CHN7 (Galway) and CHN9 (Cork)

2.3.2 Dietitian Activity and Caseload Profile

Overall, 435 patients (new and return) were seen by dietitians (2.0 WTEs) in the 6-month period across the two sites, on average 34 (9) patients per month in CHN7 (Galway) and 39 (11) per month in CHN9 (Cork) (**Table 12**). The balance of return to new patients was similar between sites, with both sites seeing a greater proportion of new patients earlier (December 2020) and later (May 2021) in the evaluation period, likely reflecting the lifting of Covid 19 restriction during these periods (**Figure 3**).

Table 12 Dietitian 6-month activity (total and mean or median per month) December 2020 – May 2021				
	CHN7 (Galway), CHW		CHN9 (Cork), CKCH	
	Total	Mean/ month (sd)	Total	Mean/ month (sd)
Patients seen in community				
New patients	88 (44%)	14.7 (7.8)	81	13.5 (6.0)
Return patients	113 (56%)	18.8 (8.5)	153	25.5 (10.6)
Total (new + return)	**201**	**33.5 (9.2)**	**234**	**39.0 (10.5)**
Episodes				
F2F appointments	35	5.8 (7.6)	73	12.2 (12.5)
Phone appointments	168	28.0 (14.3)	162	27.0 (14.9)
Total appointments	**203**	**33.8 (8.4)**	**235**	**39.2 (10.6)**
DNA	17 (7%)	2.8 (3.4)	39	6.5 (2.9)
CNA	23 (9%)	3.8 (4.5)	44	7.3 (2.4)
Case consultations with hospital team	7 (3%)	1.2 (0.8)	0 (0%)	0 (0)

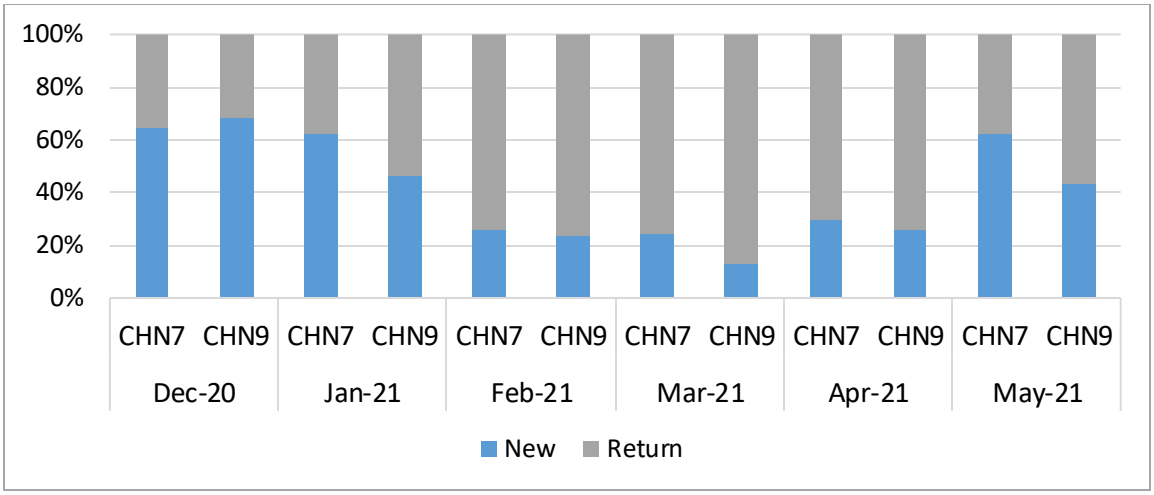


Figure 3 Proportion of new and return patients seen each month by dietitians in CHN7 (Galway) and CHN9 (Cork)

Onward referrals and delivery of self-management education by the SIF Dietitians (activity data)

In general, there were few onward referrals made by the dietitians [n=10 in both CHN7 (Galway) and CHN9 (Cork)]. This may reflect the profile of patients attending the dietetic service i.e. more with newly-diagnosed and people with pre-diabetes and hence less with complicated diabetes. Of those onward referrals made, most were to the CNS in CHN9 (Cork) and podiatrist in CHN7 (Galway) (**Table 13)**.

Table 13: Dietitians 6-month activity (onward referrals and self-management education) Dec. 2020 – May 2021

	CHN7 (Galway), CHW		CHN9 (Cork), CKCH	
	Total	Median (range)	Total	Median (range)
Onward referrals made by the dietitian				
CNS Integrated Care	2	0 (0-2)	7	1 (0-3)
Podiatrist	6	1 (0-2)	2	0 (0-1)
Hospital dietitian	2	0 (0-1)	1	0 (0-1)
Structured patient education				
F2F courses				
Courses completed	0	0 (0)	0	0 (0)
Virtual courses				
Courses completed	0*	0 (0)	1	0 (0-1)
People who completed course	0	0 (0)	9	0 (0-9)
DSME group sessions delivered	0	0 (0)	5	1 (0-2)
Total patient contacts during course	0	0 (0)	36	0 (0-18)
Total family members/carers who attended	0	0 (0)	4	0 (0-3)
People taking part in follow-up session	0	0 (0)	0	0 (0)
**DSME courses in CHW were delivered by other experienced educators and not the SIF dietitian*				

Profile of dietetic caseload (caseload audit)

In terms of active caseload, the profile of patients on the dietitian caseload in both sites were similar, albeit in CHN9 (Cork) there was a greater mix of type 2 diabetes and pre-diabetes (71% and 28% respectively) compared to CHN7 (Galway) (97% and 3% respectively) (**Table 14**).

The number of patients on the waiting list and wait times increased in both sites between February and May 2021. At both sites, patients were being actively discharged back to their GP, with the number of patients on the discharge register increasing over.

In both sites, most patients on the caseload were referred from general practice. The CNS Diabetes was also a main referral source to the dietitian in CHN7 (Galway) (13% of all referrals) but not in in CHN9 (Cork) (2%), where the other main source was hospital dietetics (11%). See figure in appendix 4.

Table 14: Dietitian 3-monthly active caseload for Dec-February and March-May 2021

	CHN7 (Galway) CHW		CHN9 (Cork) CKCH	
	Feb (N=132)	May (N=180)	Feb (N=116)	May (N=126)
Profile	N (%)	N (%)	N (%)	N (%)
Male	76 (58)	103 (57)	52 (45)	68 (54)
Average age	67	65	58	60
GMS/GPVC	NR	NR	88 (76)	90 (71)
Type 1	0 (0)	0 (0)	1 (1)	1 (1)
Type 2	126 (95)	174 (97)	77 (66)	90 (71)
IGT/IFG (Pre-diabetes)	6 (5)	6 (3)	38 (33)	35 (28)
Other diabetes	0 (0)	0 (0)	0 (0)	0 (0)
Waiting list, N	10	16	50	93
Average time on waiting list (weeks)	2.8	4.0	5.6	6
Discharge register	22	41	8	67
Referral source				
GP/practice nurse	75 (57)	113 (63)	102 (88)	99 (79)
CNS Diabetes	22 (17)	24 (13)	2 (2)	2 (2)
Referred/transferred by hospital dietitian	4 (3)	4 (2)	8 (7)	14(11)
Podiatrist (integrated care)	9 (7)	11 (6)	4 (3)	8 (6)
PHN	8 (6)	8 (4)	0 (0)	0 (0)
Other referral source	14 (11)	16 (9)	0 (0)	3 (2)
Practices referring	8/8	8/8	14/19	16/19

2.3.3 Clinical Nurse Specialist Activity and Caseload Profile

Data on patients seen (total and new) were collected by all 4 CNS, both SIF (n=1 in CHN7 (Galway)) and non-SIF CNS (n=3; 1 in CHN7 (Galway), and 2 in CHN9 (Cork)) at both sites. Data on appointments, onward referrals, and patient and professional education were collected by the SIF CNS in CHN7 (Galway) and one non-SIF CNS in CHN9 (Cork); however, these CNS differed in the total number of practices they attended within the network and so were not compared. Lastly, data on patient caseload were only collected by the SIF CNS in CHN7 (Galway).

New v's return patients (activity data)

Overall, 545 patients (new and return) were seen by CNS in CHN7 (Galway) and CHN9 (Cork) over the 6-month period, on average 49 (13) patients per month in CHN7 (Galway) and 86 (14) per month in CHN9 (Cork). The balance of return to new patients was similar between sites (**Figure 4**), albeit with a greater proportion of new patients being seen in CHN9 (Cork) in December 2020, and by established CNS service (non-SIF) in CHN7 (Galway) overall (**Table 15**).

Table 15: 6-month activity (total and mean per month) for all CNS (SIF and non-SIF) December 2020 – May 2021 covering 11 practices (CHN7 (Galway)) and 9 practices (CHN9 (Cork))

	CHN7 (Galway) CHW				CHN9 (Cork) CKCH	
	SIF CNS n=1 CNS; 8 practices		Established CNS service n=1 CNS; 3 practices		Established CNS service n=2 CNS ; 9 practices	
Patients seen in community	Total	Mean/month (sd)	Total	Mean/month (sd)	Total	Mean/month (sd)
New patients	69 (24%)	11.5 (2.7)	72 (49%)	12.0 (7.5)	23 (21%)	3.8 (3.5)
Return patients	221 (76%)	36.8 (10.3)	74 (51%)	12.3 (6.3)	86	14.3 (9.4)
Total (new + return)	290	48.3 (8.8)	146	24.3 (12.8)	109 (79%)	18.2 (10.4)

Appointments and onward referrals (activity data)

Data on appointments and onward referrals are only shown for CHN7 (Galway) where a SIF CNS was recruited (**Table 16**).

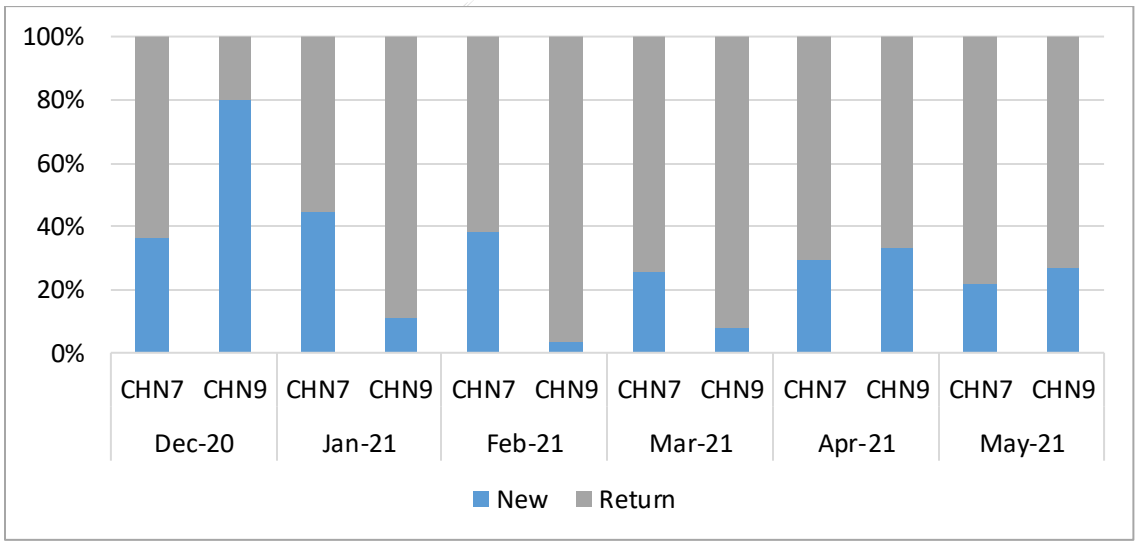


Figure 4 Proportion of new and return patients seen each month by CNS in CHN7 (Galway) and CHN9 (Cork)

Profile of CNS caseload (Caseload audit)

In terms of active caseload, the number of people with diabetes on the waiting list had increased between February and May 2021, with the average waiting time increasing from 2 weeks to 4 weeks (**Table 17**). Most patients on the caseload were referred from general practice (84%). See figure in **appendix 4**.

Table 16: SIF CNS 6-month activity (total and mean or median per month) for December 2020 – May 2021 covering 8 practices in CHN7 (Galway), CHW

	Total	Mean per month (sd)
Episodes		
F2F appointments	148	24.7 (19.2)
Phone appointments	141	23.5 (16.4)
Total appointments	289	48.2 (8.7)
DNA**	20 (6%)	3.3 (1.9)
CNA	20 (6%)	3.3 (1.9)
Case consultations initiated by GP***	10 (3%)	1.7 (1.5)
Case consultations with hospital-based team***	56(19%)	9.3 (2.8)
	Total	Median (range)
Onward referrals made by the CNS		
Dietitian (IC)	17	3 (1-5)
Podiatrist (IC)	29	5 (2-6)
Diabetes OPD (via GP)	1	0 (0-1)

***% of total referrals = F2F + Phone + DNA + CNQA ; ***% of total patients = new + return for SIF CNS only*

Table 17: CNS active 3-monthly caseload for Dec-February and March-May 2021 in CHN7 (Galway)

	Feb (N=93)	May (N=130)
Profile	N (%)	N (%)
Male	54 (58)	69 (53)
Average age	66	68
GMS/GPVC	NR	NR
Type 1	1 (1)	3 (2)
Type 2	91 (98)	127 (98)
Other diabetes	0 (0)	0 (0)
Waiting list, N	9	10
Average time on waiting list (weeks)	2	4
Discharges (in the 3 month audit period)	4	10
Attending OPD diabetes service	31 (33)	48 (37)
Referral source		
GP/practice nurse	62 (67)	109 (84)
Dietitian (IC)	9 (10)	2 (2)
Podiatrist (IC)	2 (2)	1 (1)
PHN	5 (5)	0 (0)
Hospital OPD team	10 (11)	15 (12)
Heart Failure CNS	5 (5)	3 (2)
Practices referring	8/8	8/8

2.3.4 Findings from interviews with the Community Specialist Team (Diabetes)

Seven HCPs (2 podiatrists, 2 dietitians and 3 CNSs (two of whom are non-SIF CNSs) were interviewed along with the change manager. Barriers and facilitators to implementing core components of the integrated care service at both sites are discussed in the text with supporting quotes. Factors influencing implementation at each site, including the impact of COVID-19, are outlined in **Table 18.**

A. Quality of networking, leadership, and engagement

Networking between team members

Team members in both sites highlighted the quality of networking and communication, for example, *'knowing how to get hold of the person'* (CNS#2) or '*who to ask'*, and the capacity to link with team members by phone or email or in a shared space, as a key facilitator of delivering the integrated care service. Networking in this way facilitated the team to arrange joint appointments, and to feel comfortable sharing knowledge about patients, to '*talk through anything'*. This included knowledge about how things worked in the community (e.g., best approach to refer to CNS). This was particularly beneficial for clinicians coming from hospital background as their colleagues could '*fill in gaps*' (CNS#1). In CHN7 (Galway), networking via a team triage was an important factor which enabled *'huge learning'* (CNS#1) as they drew on experiences and information from one another, and it facilitated booking joint appointments. Triage was good opportunity to reflect on patient care to *'stand back from a situation, it's easier to come up with a solution'* (Podiatrist#2). The change manager echoed some of these perspectives, citing the '*bond*' between team members that was enabled by co-location, and the '*informal chats'* that might not be scheduled but are an opportunity to '*bounce something off*' another clinician.

> *"You know the people you are referring to, even to just know the face of the dietitian, you know where the dietitian is, and then with the podiatrist, you have a face on the podiatrist, and you know the podiatrist you're referring to. And I think that makes it a lot easier. Rather than just randomly writing a referral and sending it to a general address for someone" (CNS#2)*

Team members at both sites recommended taking time at the start of the service to jointly plan and prepare; to *'get the process and structure [of the service] all clear'* (Podiatrist#2) before seeing patients (e.g., triage, planning and deciding workflows, checking how other services are run, what policies they have, having an '*early conversation'* (Dietitian#1) e.g. about the best way for dietitian to refer to a CNS etc.

Leadership

Leadership from the local project team and the change manager was flagged as facilitator in both sites, providing guidance on monitoring (CHN7 (Galway)), how to work as a team (CHN9 (Cork)), and '*iron out'* (Podiatrist#2) issues to do with patient caseload (CHN7 (Galway)). The change manager also spoke about being '*hands on',* driving the implementation of the project through weekly project meetings '*to keep the momentum going on a week-to-week basis*'. In CHN9 (Cork), one clinician

highlighted the need for local shared leadership, as on occasion there were conflicting opinions between managers on how the intervention should work.

Leadership from consultant endocrinologists was valued by the team in CHN7 (Galway) where they engaged in fortnightly MDT case discussion meetings with the CST. These meetings facilitated access to consultant clinical support and guidance and fast-track access to secondary care when needed (see case study C in appendix 7).

Engaging GPs and Practice Nurses

At both sites, engaging key stakeholders facilitated implementation, specifically supporting the team to manage referrals. For example, in CHN7 (Galway), the team engaged with the Network GP to decide how best to format the referral form to facilitate joint referrals and subsequent triage. In CHN9 (Cork), the team generated rapport with GPs via online meetings, which meant that GPs understand the service and how to access it, subsequently making it easier to link in with them about referrals

These meetings also '*allowed for an element of upskilling*' (Dietitian#1), facilitating education, giving GPs someone to ask questions of and to get training from. This education/training was particularly important given clinicians at both sites received inappropriate referrals and needed to engage with practices to provide guidance. Sometimes these referrals were accepted with clinicians recognizing the GP may be busy (particularly due to COVID-19), with the CNS seeing it as a better use of the service to ensure the patient '*gets educated on diabetes rather than getting fussy about the actual criteria*' (CNS#2). The '*tendency*' to accept inappropriate referrals, and the downstream impact on capacity, was flagged by the change manager as a barrier. This was perceived to be a consequence of the desire to be '*so patient-centred that is very hard to say no*' but recognising it as an important challenge to the sustainability of the service.

> *"I suppose the other learning is it's just really important to engage with the GP practices. They were very happy to have I think like designated people that they can approach if they've any queries or I suppose just upskilling practices on referral criteria and referral forms and stuff like that. It really helps them understand."* (Podiatrist#1)

B. Availability of resources

Benefit of shared space

At both sites the availability of shared physical space facilitated a team approach to care delivery, enabling the team to meet patient needs. Specifically, shared space was important to facilitate '*untimed meetings*' (Dietitian#1) to become familiar with other clinicians on the team and related clinicians (e.g., Integrated Care Programme for Older Persons in CHN7 (Galway)), and to access knowledge and information informally (e.g., discussing patients in the shared space). By virtue of shared space, both teams were able to arrange joint [CHN7 (Galway)] or sequential [CHN9 (Cork) and CHN7 (Galway)] appointments. These appointments were perceived to be beneficial for the person with diabetes by reducing cost (travel), improving accessibility if the individual had mobility issues, reducing the burden on them to repeat their medical history, and facilitating more intensive engagement to '*strike when the iron was hot*' (CNS#1) for people who may be difficult to engage in

their diabetes care. Clinicians in CHN7 (Galway) felt that by sitting in on each other's appointments, they benefited from the opportunity to build rapport with the patient and learn from one another, accessing discipline-specific knowledge. The incompatibility of the work processes of certain clinicians, the CNS (CHN9 (Cork)) and podiatrist (CHN7 (Galway)) which requires them to be '*out and about*' (CNS#3) at practices and clinics, was raised as a potential challenge to the co-located team approach.

- In CHN7 (Galway), a team approach was maintained by a '*transparent open relationship'* (CNS#1) between team members and 'daily' communication albeit remotely by phone or email on days when the podiatrist was visiting clinics.
- In CHN9 (Cork), with no CNS in place dedicated to the network, existing non-SIF CNS were conducting visits to a greater number of practices and therefore had less capacity to commit to a role on the CST in general. Therefore, off-site working was presented as a *potential* issue, something that should be considered in the future.

> *"It may be a case that the patient is referred, you know requested just for the nurse. But then when I see the patient, I see a gap in need for the dietitian to give out part of the care, and may, you know, come on also a foot issue during my examination of the feet. And then to have the luxury of having a dietitian on my right hand and on my left hand a podiatrist, I feel very equipped to deliver good diabetes care. And diabetes care for the patient, accessing this care in a very timely fashion on their doorstep, so it's very satisfying for the patient and likewise for me"* (CNS#1)

Lack of Administrative staff

The lack of administrative staff was flagged as a key barrier to implementation by team members at both sites, echoed by the change manager. It was evident that such resources would facilitate the implementation of several components of the integrated care service, enhancing team working, supporting management of referrals and coordination of appointments /patient education.

In terms of team working, at both sites administrative support was flagged as necessary to facilitate diary management of the team and set up joint appointments. In addition the administrative work involved in recruiting for structured education and issuing reminders was also flagged as a barrier to conducting patient education in CHN9 (Cork). The dietitian at this site anticipated administrative support might help with non-attenders and non-responders, as someone would be able to ring the person straight away and engage them (i.e., explain what invite is about and why it is important). It was felt that if the service was to be scaled up, then dedicated administrative support would be needed to facilitate the organisation of engagement/educational meetings with primary care practitioners.

> *"The one thing that I think is lacking in the project from the word get go was the lack of administrative support. You know now we do have some support, for just one hour a day, which is huge for us, but you know it's still inadequate for the needs, you know we are three clinicians with three diaries and so on so forth. So that takes a lot of time and that's very necessary work for the wheels to turn for each of us."* (CNS#1)

In CHN9 (Cork), the significant administrative work associated with data entry (i.e., uploading patient details for dietetics) to the Tyndale IT system, also limited the use of this system to support team working.

> *"I can really see the value of the idea that all of us would be able to log in to see each other's role and to work from it, but its more so the admin tasks of that so for each individual patient I trialled it [Tyndale] for a few weeks and it took about 50 minutes to input each patient, so a massive time effort really, a long time you'd need really to get it set up. So I think for any groups going forward that want to use Tynedale, really they will need admin support and get them each set up and if not, really continual admin support to kind of make it work"* (Dietitian#1)

Other resource gaps

Other gaps highlighted as barriers to implementation in CHN9 (Cork) were: the lack of a dedicated CNS in the network, which was considered a '*massive gap'* (Dietitian#1) as it hindered joint appointments and team work, particularly for the dietitian as they would tend to work closely with the CNS; access to consultant clinics due to long waiting lists for the hospital diabetes clinics and for vascular services.

In CHN7 (Galway) the lack of access to mental health services was flagged as an issue.

C. IT systems for care integration

The degree to which IT systems piloted as part of the project were (a) compatible with the diabetes Community Specialist Team's work processes, and (b) enabled information sharing and access, influenced the implementation of specific components: monitoring the service, working as a team, managing referrals, and conducting patient appointments.

In terms of **monitoring**, at both sites reports could not be generated automatically which necessitated manual workarounds. For example, in CHN7 (Galway) time was required to set up manual Excel functions to generate waiting lists and in CHN9 (Cork), the time required to manually input details of new patients details on Tynedale was flagged.

In terms of **working as team**, in CHN9 (Cork) the main IT barrier was the incompleteness of Tyndale (see *Administrative resources section*) at the start of the project (as only a small proportion of the dietitians patients were registered on Tynedale through the podiatry service), and this impacted on the teams ability to facilitate joint appointments. In CHN7 (Galway), a key facilitator of team work was the shared IT system (Diamond) which enabled the CST to have access to one another's notes which reduced the need to repeat patient histories and facilitated the coordination of appointments. Having a system that '*talks to the hospital and talks to us' (*CNS#1) facilitated team work between the hospital-based and community-based specialist teams. This function also facilitated fortnightly MDT case discussion meetings between the CST and the consultant endocrinologists and hospital team, which were highly valued by the team. In contrast, data related to patient hospital visits (other OPD appointments, discharge letters etc) were stored on a system called EVOLVE in University Hospital Galway, which due to General Data Protection Regulations (GDPR) issues, could not be accessed by the team. Being able to access such data was cited as preferable to, and more reliable than, seeking that information during patient consultations.

Some features of HealthLink e-referral, that it is self-populating, more complete and less error prone, facilitated **referrals from general practice**. Other features hindered referrals, specifically, the lack of a prompt to enter foot risk categories and the reliance by the podiatrist on free text to discern the

patient issue, along with the lack of an interface between Healthlink and Diamond which necessitated manual entry to that system. In CHN7 (Galway), barriers to the efficient **booking of patient appointments** included the lack of a caseload management function (i.e. scheduling and recall function) leading to a reliance on Excel with potential for error.

D. Lack of clarity around network boundaries

At both sites, teams believed clarifying CHN boundaries would facilitate smoother referrals. In CHN7 (Galway) referrals were based on the person's address, but '*blurred*' (Podiatrist#2) network boundaries meant that sometimes inappropriate referrals were received. In CHN9 (Cork), there was misalignment as podiatry accepted referrals based on person's address whereas dietetics accepted referrals based on GP address.

E. Concern about the practicalities of implementing the model of care for the diabetic foot

In CHN7 (Galway), the podiatrist received referrals with no risk screening documented, suggesting the need for greater clarity about eligibility criteria and the referral requirements. One podiatrist speculated that despite education in foot care being provided, practitioners might not have the time to complete the screening and fill in the form.

> *"I suppose it probably can be frustrating for GP practices when they, you know they're busy practices and you can understand like someone comes in asks them to refer them to podiatry, they may not have the time to take off the patients' shoes and socks to carry out the foot screening and they might have a very complex medical history. But yeah and like looking at their medical history you could say that they would be eligible but it's just a protocol that we have that the screening needs to be completed." (Podiatrist#1)*

> *"I probably have been a bit too lax with the referrals, on review I probably should have sent a few back and said no like it needs to be done. But the new GP, the ICGP guidelines are only really coming into place. I know they have a lot of information about how they should be screened in GP practices but between covid and everything its kind of hard to enforce that at the moment" (Podiatrist#2)*

Podiatrists at both sites raised concern at the recommended frequency of review appointments with the foot protection team that is specified in new diabetic foot Model of Care (MOC). They felt that patients would not be seen frequently enough if review appointments were limited to annual review for the moderate risk group, and twice yearly review for high risk patients and that this is '*not realistic to what's happening on the ground*' (Podiatrist#1) as patients considered high risk often need more frequent review.

> "I think that needs to be reviewed because I suppose, I'd just be worried that if this project is rolled out and they're saying that the moderate risks are only seen once a year and the high-risk are twice, and then the in-remissions are more frequently again, having those time frames isn't really realistic for the majority of those patients. The high-risk patients can have both vascular disease and neuropathy, and giving them a return date for 24 weeks is a bit crazy really. So, I think when we are projecting the number of appointments required for a service you just have to be aware that those patients will need to be seen more regularly than what is recommended in the model." (Podiatrist#1)

E. Compatibility of service monitoring requirements

Compatibility of the data collected to evaluate implementation with routinely collected discipline-specific data meant that dietitians and CNS did not have to '*start from scratch'* when monitoring the service (Dietitian#1).

> *"So the stats worked out fine. I suppose a lot of the statistical data that we collected were in line with our own kind of stats that we would collect month on month. And I suppose before this project we would have had a database that would have collected a lot of the data, so that was helpful. I didn't kind of have to start from scratch with the database. I had the majority of the data. I could pull from that."* (Dietitian#1)

However, data collected by podiatry in CHN9 (Cork) for this SIF project evaluation was different to their usual requirements, requiring '*time consuming*' (Podiatrist#1) reporting on the two sets of data. The challenge of collecting additional data specifically for the evaluation was echoed by the change manager who cited the difficulty capturing '*cross-referrals'* between the team members, recognising manual data collection was unsustainable and '*eating too much into clinical time*'. Gaps in the type of data available to clinicians, and the data required for project monitoring, were also cited as barrier to implementing service monitoring processes. For example, the dietitian in CHN9 (Cork) flagged information gaps, namely (a) being unable to access some data, specifically patient General Medical Services (GMS) status, and relying on podiatry to obtain this information, (b) the lack of data on referrals captured by the CNS on their onward referrals to dietetics (due to a SIF CNS not being in post), and (c) the lack of a record of coordinated appointments.

F. Perceived benefits of the integrated care service

Overall, the teams believed that they were '*getting there'* (CNS#3) in terms of delivering integrated care, that the integrated care service was a '*progressive*' (Podiatrist#1) approach, flagging specific aspects such as closer team-working through co-location, joint appointments, and people with diabetes receiving a more holistic '*gold standard*' (Podiatrist#2) service, as examples of integration.

> *"The team approach to diabetes care I mean I cannot, I cannot tell you too many times how important that is in diabetes care. Because you know there's so many organs involved in diabetes. There's the eyes, the kidneys, the feet etc so you know it was always, in my opinion, require a multidisciplinary team approach. And I think the creation and the formation of the team is really central to the success of diabetes care in general. It just is. For as long as I have worked in it, you cannot work as an Island in this disease area."* (CNS#1)

Team members believed that the service afforded people with diabetes time (a) to develop a better understanding of diabetes, through dedicated 1:1 education with dietitian or structured education, and (b) to explain and '*unravel exactly what's happening for them'* (CNS#1) in the appointment, to support self-management. The value of an intensive support for people with diabetes to engage in their care, whereby *'all of a sudden there's maybe three people looking out for different areas*' (Dietitian#2), was highlighted as a benefit of the integrated care service.

See cases studies in Appendix 7, submitted by the community specialist teams, which they feel demonstrate integrated care delivery in their services.

In terms of the outcomes for HCPs, clinicians in the CHN7 (Galway) team viewed increasing numbers of appropriate referrals and the dietitian caseload as a '*good sign'* (Dietitian#2), a consequence of GPs being more aware of the service. Teams at both sites cited the value of the service in supporting greater networking with other professions. In Galway, the team cited the benefit of their fortnightly MDT case discussion meetings with the Consultant Endocrinologists and other health professionals, and the learning gained from this interaction with other disciplines.

Teams also flagged how they shared their experiences and learned from one another across the 2 sites. For example, the positive feedback from the joint educational webinar in CHN9 (Cork) with general practice staff has prompted the team in CHN7 (Galway) to arrange a similar event. The CHN9 (Cork) dietitian, having noted that CHN7 (Galway) receive a lot of referrals to dietetics from PHNs, is keen to explore that and reach out to that HCP group.

Lastly, despite the challenges with monitoring the service, clinicians found it helpful to have the information as it *'informs you and informs your practice just going forward'* (CNZ1), or having access to specific pieces of the information such as waiting time (Dietitian#1), or foot risk categories, to compare networks (Podiatrist#1).

Table 18: Barriers and facilitators of components of the integrated care service

✓ = CHN7 (Galway) facilitator; ✓ - CHN9 (Cork) facilitator; x = CHN7 (Galway) barrier; x = CHN9 (Cork) barrier

CFIR domain	Component of integrated care service					
	Working as a team	Managing referrals	Conducting HCP education	Conducting patient education	Conducting patient appointments	Monitoring the service
Characteristics of the service components						
Trialability of Excel data collection						✓
Complexity of initial data collection instrument (Excel) design						x
Relative advantage of co-location to meet patient needs	✓✓				✓✓	
Relative advantage of 1:1 education to focus on patient needs				✓		
Internal context and setting of the service						
Resources						
Systems						
Self-populating (HealthLink)	✓	✓				
Limited/missing information on referral forms		x				
Lack of risk screening prompt (HealthLink)		x				
Lack of caseload management (Diamond)	x					
Diamond batch function to generate appointment letters					✓	
Community & hospital system interoperability	✓					
Lack of Diamond & HealthLink interoperability		x				
Access to colleagues' notes via shared IT system	✓					
Lack of automatic function to generate reports						✓✓
Lack of function to book joint appointments	x					
No access to information on patient hospital visits (EVOLVE)		x				
Unable to access a computer in general practice		x				
Shared physical space	✓✓			✓✓		
Staff/time						
Lack of admin resources	x x	x		x	x x	
Available, dedicated time within network/project			✓		✓	

Table 18: Barriers and facilitators of components of the integrated care service

✓ = CHN7 (Galway) facilitator; ✓ - CHN9 (Cork) facilitator; x = CHN7 (Galway) barrier; x = CHN9 (Cork) barrier

CFIR domain	Component of integrated care service					
	Working as a team	Managing referrals	Conducting HCP education	Conducting patient education	Conducting patient appointments	Monitoring the service
Hospital foot protection team sees active foot					✓	
Limited podiatry and CNS staff		x			x	
Lack of mental health services to meet patient needs		x				
Waiting list for physiotherapy services		x				
Waiting list for vascular services		x				
Waiting list for hospital appointments		x				
Networking & leadership						
Ease of networking	✓,✓	✓			✓✓	
Team triage	✓				✓	
Relationships with PHNs for cover		✓				
Team members being 'out and about' at clinics/practices	**x** x					
Direct referral to vascular services		✓				
No colleagues within discipline to 'bounce things off'					x	
Leadership from project management team	✓				✓	✓
Lack of local leadership (overarching manager)	x					
Knowledge/training						
Access to PHN/PN knowledge via education				✓		
Lack of footcare screening education (dietitian)		x				
Network boundaries – lack of clarity	x	**x** x				
(In)compatibility of referrals with criteria		**x** x				
External environment and context						
Guidance/policy						
Footcare guidelines 'not realistic'					x	
ICGP guidelines on foot screening 'difficult to enforce'		x				
Patient needs and resources						
Patient lack understanding of reason for CNS appointment					x	

Table 18: Barriers and facilitators of components of the integrated care service

✓ = CHN7 (Galway) facilitator; ✓ - CHN9 (Cork) facilitator; x = CHN7 (Galway) barrier; x = CHN9 (Cork) barrier

CFIR domain	Component of integrated care service					
	Working as a team	Managing referrals	Conducting HCP education	Conducting patient education	Conducting patient appointments	Monitoring the service
Nursing home and homebound patients not seen by podiatry		x				
Cost of private practitioner to address patient needs (nail cutting)		x				
Characteristics and attitudes of practice staff and clinicians						
Lack of IT skills (Excel)						x
Implementation process						
Engagement						
Engaging & building 'rapport' with practice staff	✓	✓✓	✓		✓	
Consultant champion to bring consultants on board	✓					
Challenge engaging patients in online DESMOND				x		
Planning	✓					
Planning the service (workflows, referrals) as a team						
Team triage to reflect and generate solutions	✓					
Monitoring						
Compatibility/ incompatibility with existing statistics/KPIs						✓✓x
Some data points not captured/accessible						x
COVID-19						
Engaging HCPs due to COVID-19			x			
Cancelled clinics – no physical exam					x x	
Mix of F2F, online, and phone appointments -accessibility					✓	
Acceptance of inappropriate referrals – GP insufficient time to educate		x				

2.3.5 Findings from the survey of existing diabetes care in network general practices

Response rate

In total, 15 practices returned the surveys, giving an overall response rate of 52% (15/29) - 45% in CHN7 (Galway) (5/11), and 56% in CHN9 (Cork) (10/18). Surveys were completed by GPs (n=11), practice managers (n=3), and practice nurses (n=2). Two practices in the sample operated from the same site and shared some resources, thus providing the same answers to questions about staff and administration systems. These responses were counted separately for each practice.

In terms of missing data, some questions were not answered by all respondents and therefore the denominator varies in these instances. Denominators for each variable (by overall, CHN7 (Galway) and CHN9 (Cork)) are indicated in table footnotes or in subheadings. All results are reported as the proportion of practices who *responded* to that question.

Practice Demographics

Practice demographics are outlined in **Table 19**

Table 19. Practice demographics (N = 15)

		Overall (N=15)	CHN9 (Cork) (N=10)	CHN7 (Galway) (N=5)
		Median (range)	Median (range)	Median (range)
N staff (WTE)	GPs	3.0 (1.0-9.0)	2.5 (1.0-9.0)	3.5 (2.5-6.0)
	GP Registrar[α]	1.0 (1.0-1.0)	1.0 (1.0-1.0)	1.0 (1.0-1.0)
	Practice Nurse[§]	1.3 (0.5-5.0)	1.3 (0.5-5.0)	1.5 (1.0-4.0)
	Practice Manager[¶]	1.0 (0.5-2.0)	1.0 (0.5-2.0)	1.0 (1.0-1.0)
	Other admin. staff	3.0 (1.0-12.0)	2.5 (1.0-12.0)	3.0 (2.5-4.0)
		Median (range)	**Median (range)**	**Median (range)**
Total population	Overall[β]	4500 (700-16000)	2750 (700-11288)	7557 (4000-16000)
	GMS/GPVC[†]	1700 (440-4348)	1000 (440-3082)	2130 (1700-4348)
	Non-GMS (Private)[§]	1800 (100-11652)	1500 (100-8206)	5777 (1600-11652)
Diabetes caseload	T2D Overall[§]	147 (50-566)	174 (50-566)	131 (66-230)
	GMS/GPV[¥]	104 (13-511)	100 (13-511)	107 (44-118)
	Private[µ]	24 (5-70)	24 (5-70)	22 (11-26)
	T1D[β]	18 (5-48)	18 (5-48)	17 (7-20)
	Other e.g., MODY[‖]	0 (0-1)	.5 (0-1)	0 (0-0)

αOverall, n=3, CHN9 (Cork), n=2, CHN7 (Galway), n=1
¶Overall, n=9, CHN9 (Cork), n=6, CHN7 (Galway), n=3
βOverall, n= 14, CHN9 (Cork), n=10, CHN7 (Galway), n=4.
†Overall, n=13; CHN9 (Cork), n= 9; CHN7 (Galway), n=4
§Overall, n=12; CHN9 (Cork), n=8; CHN7 (Galway), n=4
¥Overall, n=12; CHN9 (Cork), n=9; CHN7 (Galway), n=3
µOverall, n=10; CHN9 (Cork), n=7; CHN7 (Galway), n=3
‖Overall, n=3; CHN9 (Cork), n=2; CHN7 (Galway), n=1

Structured care for type 2 diabetes within the practice

Overall, 87% of respondents had a diabetes register (n=13), all practices in CHN9 (Cork) (n=10) and 60% of practices in CHN7 (Galway) (n=3) updated by a mix of staff members. Most practices (n=11,

73%) used a recall system to schedule diabetes review visits; 80% of CHN9 (Cork) practices (n=8) and 60% of CHN7 (Galway) practices (n=3). While the questionnaire response rate is low, these differences between sites may reflect the influence of Diabetes in General Practice Ltd, UCC (DiGP) in the Cork area, providing education and training in delivering structured diabetes care in general practice e.g. support in developing registers, structured recall etc. See table with supplementary data in Appendix 5.

Impact of Covid 19 on diabetes care delivery in general practice

During COVID-19 restrictions, 50% (n=7/14) of practices temporarily paused structured routine diabetes reviews, while the remainder continued with mostly face-to-face reviews. Most practices that had stopped face to face reviews resumed them when restrictions eased: all practices in CHN7 (Galway) (n=5) and 80% in CHN9 (Cork) (n=8).

Location of CNS Clinics

Respondents were asked about their preferred method of support from the CNS Diabetes during COVID times and during usual service. During (non-COVID) usual service, most practices (n=9, 64%) indicated that they would prefer the CNS to review selected patients with complicated diabetes in a primary care centre rather than within their practice; 55% (n=5) in CHN9 (Cork), and 80% (n=4) in CHN7 (Galway). For support during the COVID-19 pandemic, 91% (n=10) of practices indicated they would prefer the CNS to deliver consultations (face-to-face, telephone or virtual) from a primary care centre, rather than consultations delivered from their practice. Only one practice in CHN7 (Galway) preferred the consultations be conducted from their practice.

Access to services

- Dietetics: All practices had access to a HSE dietetic service (n=15) (Table 18), and within the practice had access to height measures and measuring tape for waist circumference (n=15).
- Structured patient education*:* Before COVID-19, 47% of practices reported they always referred people with newly diagnosed T2D to a structured group education programme (n=7) (i.e., Discover Diabetes, Diabetes Education and Self Management for Ongoing and Newly Diagnosed (DESMOND), or Community Orientated Diabetes Education (CODE), 40% usually referred (n=6), and two practices (13%) in CHN9 (Cork) reported they never referred patients.
- Podiatry: All practices had access to the HSE podiatry service (n=15) (Table 18). Most practices had access to monofilament in the practice, foot care leaflets and tuning fork. Additionally, most practices reported that they perform annual foot screening as part of the diabetes review.

Table 20. Dietetic and foot care in the practice			
	N (%)	**N (%)**	**N(%)**
	Overall (N=15)	**CHN9 (Cork) (N=10)**	**CHN7 (Galway) (N=5)**
Access to a HSE Dietetic Service	15 (100)	10 (100)	5 (100)
Dietetic resources (MCQ)			
Height measure	15 (100)	10 (100)	5(100)
Measuring tape for waist circumference	15 (100)	10 (100)	5 (100)
Diabetes & diet leaflets/online resources	14 (93)	9 (90)	5 (100)
Refer newly dx to structured group education programmes (Pre-COVID-19)			
Always	7 (47)	5 (50)	2 (40)
Usually	6 (40)	3 (30)	3 (60)
Never	2 (13)	2 (20)	0 (0)
Programmes referred to (MCQ)	**Overall (N=12)**	**CHN9 (Cork) (N=7)**	**CHN7 (Galway) (N=5)**
Discover Diabetes	7 (58)	7 (100)	0 (0)
DESMOND	4 (33)	0 (0)	4 (80)
DESMOND/CODE	1 (8)	0 (0)	1 (20)
Access to HSE Podiatry service	**Overall (N=15)**	**CHN9 (Cork) (N=10)**	**CHN7 (Galway) (N=5)**
Access to HSE Podiatry service	15 (100)	10 (100)	5 (100)
Podiatry resources (MCQ)	**Overall (N=14)**	**CHN9 (Cork) (N=9)**	**CHN7 (Galway) (N=5)**
10g Monofilament	12 (86)	8 (89)	4 (80)
128 Hz Tuning Fork	10 (71)	7 (78)	3 (60)
Foot care leaflets	11 (79)	8 (89)	3 (60)
Annual foot screening as part of diabetes review	**Overall (N=15)**	**CHN9 (Cork) (N=10)**	**CHN7 (Galway) (N=5)**
Yes	14 (93)	9 (90)	5 (100)
Who perform foot screening/assessment	**Overall (N=14)**	**CHN9 (Cork) (N=9)**	**CHN7 (Galway) (N=5)**
GP	2 (14)	1 (11)	1 (20)
GP or PN	4 (27)	1 (11)	3 (60)
PN	7 (47)	6 (67)	1 (20)
Other	1 (7)	1 (11)	0 (0)
Practice staff trained in diabetic foot screening	**Overall (N=13)**	**CHN9 (Cork) (N=8)**	**CHN7 (Galway) (N=4)**
Yes	7 (58)	6 (75)	1 (25)
No	5 (42)	2 (25)	3 (75)
Training in foot screening would be useful	**Overall (N=14)**	**CHN9 (Cork) (N=10)**	**CHN7 (Galway) (N=4)**
Yes	12 (86)	8(80)	4 (100)
No	2 (14)	2 (20)	0 (0)

Psychological support services

Overall, 71% of practices (n=14) reported they had access to HSE psychology/counselling services, 67% of those in CHN9 (Cork) (n=9) and 80% in CHN7 (Galway) (n=5). When asked to provide details of those services to which they had access, six practices referred to the Counselling in Primary Care service (CIPC) (n=5), with some flagging the waiting lists or limited nature of these services (n=3).

Diabetes education and continuing professional development (CPD)

- Overall, 69% of practice (n=9/13) said staff members have completed HCP diabetes education programmes; a greater proportion of practices in CHN9, Cork (n=7, 88%) than in CHN7, Galway (n=2, 40%).
- 58% of practices reported they had prior training in diabetic foot screening.
- 86% (n=12) of respondents thought further training in diabetic foot screening would be useful.

- Most practices (n=13, 63%) have specific education/training needs relating to diabetes care including footcare (including foot assessment), managing a high morbidity population, diabetes updates including new medications.

Eight practices made suggestions about other ways the new Community Specialist Team could support practices: access to the dietitian and podiatrist (n=2), greater awareness of available network services (n=2), more education/updates (n=3), more regular CNS support (n=2), including specifically with complicated cases (n=1), and shadowing sessions (n=1).

When asked about the usefulness of different elements of the diabetes integrated care service, most practices felt it would be very useful to have support from the network podiatrist (100%; n=14/14) diabetes dietitian (93%, n=13/14) and diabetes CNS (93%, n=13/14) to support the management of the practice's patients with diabetes in the community, and 'shadowing' opportunities for the practice staff with the CNS, podiatrist, or dietitian (n=8/14, 67%).

2.3.6 Findings from GP Interviews and Practice Nurse Focus Groups

Response rate and characteristics of participants

Focus groups: Eight practice nurses were available to attend the focus groups (4 from Galway and 4 from Cork). The topic guide was developed by the researcher with input from the project evaluation subgroup.

Interviews: Three GPs were available for interview (2 from Galway and 1 from Cork). The topic guide was developed by the researcher with input from the project evaluation subgroup.

Interview and Focus Group Findings: GP and Practice Nurse Experiences of the diabetes CST

GPs and practice nurses highlighted how diabetes care in Ireland has changed significantly over the course of the last fifteen years. The Chronic Disease Management programme, the Cycle of Care, and local efforts such as DIGP (Cork) to address diabetes care in the community, were perceived to have had a positive impact on what has been described 'ad-hoc unstructured diabetes care' which was overly dependent on hospital referral.

Outlined below are the views expressed by Practice Nurses and GPs regarding the service delivered by the diabetes CST during the project and barriers to delivering integrated diabetes care more generally. Additional qualitative data on broader aspects of diabetes care from these focus groups and interviews are also presented in Appendix 5.

The feedback from GPs and practice nurses on the CST was positive with participants commenting on the accessibility of the service, continuity of care, availability of Specialist input as needed, and primary care diabetes education.

i) Accessibility of the service

GPs and Practice Nurses valued the accessibility of the CST from their patients' perspective in terms of locally delivered services and shorter waiting times for patients to access the service compared to outpatient services.

"It is fantastic having access to the integrated team. Having them on site is much better, people used to have to travel to been seen, and were dependent of lifts, or public transport, now it is all done locally." (PN3, focus group)

"instead of waiting hours in an outpatient department they are all seen locally…." (PN4, focus group).

……. And patients are seen in about 3-4 weeks after being referred, they're looked after." (GP1, Interview)

GPs and practice nurses also commented on the accessibility of the CST service from their own perspective in terms of the ease of referral and access to the specialist community service allowing them to have patients seen quickly when necessary or simply using the service to ask for advice from the CST when a referral was not deemed necessary.

"Those that we refer, we refer through Healthlink. So that's worked well, it makes referral very easy …." (GP1, Interview)

'There might be the odd case where they're just under they're limits for referral to hospital but do need to be seen urgently we might contact them. Or for a minor query that doesn't really warrant a referral to them, but a quick word of advice, you might ask them..(GP2, Interview)

The direct link the CST had with secondary care diabetes services which allowed the CST, particularly the CNS, to liaise with hospital outpatient diabetes services directly when required, avoiding the need for an outpatient referral was also commented upon.

"The CNS and the team are in contact with the diabetic clinic, she has that link in the hospital, and for those that are very complex, she can liaise with them in there. It makes the pathway a lot simpler, rather than sending a patient off to the outpatient clinic. It works well that way". (GP1, Interview)

The overall perception of both GP and practice nurse participants was that accessibility to the community specialist team service along with other diabetes primary care initiatives has led to a reduction in referrals from general practice to outpatient services.

1) Improved continuity of care

Both GPs and practice nurses commented on the benefits of continuity of care for patients attending the Community Specialist Team and that seeing the same person led to greater patient satisfaction and patient engagement.

"There is a continuity of care, people see the same people and followed through with, and that really helps, even though we are not in the same building, they have contact with the same people, which is very important" (GP3, Interview)

"I think that when the patients don't lose interest that is the key to keeping them coming back, instead of waiting hours in an outpatient department they are all seen locally and by the same person." (PN4, focus group)

"I think from the GPs point of view there's much more satisfaction out of it because you feel that they're (patients) getting some input and they're engaging with it. I think this is much better for them". (GP2, Interview)

This continuity of care was also important from their own perspective in terms of being able to speak to the same HCP when seeking advice compared to their experiences of communicating with hospital outpatient services.

"Often if you phone up the hospital, you could get a different person, I think knowing who the person is, helps with the continuity of care, and knowing that you can speak to a person directly is invaluable". (GP3, interview)

This also enabled GPs and practice nurses to develop good working relationships with members of the CST and allowed for more informed discussions to take place on individual patient needs for specialist services where patients might not necessarily meet 'eligibility' criteria on paper.

I had a girl the other day with a corn…she's diabetic, on methotrexate, …she can't do her own feet….I rang the podiatrist and (podiatrist) saw her the next day…..on the form she wouldn't be eligible" (PN5, Focus group).

3) Specialist input as needed, facilitating "right care, right place, right time"

The general consensus among participants was that general practice was in a position to deliver structured diabetes care in the primary care setting but that having access to members of the CST was valued to access specialist support as and when needed for patients who might be 'struggling' with their diabetes care.

" ….it's fantastic to be able to say to someone struggling with their HbA1c, look I can send you to the community dietician, she can steer you in the right direction (PN6, focus group).

"I had a lady recently, and her Hba1C was over 60. While we were monitoring her, and the doctors were treating her, I took the responsibility to refer her the integrated care team. She actually found it very helpful, and it was great for her to access that service, get back in there again, and get the support that she needed at that time." (PN1, focus group)

GPs also perceived that members of the CST had more time for patient education and support compared to GPs.

"One of the big pluses and this is where I think the integrated diabetes team has been such a success, is that sometimes the GPs we don't have the time to talk to people that the CNS will have" (GP1, interview)

Both GPs and practice nurses acknowledged the difficulties in 'keeping up' with diabetes treatment options and how the DNS-IC played a key role in providing them with support in this area as the DNS-IC was up to-date with new treatments and had a high level of expertise in managing medications.

"I think one of the biggest changes in terms of diabetes management, the therapeutics, the drugs involved have become a little, not complicated but there certainly is a vast array of drugs out there. All drugs that belong to the same class really. GP1, interview)

*"Certainly for people on insulin, we wouldn't have quite as much experience for that so its great to have a specialist nurse for that. The more difficult to treat people who might be on two or three diabetes medications already, and the treatment is getting more complex, its great to have the CNS input for that….you might have a patient in front of you that has 6 or 7 co-morbidities….*so at least we know we have someone (the CNS) managing the medication in one illness (diabetes) and its being looked after well. It's a great support in that sense…. (GP2, *Interview*)

4) The role of the community specialist team in diabetes education

The support and education offered by members of the integrated care team also helped improve practice nurses' diabetes knowledge leading to an increase in their own confidence to deliver diabetes care and educate patients

"Through education, and the support of the local teams, I think now there is the confidence to educate the patients, about their medication and foot care especially. That has been a real change". (PN4, focus group)

'The girls (the CNS, Dietitian, and Podiatrist) are great. I would often talk to the diabetes nurse, very helpful, she even got a rep to drop down blood sugar monitors, and they give you little tips and information'. (PN1, focus group)

5) Barriers to delivering integrated diabetes care

Lack of access to integrated IT systems

Lack of access to integrated IT systems across general practice, primary care and the hospital service was a barrier to providing coordinated and integrated care for people with diabetes attending both general practice and outpatient services for their diabetes care.

Lack of awareness of when patients were attending outpatient services led to poor coordination of integrated diabetes care. Lack of access to blood test results was also an issue where general practice could not always access recent blood test results if requested by outpatient diabetes services and outpatient services often could not access blood test results provided by general practice for an outpatient diabetes appointment. This led to a duplication of services, an increased burden on patients and inefficiencies in the service.

"I get incredibly frustrated when I bring someone in, because nine months they haven't come in, what's been going on, …… and then they come in and say, 'you know I was at the South Infirmary or the Mercy 2 months ago'. I get no notification of it. It's so frustrating because then they have to get their bloods done again, so I can fill in my form, so it can get paid to the GP, that's just ridiculous. If someone is getting bloods done in the Mercy or the South Infirmary, we should have access to them, and vice versa. So they're not constantly being hassled for things like that." (PN5, focus group)

'I think a big problem is the hospital and general practice systems are not joined up, so a lot of work is duplicated. First of all that's terrible for the patient. Secondly its inefficient and costly. It slows everything down…… Patients say 'I was in hospital last month and had my bloods done'. Sometimes we can ring the lab and they'll give them to us, but a lot of the time they won't with GDPR, they say 'no you didn't request the bloods, we can't give you the results'.(PN6, focus group)

"What we used to find, the patient under hospital care, you'd get a letter oftentimes saying they haven't had their bloods done before the appointment, even though we would have done the bloods, but they wouldn't have been able to access them, or it wouldn't have reached the correct place when we'd send them in. They'd say no bloods received, and would follow up at 6 months again, and that would be the level of input, which is a really regular occurrence. So it's totally meaningless, because they wouldn't change their medication…… (GP2, Interview)

Inequitable service for 'private' patients

Although the introduction of the Chronic Disease Management Programme (and the Diabetes Cyde of Care) was a positive development in general practice, concerns were raised regarding the difference in treatment for GMS/GPVC patients and 'private' patients who had to pay for their diabetes care in general practice. Although it was acknowledged that 'private' patients had equitable access to the CST via referrals from general practice this was dependent on them attending general practice for their diabetes care which not all 'private' patients might do due to the costs involved.

'It is problematic in that you're leaving out a sizeable chunk of the population from the care…… it would be nice to have the whole population covered.'(GP1)

"I think the private patients are being left behind. They should have the right to access that service (CDM programme) as well." (PN5)

2.3.7 Experience of people with type 2 diabetes attending the community diabetes specialist service

Response rate

A total of 85 questionnaires were posted out to people with T2D who had attended a member of the Community Specialist Team during the first 2 weeks in May 2021. In total, 41 questionnaires were returned giving a response rate of 49%. No reminders were sent to non-responders. Thirty-one people (76%) provided their contact details consenting to be contacted by a researcher to take part in a telephone interview. Nine of the 31 who provided contact details were purposively selected based on their responses to the survey questionnaire regarding age, gender, number of appointments and number of CST HCPs they had seen.

Characteristics of questionnaire respondents and interviewees

Characteristics of respondents to the questionnaire and interviewees are reported in **Table 21**. Characteristics of consultants that respondents had experienced are detailed in appendix 6

Table 21: Characteristics of sample population			
Characteristics of the Questionnaire Respondents (n = 41)		**N**	**%**
Gender	Male	25	61
	Female	16	39
Age	< 40 years	1	2
	41-55 years	6	15
	56-65 years	12	29
	66-70 years	7	17
	>70 years	15	37
Diabetes duration	Less than 12 months ago	10	24
	1-5 years ago	11	27
	More than 5 years ago	20	49
Characteristics of Interviewees (n = 9)		**N**	**%**
Gender	Male	4	
	Female	5	
Diabetes duration	More than 10 years	4	
	Less than 10 years	5	
Referred by	General practice	6	
	Secondary care	3	
Appointments with CST*	More than one	7	
	One appointment	2	
**Breakdown of which HCP was seen is given in appendix 6*			

Accessibility of the Community Specialist Team

Waiting times from time of referral and on the day of the appointment and distance travelled to attend appointment are shown in Table 22. Of those who reported having their first appointment within the last 6 months (n = 29), 69% reported a waiting time of less than 4 weeks to see the HCP from time of referral. Of those who had attended a face-to-face consultation (n = 33), 87% reported waiting less than 15 minutes to see the HCP on the day of their appointment and 74% reported having to travel less than 5 miles to attend their appointment **(Table 22).**

Table 22: Accessibility of community integrated care service			
		n	%
Waiting times from time of referral (n = 27)	0-4 weeks	20	71
	5-8 weeks	3	11
	>8weeks	3	11
	Can't remember	3	11
Distance travelled (n=33)	Travel < 5 miles	25	74
	Travel 5-10 miles	8	26
	Travel >10 miles	0	0
Waiting times on day of appointment (n = 33)	Less than 15 minutes	29	88
	15- 30 minutes	3	9
	>30 minutes	1	3
** Percentages may not always total 100 due to rounding*			

All 9 interviewees commented on the accessibility of the Community Specialist Team. Those who also had experience of attending outpatient diabetes services compared the experiences.

> *"…it was only a matter of a couple of weeks, I got a letter out, it wasn't too long… the clinic is ..five minutes away, so I haven't far to go…I like that it is local and that I would be finished within the hour, you know…all I had to do when I get there is ring them and they are out there to meet me at the door …they both were very punctual…you don't have to be waiting an hour or so to come see you, that's great…" (Interviewee 07, Female, Attended CNS and Dietician)*

> *"I could leave here half an hour, even 25 minutes before an appointment and could go down, instant parking, into her and I was instantly called, I was never more than 5 minutes …to be called for my appointment….and I have been 2 or 3 hours (waiting) in (outpatient clinic) and trying to park the car was unreal…"(Interviewee 04, Female, Attended Podiatrist).*

> *"They give you a time, and within 5 or 10 minutes they will see you…I could be over there (outpatient diabetes clinic) 3 or 4 hours…there are so many in the queue waiting to be seen…My wife drove me up there (community service)…she waits for me there…when she goes to the (outpatient diabetes) clinic she has to go home because as I said I could be there 3 or 4 hours…I have to ring her then to come back…"(Interviewee 03, Male, Attended Podiatrist)*

Experience of the consultation

Eighty eight percent of respondents reported 'definitely' having enough time to discuss their diabetes care and 93% felt they had been provided with the 'right amount' of information to help them manage their diabetes. The majority of respondents perceived they were involved as much as they wanted to be in discussions about their diabetes care (78%) and 'definitely' feeling more confident about managing their diabetes following the consultation (73%). Fifty six percent felt the HCP had 'definitely' asked them how their diabetes impacted on their everyday life with a further 27% indicating this had happened to 'some extent'. Eighty two percent reported the HCP had informed them who to contact if they had any concerns following their appointment. Supplementary data on the patients experience of the consultation is detailed in Appendix 6.

Qualitative feedback from both the questionnaires and those interviewed about their experience of the consultation was also positive with respondents commenting on the provision of information during the consultation and being involved in discussions about their diabetes care.

"(Podiatrist was) very good at giving information and attention to detail was very good" (Survey respondent, 016, Female, attended Podiatrist)

She….didn't force advice when I told her it didn't apply i.e. don't eat vegetables (025, Survey respondent, Male, Attended dietician)

"With them it was about the diabetes, about my food, about my exercise, my attitude to it, how I felt about it, how I was dealing with it…, coping with it….and giving you ideas of what to do…." (Interviewee 05, female, saw DNS-IC and dietician)

"It was a collaborative interaction on each visit" (Interviewee 09, Female, Attended all 3 HCPs)

The level of support provided after and in between consultations was also evident with questionnaire respondents and interviewees commenting on follow up calls from the HCPs to see how they were doing and being able to directly contact the different HCPs of the community specialist team if they needed advice or had any concerns following a consultation.

"What was very helpful also were the follow up phone appointments to monitor my progress with the diet" (Survey respondent 017, female, saw dietician)

"I got their mobile numbers and they said any problems, any time I want to contact them, just give us a ring" (Interviewee 02, male, attended all 3 HCPs)

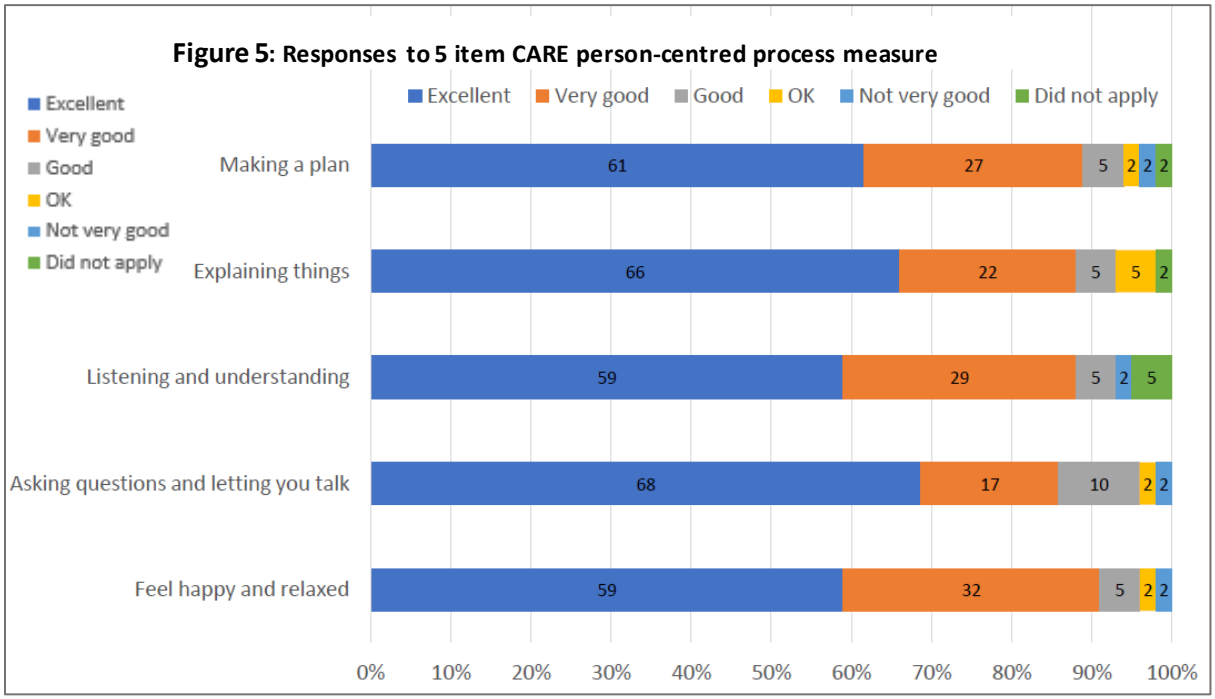
"Yes, I could contact her directly and if she was busy with a client she rang back within half an hour" (Interviewee 04, female, saw podiatrist).

"…the first day, both (dietitian) and (DNS-IC) made sure I had their phone numbers and their names….I remember (DNS-IC) contacted me twice after the first talk we had…to see how things were going ….and dietitian told me if there was something I needed to ask about the diet or something that I was doing and needed to check with her, that she was available on the phone …" (Interviewee 05, Female, Attended CNS and dietician)

Person-centredness of consultation

Scores on the individual items on the 5 item CARE person-centred measure were high with the majority of participants responding 'Excellent/Very good or to each statement (Figure 5).

The responses of 39 participants were included in the analysis of the CARE measure's total score where scores on each item are added, giving a maximum score of 25, and a minimum of 5. (*Two respondents who used the 'not applicable' response option for 1 or 2 of the questions in the 5-item measure were excluded from the analysis*). Fifty-four per cent (21/39) of participants scored the maximum score of 25 with a mean score of 23 (SD, 3.4).



Qualitative data from questionnaires and interviews supported these findings with respondents commenting on how they felt 'comfortable' attending different members of the Community Specialist Team, how they were treated with respect, given time to ask questions, listened to and provided with clear explanations which they could understand.

> *"…she was a very friendly and reassuring person, she made me feel at ease and relaxed at all times" (Survey respondent, 06, Male, saw podiatrist).*

> *"She treated me as an equal and was encouraging me to do what I wanted to do (starting a diet and getting fit" (Survey respondent, 016, female, saw dietician)*

> *"Anything I needed to ask her, she explained ….anything I was unsure of, I didn't feel that I couldn't ask her something and sometimes she's come up with something that I didn't even think about…it was just very good…"(Interviewee 05, Female, saw CNS and dietician)*

> *"(Podiatrist was) very caring, informative, listened to my concerns…she was prepared to discuss all aspects of my care" Interviewee 02, male, attended all 3 HCPs)*

Communication between HCPs and people with type 2 diabetes

All but one participant (97%) reported knowing the reason why they had been referred. Of those who had a first appointment (face to face or telephone consultation) within the last six months (n = 29), 93% said the HCP 'definitely' had the most up to date information about their diabetes at their first appointment.

When asked to consider **all** the different health care professionals they had seen about their diabetes in the last 12 months, 72% perceived that the HCPs involved in their care *always/usually* worked together as a team to help them manage their diabetes. Ninety three percent reported they were

'never' or only 'sometimes' confused by HCPs giving them different advice on how to manage their diabetes. Just over a third of respondents reported having to '*always/usually*' repeat information about their diabetes to different health care professionals involved in their diabetes care.

Those interviewed also perceived that communication between their general practice and the integrated care service and between members of the Community Specialist Team themselves was good.

> *"The ladies were on the same page, like (the dietitian) knew my bloods, the (DNS-integrated care) knew the diet that the dietitian was discussing with me… I had met both of them separately the last occasion and both of them had fed into each other as to what was being discussed with me from an exercise point of view, from a dietitian's point of view…I had my food plan, my exercise plan, my medication plan, it all seemed to work seamlessly…."(W02, female).*

> *"She (DNS-integrated care) knew everything about me when I went in, she had everything in there from the practice nurse….she knew everything about what I had spoken to the dietitian about…."(W07, female)*

Communication between all HCPs involved in their diabetes care

When asked to consider more generally **all** the different health care professionals they had seen about their diabetes in the last 12 months, 72% perceived that the HCPs involved in their care *always/usually* worked together as a team to help them manage their diabetes. Ninety three percent reported they were 'never' or only 'sometimes' confused by HCPs giving them different advice on how to manage their diabetes. Just over a third of respondents reported having to '*always/usually*' repeat information about their diabetes to different health care professionals involved in their diabetes care.

Service improvements

Four participants provided qualitative feedback in the questionnaire on how they thought the diabetes care they received from the named health care professional could be improved. These included comments on:

- The need for more time when attending a first appointment with the dietitian (n = 1)
- Preferences for face-to-face consultations/education programmes for those hard of hearing (n = 2) *[Due to Covid 19 diabetes self-management education programmes were being delivered virtually and some consultations were telephone consultations.]*
- Wanting additional information relating to diet or medications to meet individual needs following consultation (n = 3)
- The delay in transferring from a dietetic service in one area to another area as had to go through GP and DNS-integrated care (n = 1).

When asked about ways the integrated care service could be improved, all interviewees felt the service met their diabetes care needs with the advantage of being located in the community making it easier for them to attend the service.

> *"No, the fact that it all happened locally where I didn't have to travel, that I was listened to, that it was a collaborative interaction on each visit made it so great I feel it could not be improved. (Interviewee 09, female, saw all 3 HCPs)*

SECTION 3: LESSONS LEARNED

In this section:

3.1 Key learning points including barriers and facilitators of service development and implementation

- **Community specialist teams should be co-located to facilitate responsive patient care, networking and relationship-building.**

Co-location was an important facilitator of the service, as evidenced by interviews with the Community Specialist Team as it enabled delivery of joint appointments, informal information-sharing, and relationship-building. In CHN7 (Galway) where all three clinicians were co-located, the CNS spoke of the '*luxury'* of having team members to easily refer to and consult with should she encounter a patient who would benefit from seeing another member of the team. The teams felt joint /coordinated appointments improved accessibility and reduce the burden on patients, sometimes facilitating more intensive management to support patients to engage with their care. Patients commented on how the teams worked well together and shared information. This points to the need to provide a shared space, and to consider creating more flexibility in clinician diaries to respond to patient needs in this way. Lack of dedicated and co-located CNS in CHN9 (Cork) meant coordinated appointments were not possible with the CNS (only with the podiatrist and dietitian). The lack of a dedicated and co-located CNS in CHN9 (Cork) was highlighted as a 'massive gap' in the service.

- **Providing a supportive administrative and IT infrastructure is crucial**

Lack of administrative support was continually flagged across teams as limiting their capacity to schedule coordinated appointments, organise education, and engage in routine service monitoring, and was a main recommendation for the implementation of the hubs.

Positive IT developments which facilitated integrated service delivery, from the community specialist teams perspective included a) the introduction of Healthlink e-referrals by the services, and b) the rollout in CHN7 of the OPDs clinical information system (Diamond) to the community team. GPs also echoed the benefits of Healthlink ("it makes referral very easy").

IT barriers to integrated service delivery were evident across stakeholder groups. For the Community Specialist Team barriers included a) lack of a scheduling and recall system b) lack of bespoke podiatry referral form on Healthlink (incorporating risk assessment) c) lack of access to hospital systems such as EVOLVE and labs d) lack of automated activity/KPI reporting. Participants in general practice also highlighted their frustration with the lack of access to blood results done in some hospitals OPDs and likewise, the inability of some OPDs to access GP bloods.

- **Care pathways for the CST need to be co-developed with aligned community healthcare network and hospital services**

The introduction of a new specialist diabetes service will impact on existing primary care services delivering care to this patient group. Early discussions should take place with aligned services to agree care pathways and ensure the seamless transition of patients between services. The experience from this pilot would indicate that until such time as all CHNs are operational, and geographical boundaries clarified, this process will be complicated.

Podiatrists raised concern about aligning their service to the care pathway in the model of care for the diabetic foot, as this is different to what is 'what is happening on the ground' currently. They felt that

changing their practices was a challenge due to staff shortages and capacity of the existing service, as well as their perceived need for more frequent follow up of many patients. This concern could reflect the challenge of implementing a new model of care in a changing environment when eligibility criteria and pathways to other aligned podiatry services are still unclear (e.g. to CHN community podiatry services and the hospital-based complex foot clinic).

- **To facilitate service implementation, teams need clear information on network boundaries and there should be consistency in geographical eligibility criteria for accessing CST services**

The development of Community Healthcare Networks as part of the Enhanced Community Care Programme was at an early stage during project implementation. As a result, there was a lack of clarity around network boundaries at both sites, and inconsistencies in eligibility criteria for the specialist services in CHN9 (Cork), and this created issues with referrals. As Community Healthcare Networks 'go live', it is important that CSTs and their referrers are clear on new boundaries and criteria.

- **Teams need time for collaborative service planning in the early stages of implementation**

The teams highlighted the importance of planning and preparing for new service implementation, to clarify processes and structures, *prior to seeing patients* e.g., triage, planning, workflows, policies, and communication and engagement activities etc.

Establishing mechanisms for regular engagement with consultants is also important. In CHN7 (Galway) recurring opportunities for engagement with the Consultant regarding case management was valued and helped facilitate integrated care delivery. The mechanism by which this engagement takes place (e.g. MDT virtual case discussions) should be agreed collaboratively with relevant stakeholders.

- **Supporting and resourcing engagement of the team with GPs and PNs is important to facilitate service implementation**

Members of the team emphasized how introductory / educational outreach meetings generated 'rapport', facilitated education, and provided opportunities for subsequent follow up with GPs to share guidance on referrals. This was important given the recognition both within teams and by the change manager that inappropriate referrals are sometimes to be expected, partly due to practices being less familiar with the service, and the team wanting to meet patient needs, particularly during COVID-19. Practices commented on the benefits of building rapport with the team, *'knowing who the person is'* that they are referring to and ability to seek '*a quick word of advice'* from the team.

Podiatrists commented that implementation of the model of care for the diabetic foot appeared to be challenging for general practice with a lack of screening and risk categorisation at referral. GPs and practice nurses reporting a need for more training in foot screening. The imminent launch of the HSeLanD foot screening module, and it's promotions by the CSTs, should help address this training need.

3.2 Future monitoring and evaluation for quality development

The impact of Covid 19 on the health service throughout the project, and the resultant short project timeframe, limited the scope and depth of monitoring and evaluation possible during this project.

To fully evaluate the end-to-end implementation of the model of integrated care for type 2 diabetes, the ability to access, integrate and interrogate data across settings is required.

- A national diabetes register is urgently needed to inform service planning.
- Linking IT systems between the various 'levels of care' would allow monitoring of patient flow between general practice, community specialist hubs and hospital-based specialist OPD service. A unique patient identifier would facilitate this type of monitoring.
- Evaluation of general practice level data, would provide information on the proportion of patients with diagnosed type 2 diabetes receiving structured diabetes care in general practice, the proportion of patients referred to members of the community specialist team, and changes in intermediate outcomes over time. Evaluation of data through the chronic disease management programme data returns would provide some of this information, but this would be limited to GMS/GPVC patients only until such time as universal healthcare is available.
- Access to hospital level data could be used to determine the impact of services on OPD referrals, A&E attendance, admissions and longer-term outcomes such as amputation rates. These data should to be collected in a 'normal', non-covid environment to determine the true impact of the new community specialist teams.

Community specialist services should be monitored and evaluated routinely to facilitate ongoing quality improvements. Datasets should capture markers of care integration, teamwork and responsive patient-centered care, as well as the appropriateness of referrals. The findings should be reviewed and shared with services at regular intervals to inform ongoing service developments. These data should also be used to inform the updating of existing models of care.

3.3 Conclusion

The healthcare experience of individuals with diabetes is often characterised by episodic, reactive care, culminating in hospital admissions due to micro- and macrovascular- complications of diabetes. This is neither patient-centred nor sustainable, especially considering the growing prevalence of diabetes and our ageing population. This project that delivered integrated diabetes care in the community setting, aligns with the Slaintecare vision for a person-centred community-focus to chronic disease management rather than a hospital-centric focus. Integrated Care for diabetes is characterised by responsive services which support and empower individuals to optimise their health and prevent complications. Through this project we have achieve this, as evidenced through evaluation of clinicians activity data, qualitative interview and focus group findings with health professionals, qualitative patient interviews and a patient experience questionnaire and patient case studies.

This is the first time diabetes specialist services have been delivered at CHN level. Despite the significant impact of the Covid 19 pandemic on our health service throughout this project, we successfully implemented new specialist services and delivered projected outcomes. New protocols, processes and workflows that were developed, trialled and refined included a health-link referrals system (Galway), a referral triage process for the integrated care team (Galway), new MDT cross-

referral processes (Galway and Cork), roll-out of the OPD Diamond Clinical Information System to the community for the first time (Galway) including the setting up of new community clinics on Diamond and the use of it's functionalities to improve MDT communication, establishment of regular MDT Case discussion meetings with consultants and other specialities (Galway), and CNS-facilitated discharge clinics in the OPD clinic (Galway), a new vascular-podiatry care pathway (Cork) and piloting the roll-out of Tynedale clinical information system (Cork) from the community podiatry service to the diabetes dietetic and nursing services.

The project has been selected by Sláintecare for mainstreaming under the Enhanced Community Care Programme and will be upscaled and rolled out nationwide. It is hoped that the experience and learning shared in this report will inform implementation of Community Specialist Teams and the National Framework for the Prevention and Management of Chronic Disease (2020-2025). [7]

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APPENDICES

In this section:

APPENDIX 1: Project Team Membership

Membership of the SIF-153 Central Project Team		
Member	Title	Representing
Prof. Sean Dinneen	Clinical Lead, NCP Diabetes	National Clinical Programme for Diabetes
Dr Diarmuid Quinlan (Vice Chair)	General Practitioner (GP)/ICGP Lead for Diabetes	General Practice
Cliodhna O'Mahony	Programme Manager, NCP Diabetes	National Clinical Programme for Diabetes
Lorna Hurley	Change Manager	Primary Care Strategy and Planning
Clair Naughton	Regional Development Officer, Diabetes Ireland	Diabetes Ireland, Patient Advocacy Group
Margaret Humphreys	Lead for National Diabetes Prevention Programme	National Diabetes Prevention Programme
Siobhan Woods	Primary Care Development Officer	Primary Care, CHW
Katie Murphy	Diabetes Nurse Facilitator, DiGP	Primary Care, CKCH and DiGP
Trish Stephens	Primary Care Network Manager	Community Healthcare Network 7, CHW
Lisa Fitzsimons	Community Dietetic Manager	Dietetic Services
Anne O'Dwyer	Community Dietetic Manager (Acting)	Dietetic Services
David Watterson	Podiatry Manager	Podiatry Services
Imelda Cunning	Podiatry Manager, North & South Lee	Podiatry Services
Nicola Brett	Interim Director of Public Health Nursing North Lee	Public Health Nursing
Andrea Devine	Assistant Director of Public Health Nursing	Public Health Nursing

Membership of the SIF-153 Local Project Team in Community Healthcare West			
Member	Title	Representing	CPT member
Siobhan Woods (Chair)	Primary Care Development Officer	Primary Care	✓
Trish Stephens (Vice Chair)	Primary Care Network Manager	Network 7, CHW	✓
Lorna Ryan (Secretary)	Clerical Office, Galway Primary Care		
Dr Jarlath Deignan	GP Lead	General Practice	
Dr Tomas Griffin	Consultant Endocrinologist	UHG Diabetes Service	
Dr Aaron Liew	Consultant Endocrinologist	PUH Diabetes Service	
Kathy McSharry	Practice Nurse Professional Development Coordinator	Practice Nursing	
Andrea Devine	ADPHN	Nursing (Diabetes Integrated Care)	✓
Bernadette McDonnell	SIF-153 CNS Diabetes Integrated Care		
Audra Conroy	CNS Diabetes Integrated Care		
Elaine Newell	CNS Diabetes Integrated Care		
Lisa Fitzsimons	Community Dietetic Manager	Community Dietetics	✓
Aoiffe Donnellan	SIF-153 Senior Dietitian		
Katriona Kilkelly	Senior Dietitian		
David Watterson	Podiatry Manager	Community Podiatry	✓
Rosemary Roache	SIF-153 Senior Podiatrist		
Lorna Hurley	Change Manager	Primary Care Strategy & Planning	✓

Membership of the SIF-153 Local Project Team in Cork Kerry Community Healthcare			
Member	Title	Representing	CPT member
Majella Daly (Chair until March 2021 when she was reassigned to Head of Primary Care)	Primary Care Services Manager	Primary Care, CKCH	
Katie Murphy (Chairperson April – July 2021)	Diabetes Nurse Facilitator DiGP	Primary Care, CKCH	✓
Dr Diarmuid Quinlan (Vice Chair)	General Practitioner (GP)	General Practice	✓
DR Suzanne Kelly (Vice Chair – whenever DQ stepped down)	General Practitioner (GP)	General Practice	✓
Prof. Colin Bradley	Professor of General Practice	General Practice	
Marie Courtney	Professional development Coordinator for Practice Nursing.	Practice Nursing	
Brendan Quinn	Service User	Diabetes Ireland Patient Rep.	
Pauline Lynch	Regional Development Officer	Diabetes Ireland (patient advocate)	
Anne O'Dwyer	Dietetic Manager (Acting)	Dietetics	✓
Sinead Mulcahy	SIF-153 Senior Diabetes Dietitian		
Imelda Cunning	Podiatry Manager, North and South Lee	Podiatry	✓
Eoin O'Farrell	SIF-153 Senior Diabetes Podiatrist		
Nicola Brett	Interim Director of Public Health Nursing North Lee	Nursing	✓
Ann Wall	CNS Diabetes Integrated Care (Co. Cork)		
Angie O'Brien	CNS Diabetes Integrated Care (Co. Cork)		
Dr Antoinette Tuthill	Consultant Endocrinologist, CUH	CUH Diabetes Service	
Marie Heffernan	ANP (Diabetes) SIVUH	SIVUH Diabetes Service	
Margaret Humphries	Lead for National Diabetes Prevention Programme	National Diabetes Prevention Programme	✓
Louise Creed	Primary Care Pharmacist	Community Pharmacy	
Maeve Carmody	Self-Management support coordinator for Cork and Kerry	Health & Wellbeing	
Shirley O'Shea	Health Promotion Officer (Physical Activity)	Health Promotion Officer	
Dr Cormac Sheehan	Primary Care Research Officer HSE/UCC	Primary Care Research	
Lorna Hurley	Change Manager	Primary Care Strategy and Planning	

APPENDIX 2: Impact of the Covid 19 Pandemic on the Project

As the project being paused in March 2020 due to the Covid 19 pandemic, all planned information, promotional and education sessions for GPs and practices nurses were cancelled and recruitment campaigns were postponed. Four staff members in post were redeployed to contact tracing, testing or other covid related duties. While the project resumed in September 2020, and recruitment campaigns re-launched the landscape had changed considerably because of the pandemic:

- Service development in 'uncertain times' was challenging.
    - There was the ongoing threat of further lockdown.
    - Patients were fearful of attending appointments in hospitals and clinics.
    - Project staff were fearful of redeployment.
    - Further lockdowns were introduced from October 2020 – early December 2020 and again from January 2021 to April 2021, which impacted on service delivery.
- Engagement with key stakeholders was more challenging due to competing priorities
    - GPs had to prioritise Covid-19 over chronic illness management
    - Health service managers had to prioritise pandemic management over new service development initiatives
    - Most practices suspended CNS clinics initially in March 2020 and gradually restarted the service. One CHN 9 Practice has suspended CNS clinic since the pandemic started

To overcome these challenges we took the following steps, as required:

1) We applied to Sláintecare for an amendment to our project outcomes to account for the change from face-to-face appointments to virtual appointments.
2) GP practices were offered virtual meetings to introduce the services, instead of face-to-face meetings.
3) GPs in Galway expressed a wish for CNS clinics to be held in Primary Care Centres rather than within their practices, and this was facilitated.
4) Staff set up Attend Anywhere accounts.
5) Virtual and telephone appointments were offered to patients instead of face-to-face clinics in Cork and Galway
6) In Cork some phone consults were done from GP Practice to access the patient file and discuss management with GP
7) For Staff in Galway, minor adaptations were made to the Diamond system so virtual clinics could be recorded on the clinical information systems.
8) Structured patient education sessions (DESMOND in Galway and Discover Diabetes in Cork) which are usually delivered in face-to-face groups, were moved to virtual delivery. This required special training for educators and strategies to encourage uptake. It also involved securing rooms with high quality video equipment, and this was supported by CHW and CKCH information technology services.
9) In Cork, a planned practice nurse education session was changed from face-to-face to webinar delivery. There was good attendance (11 practice nurses) in spite of the demands on practice nurses who currently also attend weekly ICGP Covid 19 webinars, often in their own time.
10) Educational resource packs were sent to all practices in both sites containing foot-screening posters, flowcharts, ICGP diabetes guidelines and a monofilament.
11) To avoid further disruption to the diabetes services and redeployment of SIF-153 staff community healthcare managers were signposted to the *"HSE Guidelines on the Resumption of*

Diabetes Services during the Covid-19 Pandemic" and the paragraph on redeployment which states:

"All diabetes healthcare professionals who were temporarily redeployed from delivering diabetes care should now be returned to their substantive posts. The new 'frontline' for our health service is dealing with the non-COVID surge of chronic disease complications that are likely to exist as a result of disruption to service delivery."

Impact of the Cyber attack

On 14th May 2020 the HSE was the victim of a cyber-attack which significantly impacted on clinical services for a 4 – 6 week period. As a result, all IT services were shut-down and clinics and virtual education sessions cancelled. All integrated care services, except the dietitian service at the Cork site, are fully electronic and hence were severely affected. Actions to address this challenge:

1) The teams had access to paper referrals which had been printed and filed, and hence had access to each patients basic demographic and medical history as a starting point for the new paper record.
2) Temporary paper patient files were created for patients known to have an upcoming appointment. Space for the secure storage of these files was identified.
3) All correspondence e.g. with GPs and patients was by handwritten letter or telephone.
4) Discover Diabetes and DESMOND patient education programmes that were planned for delivery in May and June 2021 were cancelled, and rescheduled.
5) Fortnightly MDT case discussions were took place via phone instead of videoconference,
6) Paper records have since been transcribed / scanned into the electronic patient information system once all devices were cyber checked.

In March 2021, we published a detailed interim report in which we shared our experience at the 6-month time-point in setting up and delivering a new specialist diabetes integrated care service at community healthcare network level. We also shared some key learning points at that stage of implementation, that may help inform implementation in other sites.

APPENDIX 3: Detailed Methods

Activity and caseload data from the Community Specialist Team

Data collection

Data from the members of the Community Specialist Team on their (a) activity for a 6-month period, December 2020 to May 2021, and (b) 3-month active caseload (December to February and March to May) were analysed. "Active" caseload was defined as patients seen within the past 2 years. People are typically not removed from the caseload unless formally moved to another service. Partial data on activity were also collected by CNS (n=3) who were not part of the Slaintecare Integration Fund (SIF) project (Table xx). Team members collected activity data on numbers of patients (new and return), number of appointments (and whether face to face or by telephone), number of education sessions delivered, number and type of referrals, from their service. All team members were also asked to record whether they received referrals from residential care facilities or homebound patients. They also collected the following information with respect to their caseload: age, sex, diabetes type, GMS status, source of referrals, waiting list and number, number of GP practices engaging with their service. A caseload register was maintained by the SIF CNS in CHN7 (Galway). No such register is maintained by the CNSs that run clinics in GP practices as these CNS clinics are managed by the GP practice.

All team members collected data on the number of patients seen. Non-SIF CNS in CHN7 (Galway) and CHN9 (Cork) had incomplete data on episodes, referrals, and education, and did not submit data on their caseload.

Analysis

Data were entered into Microsoft Excel by each team member and the data collated by the Change Manager. Data were analysed descriptively using formulas in Excel. Patients seen and patient episodes were reported as total and mean (sd) per month. Referrals, education sessions delivered and the number of professionals and patients attending session were reported as total and median (range i.e., min, max) per month. Patient caseload data were reported as frequencies and percentages or mean.

Interviews with the Community Specialist Team

Data collection

Semi-structured interviews (telephone and/or online) were conducted with HCPs (Health Care Professionals) (CNS, Dietitian and Podiatrist at both sites where they had been recruited and non-Slaintecare Integration Fund (SIF) CNS in one site, as well as the project change manager on this Sláintecare Project) . Participants at each site were contacted by the change manager to advertise the evaluation, and those interested contacted the research team. Before the interview, participants were invited to read a participant information sheet and complete a consent form. A topic guide was used to elicit participant's view on the acceptability, and practicality of implementing the integrated care service, including key challenges (barriers and facilitators) to implementation in practice.

Data analysis

Each interview was audio-recorded, transcribed verbatim and analyzed using NVivo software. Interviews were analysed using the Framework Method. Specifically, they were analysed deductively

using the Consolidated Framework for Implementation Research (CFIR) framework, utilizing the CFIR codebook adapted for the project (ref) and guided by the rapid analysis approach used by Keith et al.[1] First, each transcript was coded to 6 core components of the Community Specialist Team. Participant recommendations relevant to the future delivery of the service were coded separately. Coding was done independently initially by two researchers and then compared to ensure consensus on the use of the CFIR codebook. For the purposes of this analysis, the HSE was considered the internal context and setting (e.g., staff, resources, workflows), with outside of the HSE considered the external environment (e.g., policies, patient needs and resources, other services).

Components of the intervention:

1. Working as a team, advertised to primary care practitioners (GPs, practice nurses, public health nurses)
2. Managing referrals to and from the ICT
3. Conducting HCP education
4. Conducting patient 1:1 and structured education
5. Conducting patient appointments
6. Routine monitoring of the service[1]

For each core component of the Community Specialist Team, data segments were coded to one of the five CFIR domains and then coded to the most appropriate and relevant CFIR construct within that domain. Once the data had been coded to CFIR, data were summarised in a matrix for each component and constructs within those, with one row per participant and one column per construct. The matrix was reviewed and descriptions for each construct considered in terms of whether they were barriers or facilitators to implementation or a neutral description of the process of implementation of that component. Barriers and facilitators were considered in terms of whether they were absent or present at individual sites or both sites. Broad themes were developed based on contextualizing the most common constructs (barriers/facilitators) and considering *how* they influenced implementation. Throughout the analysis, the research team met regularly so that additional queries about coding were discussed to resolve any uncertainties.

Survey of General Practice at the beginning of the project

All general practices in CHN7 (Galway) (n=11) and CHN9 (Cork) (n= 18) were asked to complete a survey on what diabetes care they were delivering. The survey was developed for the evaluation and included questions on the practice profile as well as access to specialist and allied diabetes services. There were a variety of closed response type questions, questions with multiple choice responses (MCQs) and questions where respondents could enter a free text answer. For questions which asked about the usefulness of support from allied diabetes services, response options included: not very useful, moderately useful, a little useful and not particularly useful. The survey was administered December 2020- January 2021.

[1]routine monitoring is expected component of the ICT intervention; however additional data were collected to fulfil reporting and evaluation requirements for Pobal

Data Collection

The survey (**Appendix 5**) was self-completed by practices or administered by a health care professional from the new Community Diabetes Specialist Team, along with the information sheet and consent form. The survey was completed during a phone call with the health care professional or returned by post.

Data Management

Data were entered into Excel and pseudo-anonymised before importing into SPSS version 26 for further cleaning, coding, and statistical analysis.

As some respondents did not provide figures for the total practice patient population, the total was calculated by summing the number of GMS patients and non-GMS (private) patients. Similarly, total T2D caseload was calculated from T2D GMS and T2D non-GMS (private). Where duplicate data were provided, for example, two respondents from the same practice (e.g., a GP and a PN), then the data provided by the staff member deemed to be more involved in routine diabetes management, was used as the data for that practice. Results were generated by overall respondents, and by site.

Data Analysis

Data was analysed using SPSS to generate descriptive statistics for the practices in each network (e.g., practice size, staff, delivery of structured care, access to dietetic, podiatry, psychology and CNS services, available support and CPD). Median values are presented, alongside the range, for practice staff, practice population figures, and diabetes caseload figures e.g., the median lies at the midpoint between the minimum and maximum range. For questions which were multiple choice, it was noted for that table e.g., "MCQs". For these MCQ questions, the % of respondents in the columns do not add up as they do for non-MCQ questions. All results are reported as the % of practices who responded to that question. Median caseload per GP was calculated by dividing the total practice caseload by the number of WTE GPs, assuming balanced caseload across all GPs.

GP/PN interviews and focus groups

Data Collection

All 29 GP practices were contacted by e-mail by a member of the CST to invite them to participate in a one-to-one interview (up to 30 minutes long) with a researcher at a time of their choosing. Semi structured telephone interviews were conducted with GPs who had volunteered to be interviewed as part of the project. Before the interview, participants were invited to read a participant information sheet and complete a consent form. A topic guide was used to elicit participants experience of the community diabetes specialist service.

All practice nurses across both network that were known to the local HSE Practice Nurse Professional Development Coordinators (PDC) were contacted by the PDC by e-mail to invite them to participate in one of two evening virtual focus groups (up to 1 hour long). A topic guide was used to elicit participants experience of the community diabetes specialist service.

Data Analysis

Each telephone interview and both focus groups were audio-recorded, transcribed and analysed using thematic analysis.

Experience of People with diabetes

Development of patient questionnaire

The survey was developed by the evaluation team. Questions on patient experiences of integrated care included questions adapted from the National Patient Experience and the Patient Perceptions of Integrated Care (PPIC) survey questionnaires (1,2). Dimensions of integrated care addressed by questionnaire focused on accessibility of the community diabetes service, communication with the patient and between health care professionals, access to information and person-centredness of the consultation.

The 5 item CARE person-centred process measure which measures person-centredness and empathy during a one-on-one consultation between a health care professional and a patient was also included. The scoring system for each item in the 5 item CARE measure is 'poor'=1, 'fair' = 2, 'good' = 3, 'very good' = 4, and 'excellent'=5. All 5 items are then added, giving a maximum possible score of 25, and a minimum of 5. Three open-ended questions were included at the end of the questionnaire asking respondents to comment on positive aspects about the consultation, aspects that could be improved and any general overall feedback on their diabetes care.

Administration of the patient questionnaire

The Community Specialist Team HCPs (CNS-integrated care, dietitian, podiatrist) handed out flyers advertising the intention to conduct a survey of people with type 2 diabetes attending the Community Specialist Team service to eligible participants attending clinics in the first 2 weeks of May 2021. The flyer outlined the aim which was to measure patient experiences of attending different members (CNS-integrated care, dietitian, podiatrist) of the community integrated teams in Community Healthcare West (CHN7 (Galway)) and Cork Kerry Community Healthcare (CHN9 (Cork)) to inform service improvements.

The flyer informed them of the purpose of the study, that a questionnaire would be posted out to them, and that their participation was voluntary. The HCPs provided the change manager (LH) with the names of eligible participants who had received a flyer. LH posted out the patient information sheet, consent form and questionnaire and a pre-paid self-addressed envelope for returning the questionnaire to eligible participants. The name and speciality of the Community Specialist Team member that the person had attended was also included on the questionnaire.

A contact number for the change manager was provided if the person had any questions about the survey or if they wanted to request help filling out the questionnaire. The questionnaire (appendix 6) focused on people's experiences of attending members of the integrated diabetes care service and measured service accessibility, communication between HCPs, communication between HCP and patients, person-centredness of the consultation and linkages to other resources and support,

Patient questionnaire data analysis

Data was entered into SPSS version 27 for data analysis. Descriptive statistics were used to summarize and analyse characteristics. Open-ended responses were analysed thematically.

Patient interview data collection

Semi-structured telephone interviews were carried out with 9 people who were purposively selected from those who had completed a postal questionnaire and consented to be interviewed by the researcher.

Patient interview data analysis

Each telephone interview was audio-recorded, transcribed and analysed using thematic analysis.

APPENDIX 4: Supplementary data from interviews with the Community Diabetes Specialist Team

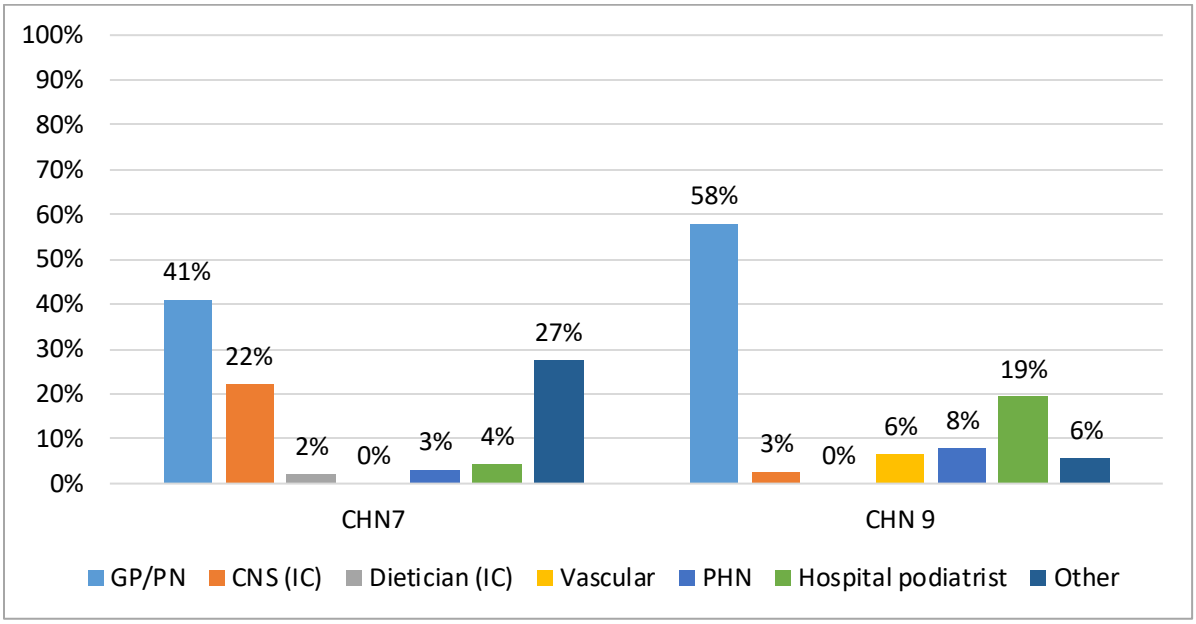


Figure: Source of referrals to Podiatry in CHN7, Galway and CHN9, Cork (caseload audit, May 2021)

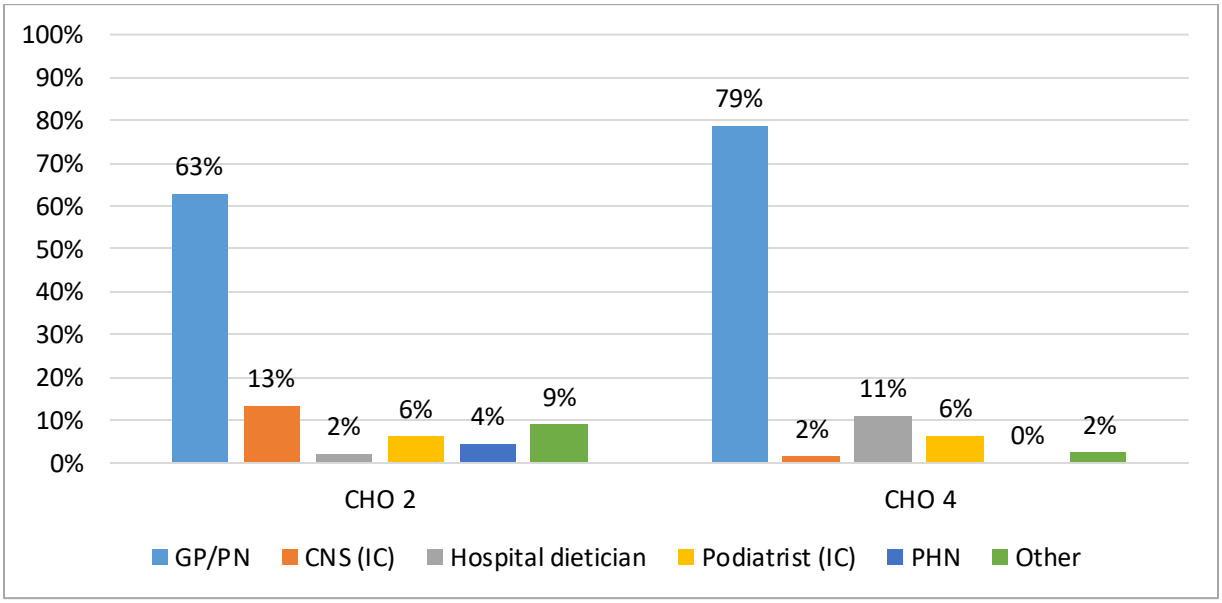


Figure: Source of referrals to Dietetics in CHN7, Galway, and CHN9, Cork (caseload audit, May 2021)

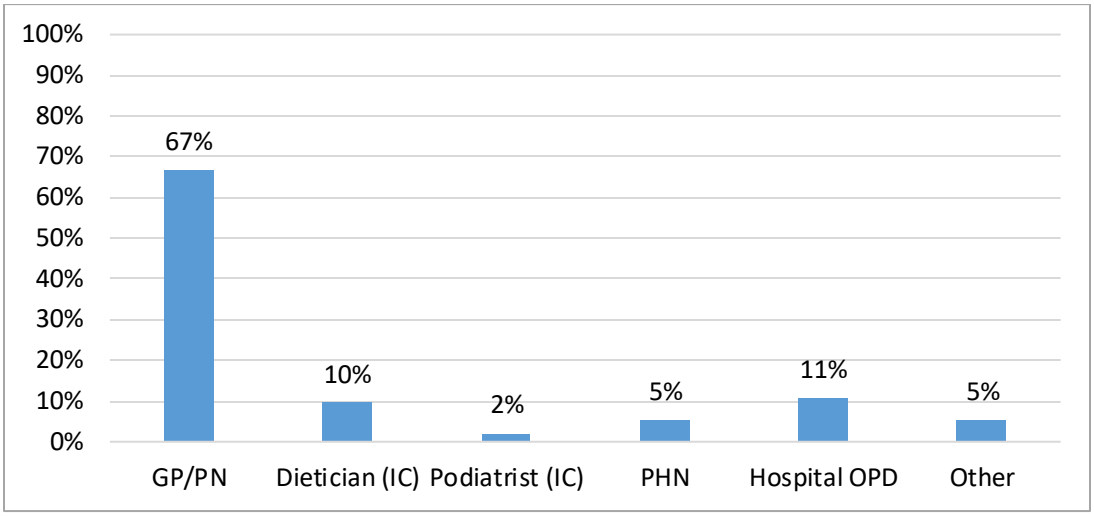
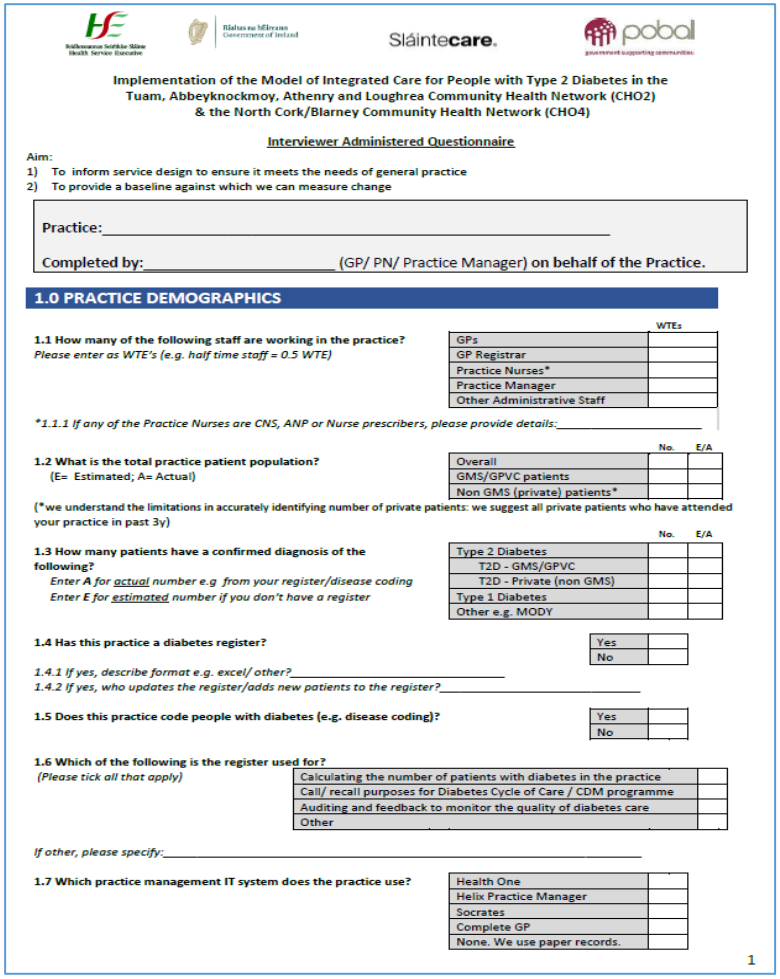


Figure: Source of referrals to the CNS in CHN7, Galway (caseload audit, May 2021)

APPENDIX 5: GP Survey and Supplementary Data from the Survey and Interviews



Sláintecare.

Implementation of the Model of Integrated Care for People with Type 2 Diabetes in the Tuam, Abbeyknockmoy, Athenry and Loughrea Community Health Network (CHO2) & the North Cork/Blarney Community Health Network (CHO4)

Interviewer Administered Questionnaire

Aim:
1) To inform service design to ensure it meets the needs of general practice
2) To provide a baseline against which we can measure change

Practice:_____

Completed by:_____ (GP/ PN/ Practice Manager) on behalf of the Practice.

1.0 PRACTICE DEMOGRAPHICS

1.1 How many of the following staff are working in the practice?
Please enter as WTE's (e.g. half time staff = 0.5 WTE)

	WTEs
GPs	
GP Registrar	
Practice Nurses*	
Practice Manager	
Other Administrative Staff	

**1.1.1 If any of the Practice Nurses are CNS, ANP or Nurse prescribers, please provide details:*_____

1.2 What is the total practice patient population?
(E= Estimated; A= Actual)

	No.	E/A
Overall		
GMS/GPVC patients		
Non GMS (private) patients*		

(*we understand the limitations in accurately identifying number of private patients: we suggest all private patients who have attended your practice in past 3y)

1.3 How many patients have a confirmed diagnosis of the following?
*Enter **A** for actual number e.g from your register/disease coding*
*Enter **E** for estimated number if you don't have a register*

	No.	E/A
Type 2 Diabetes		
T2D - GMS/GPVC		
T2D - Private (non GMS)		
Type 1 Diabetes		
Other e.g. MODY		

1.4 Has this practice a diabetes register? Yes / No

*1.4.1 If yes, describe format e.g. excel/ other?*_____
*1.4.2 If yes, who updates the register/adds new patients to the register?*_____

1.5 Does this practice code people with diabetes (e.g. disease coding)? Yes / No

1.6 Which of the following is the register used for?
(Please tick all that apply)

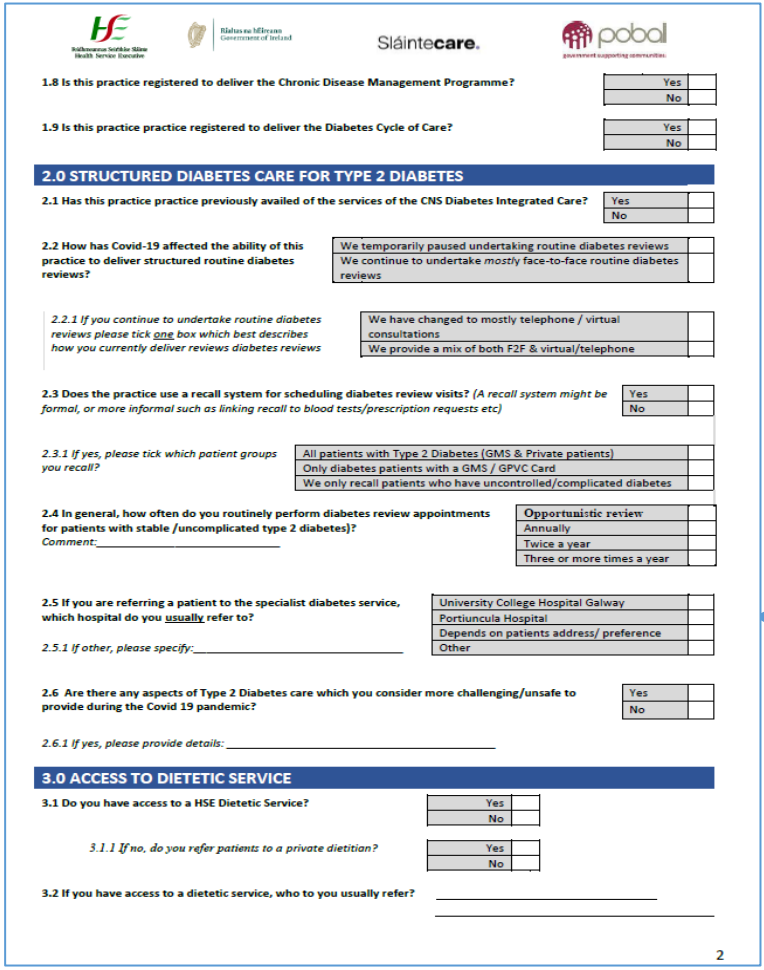
- Calculating the number of patients with diabetes in the practice
- Call/ recall purposes for Diabetes Cycle of Care / CDM programme
- Auditing and feedback to monitor the quality of diabetes care
- Other

*If other, please specify:*_____

1.7 Which practice management IT system does the practice use?

- Health One
- Helix Practice Manager
- Socrates
- Complete GP
- None. We use paper records.

1



Sláintecare.

1.8 Is this practice registered to deliver the Chronic Disease Management Programme? Yes / No

1.9 Is this practice practice registered to deliver the Diabetes Cycle of Care? Yes / No

2.0 STRUCTURED DIABETES CARE FOR TYPE 2 DIABETES

2.1 Has this practice practice previously availed of the services of the CNS Diabetes Integrated Care? Yes / No

2.2 How has Covid-19 affected the ability of this practice to deliver structured routine diabetes reviews?

- We temporarily paused undertaking routine diabetes reviews
- We continue to undertake *mostly* face-to-face routine diabetes reviews

2.2.1 If you continue to undertake routine diabetes reviews please tick one box which best describes how you currently deliver reviews diabetes reviews

- We have changed to mostly telephone / virtual consultations
- We provide a mix of both F2F & virtual/telephone

2.3 Does the practice use a recall system for scheduling diabetes review visits? *(A recall system might be formal, or more informal such as linking recall to blood tests/prescription requests etc)* Yes / No

2.3.1 If yes, please tick which patient groups you recall?

- All patients with Type 2 Diabetes (GMS & Private patients)
- Only diabetes patients with a GMS / GPVC Card
- We only recall patients who have uncontrolled/complicated diabetes

2.4 In general, how often do you routinely perform diabetes review appointments for patients with stable /uncomplicated type 2 diabetes)?
*Comment:*_____

- Opportunistic review
- Annually
- Twice a year
- Three or more times a year

2.5 If you are referring a patient to the specialist diabetes service, which hospital do you usually refer to?

- University College Hospital Galway
- Portiuncula Hospital
- Depends on patients address/ preference
- Other

*2.5.1 If other, please specify:*_____

2.6 Are there any aspects of Type 2 Diabetes care which you consider more challenging/unsafe to provide during the Covid 19 pandemic? Yes / No

2.6.1 If yes, please provide details: _____

3.0 ACCESS TO DIETETIC SERVICE

3.1 Do you have access to a HSE Dietetic Service? Yes / No

3.1.1 If no, do you refer patients to a private dietitian? Yes / No

3.2 If you have access to a dietetic service, who to you usually refer? _____

2

- Cork University Hospital
- South Infirmary Victoria University Hospital
- Mercy University Hospital
- Bantry General Hospital
- Mallow General Hospital
- The Mater Private Hospital
- The Bons Secours Hospital
- Other

3.3 Do you have the following resources in the practice

Height measure	
Measuring tape for waist circumference	
Diabetes & Diet leaflets/online resources	

3.4 Before the Covid-19 pandemic did you refer patients with newly diagnosed Type 2 Diabetes to a group-based Structured Diabetes Education Programme?

Always	
Usually	
Never	
Not available locally	

3.3.1 If yes, which programme you refer to? (Please tick all that apply)

Discover Diabetes	
DESMOND	
CODE	

*3.3.2 If you don't refer, please clarify why:*_____

4.0 FOOT CARE AND PODIATRY ACCESS

4.1 Do you have access to a HSE Podiatry Service?

Yes	
No	

4.1.1 If no, do you refer patients to a private podiatrist?

Yes	
No	

4.2 If you have access to a Podiatry service, who do you usually refer? _____

4.3 Do you have access to the following foot screening resource in the practice?

10g Monofilament	
128 Hz Tuning Fork	
Foot care leaflets	

4.4 Do you perform annual foot screening as part of the patients diabetes review?

Yes	
No	

4.4.1 If yes, who performs this assessment?

GP	
Practice Nurse	
Other	

*4.4.2 If other, please specify:*_____

4.3 Have staff in this practice been trained in diabetic foot screening?

Yes	
No	

*If yes, provide details (staff members name, course, date:*_____

Would further training in diabetic foot screening be useful?

Yes	
No	

5.0 ACCESS TO PSYCHOLOGICAL SUPPORT

5.1 Has the practice access to a HSE Psychology/Counselling service?

Yes	
No	

*If yes, please provide details:*_____

6.0 DIABETES SUPPORT & CPD

6.1 Has any staff member completed a healthcare professional diabetes education programme?

Yes	
No	

6.1.1 If yes, please provide detail (staff members name, course, date) _____

6.2 Has your practice any specific education/training needs relating to diabetes care?

Yes	
No	

*6.2.1 If yes, please provide details:*_____

6.3 How useful would it be to have 'shadowing' opportunities for any of the practice staff with the CNS, Podiatrist or Dietitian? *(i.e. observing a clinic)*

Not particularly useful	
A little useful	
Moderately useful	
Very useful	

6.4 How useful would it be to have the network <u>Diabetes Dietitian</u> support the management of your diabetes patients in the community?

Not particularly useful	
A little useful	
Moderately useful	
Very useful	

6.4.1 If you wouldn't find this service useful, please explain: _____

6.5 How useful would it be to have the network <u>Diabetes Podiatrist</u> support the management of your diabetes patients in the community?

Not particularly useful	
A little useful	
Moderately useful	
Very useful	

*6.5.1 If your practice wouldn't find this service useful, please explain:*_____

6.6 How useful would it be to have the network <u>Diabetes CNS</u> support the management of your diabetes patients in the community?

Not particularly useful	
A little useful	
Moderately useful	
Very useful	

*6.6.1 If your practice wouldn't find this service useful, please explain:*_____

6.7 If this practice would find the support of a CNS Diabetes useful, please indicate your preferred method of support:

Usually (in non-covid times)

- Run clinics within our practice for selected patients with complicated diabetes
- OR
- Review selected patients with complicated diabetes in the Primary Care Centre

During the Covid 19 Pandemic

- Deliver face-to-face / virtual / telephone consultations from our practice
- OR
- Deliver face-to-face /telephone /virtual consultations from the Primary Care Centre

6.7 In what other way can the new Diabetes Integrated Care Team support this practice?

*Please provide details:*_____

_____

6.8 Is there anything that you would like to add in relation to diabetes care at this practice?

*Please provide details:*_____

THANK YOU FOR TAKING THE TIME TO COMPLETE THIS QUESIONNAIRE

GP Survey: Diabetes register, recall system and other diabetes services at the practice (N=15)			
	N (%)	N (%)	N (%)
	Overall (N=15)	CHN9 (Cork) (N=10)	CHN7 (Galway) (N=5)
Practice register	13 (87)	10 (100)	3 (60)
Register format (FT)	Overall (N=6)	CHN9 (Cork) (N=4)	CHN7 (Galway) (N=2)
Excel	3 (50)	2 (50)	1 (50)
Within Socrates	2 (33)	1 (25)	0
Other	1 (17)	1 (25)	1 (50)
Register update (FT)	Overall (N=7)	CHN9 (Cork) (N=4)	CHN7 (Galway) (N=3)
GP only	1 (14)	1 (25)	0 (0)
Practice nurse only	2 (29)	1 (25)	1 (33)
Any practice staff	2 (29)	1 (25)	1 (33)
All clinical staff	2 (29)	1 (25)	1 (33)
Register use (MCQ)	Overall (N=15)	CHN9 (Cork) (N=10)	CHN7 (Galway) (N=5)
Calculating patients	6 (40)	4 (40)	2 (40)
Call/recall Cycle of Care/CDM	11 (73)	7 (70)	4 (80)
Quality auditing and feedback	7 (47)	5 (50)	2 (40)
Use recall system	11 (73)	8 (80)	3 (60)
Patient groups recalled (MCQ)	Overall (N=15)	CHN9 (Cork) (N=10)	CHN7 (Galway) (N=5)
T2D (GMS & private patients)	7 (47%)	5 (50%)	2 (40%)
GMS/GPVC only	2 (13%)	1 (10%)	1 (20%)
Not indicated	2 (13%)	2 (20%)	0 (0%)
Frequency of review (T2D)	Overall (N=15)	CHN9 (Cork) (N=10)	CHN7 (Galway) (N=5)
Annually	3 (20)	1 (10)	2 (40)
Twice a year	12 (80)	9 (90)	3 (60)
	Overall (N=13)	CHN9 (Cork) (N=8)	CHN7 (Galway) (N=5)
Coding people with diabetes	13 (100)	8 (100)	5 (100)
Practice Management IT system (MCQ)	Overall (N=14)	CHN9 (Cork) (N=9)	CHN7 (Galway) (N=5)
Health One	3 (21)	3 (33)	0 (0)
Helix Practice Manager	4 (29)	2 (22)	2 (40)
Socrates	7 (50)	4 (44)	3 (60)
	Overall (N=15)	CHN9 (Cork) (N=10)	CHN7 (Galway) (N=5)
Registered to deliver: CDM	15 (100)	10 (100)	5 (100)
Cycle of Care	14 (93)	10 (100)	4 (80)

Referring to hospital-based specialist diabetes services

Cork University Hospital (CUH) (n=8) and South Infirmary-Victoria University Hospital (SIVUH) (n=8) were the main diabetes referral centres in CHN9 (Cork), followed by the Bons Secours Hospital (Bons) (n=2) and the Mercy University Hospital (MUH)(n=1) cited by the 10 practices who responded. Of the five practices that responded in CHN7 (Galway), University Hospital Galway (UHG) was the main diabetes referral centre (n=4), though 2 respondents also flagged that referral may depend on the address or preference of the person with diabetes.

Supplementary findings from analyses of GP interviews and Practice Nurse focus groups

Practice Nurses and GPs were unanimous, in the positivity towards the Community specialist team, and the challenges remaining; mainly IT supports, and the difference in care offered to private patients and GMS patients.

Outlined below are several sections supported from data collected during interviews and focus groups, which trace the changes of diabetes care as expressed by Practice Nurses and GPs, their views on the Community specialist team, and the challenges in dealing with uncontrolled diabetes, the impact of Covid-19 and, and remaining tasks such as improvement in IT supports, and the care offered to private patients.

From ad-hoc unstructured care and over dependence on hospital referral to structured care within the community.

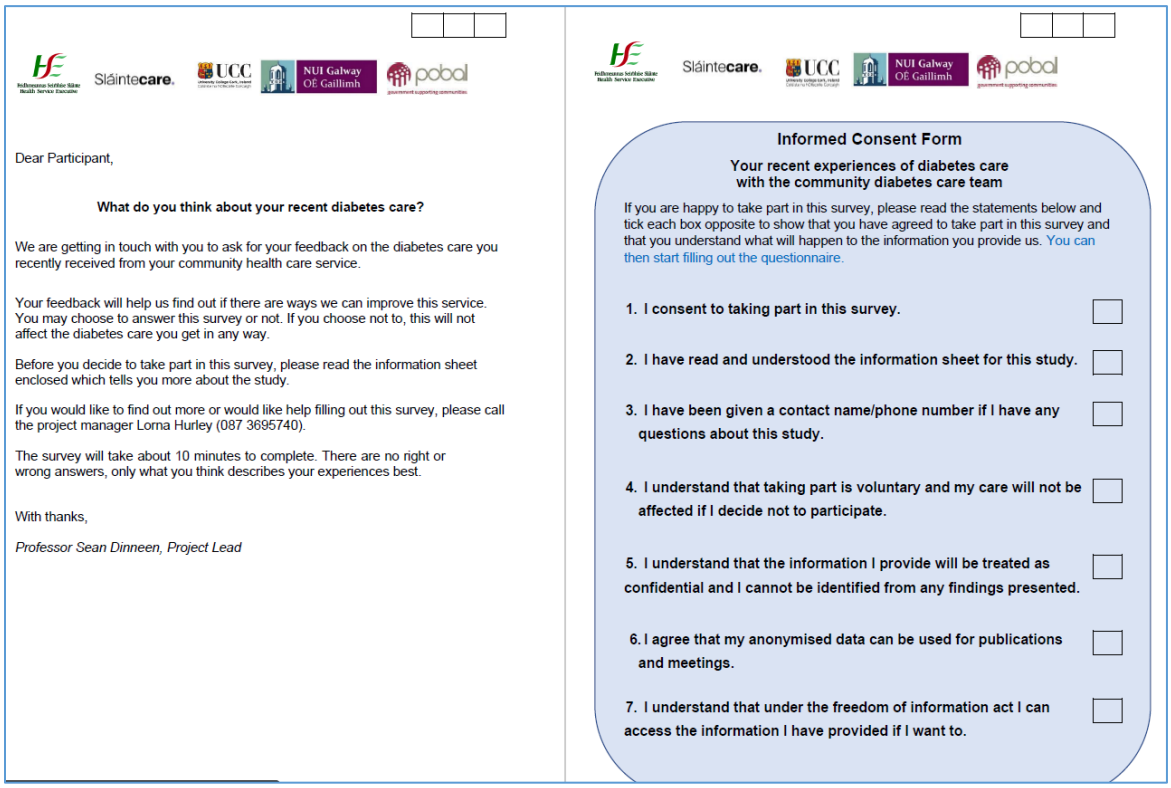
The delivery of diabetes care has changed considerably in primary care over the last fifteen years. The Chronic Disease Management Programme brought structure to diabetes care, mainly through routine check-ups, bloodwork, and recall for patients.

> "Well, in my practice I'm responsible for the management of chronic disease. The bulk of the patients would be diabetics. So, since the introduction of chronic disease, we've seen a lot more diabetes, we've been addressing the diabetes quite frequently really. There are two visits in the year, and then it is my responsibility to refer the patients to the relevant supports." (PN2)

Uncontrolled diabetes was routinely referred to outpatient hospital treatment. This still happens but with far less frequency.

> "We used to refer people with diabetes to hospital all the time, that's just the way it was' (PN1).
>
> "Fifteen years ago, we used to refer everyone to hospitals. There were a couple of reasons for that. There was not enough endocrinologists in Cork and if we didn't refer there was never going to be more posts filled, that was done at the time. In recent years, we don't refer anybody with newly diagnosed type 2 because the care is adequate in primary care, really only those who are uncontrolled." (PN3)

APPENDIX 6: Patient experience questionnaire and supplementary data



Dear Participant,

What do you think about your recent diabetes care?

We are getting in touch with you to ask for your feedback on the diabetes care you recently received from your community health care service.

Your feedback will help us find out if there are ways we can improve this service. You may choose to answer this survey or not. If you choose not to, this will not affect the diabetes care you get in any way.

Before you decide to take part in this survey, please read the information sheet enclosed which tells you more about the study.

If you would like to find out more or would like help filling out this survey, please call the project manager Lorna Hurley (087 3695740).

The survey will take about 10 minutes to complete. There are no right or wrong answers, only what you think describes your experiences best.

With thanks,

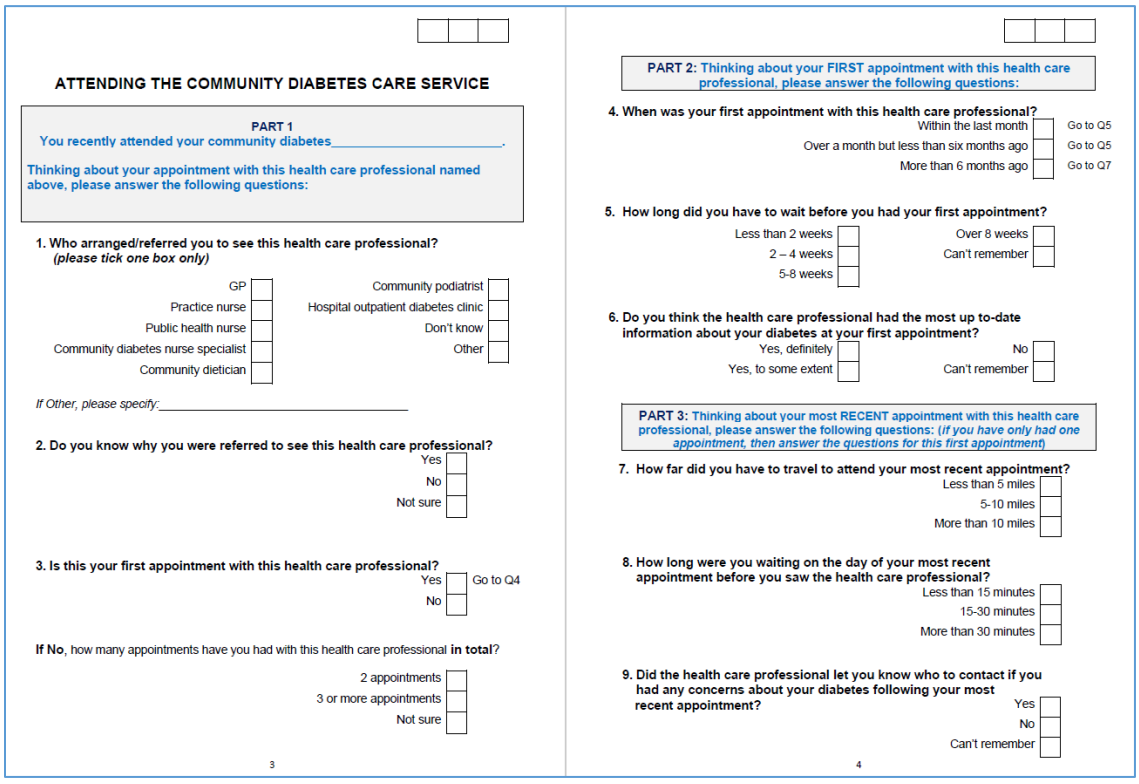
Professor Sean Dinneen, Project Lead

Informed Consent Form

Your recent experiences of diabetes care with the community diabetes care team

If you are happy to take part in this survey, please read the statements below and tick each box opposite to show that you have agreed to take part in this survey and that you understand what will happen to the information you provide us. You can then start filling out the questionnaire.

1. **I consent to taking part in this survey.** ☐
2. **I have read and understood the information sheet for this study.** ☐
3. **I have been given a contact name/phone number if I have any questions about this study.** ☐
4. **I understand that taking part is voluntary and my care will not be affected if I decide not to participate.** ☐
5. **I understand that the information I provide will be treated as confidential and I cannot be identified from any findings presented.** ☐
6. **I agree that my anonymised data can be used for publications and meetings.** ☐
7. **I understand that under the freedom of information act I can access the information I have provided if I want to.** ☐



ATTENDING THE COMMUNITY DIABETES CARE SERVICE

PART 1
You recently attended your community diabetes_____.

Thinking about your appointment with this health care professional named above, please answer the following questions:

1. Who arranged/referred you to see this health care professional? ***(please tick one box only)***

GP ☐ | Community podiatrist ☐
Practice nurse ☐ | Hospital outpatient diabetes clinic ☐
Public health nurse ☐ | Don't know ☐
Community diabetes nurse specialist ☐ | Other ☐
Community dietician ☐

*If Other, please specify:*_____

2. Do you know why you were referred to see this health care professional?

Yes ☐
No ☐
Not sure ☐

3. Is this your first appointment with this health care professional?

Yes ☐ Go to Q4
No ☐

If No, how many appointments have you had with this health care professional **in total**?

2 appointments ☐
3 or more appointments ☐
Not sure ☐

3

PART 2: Thinking about your FIRST appointment with this health care professional, please answer the following questions:

4. When was your first appointment with this health care professional?

Within the last month ☐ Go to Q5
Over a month but less than six months ago ☐ Go to Q5
More than 6 months ago ☐ Go to Q7

5. How long did you have to wait before you had your first appointment?

Less than 2 weeks ☐ | Over 8 weeks ☐
2 – 4 weeks ☐ | Can't remember ☐
5-8 weeks ☐

6. Do you think the health care professional had the most up to-date information about your diabetes at your first appointment?

Yes, definitely ☐ | No ☐
Yes, to some extent ☐ | Can't remember ☐

PART 3: Thinking about your most RECENT appointment with this health care professional, please answer the following questions: (*if you have only had one appointment, then answer the questions for this first appointment*)

7. How far did you have to travel to attend your most recent appointment?

Less than 5 miles ☐
5-10 miles ☐
More than 10 miles ☐

8. How long were you waiting on the day of your most recent appointment before you saw the health care professional?

Less than 15 minutes ☐
15-30 minutes ☐
More than 30 minutes ☐

9. Did the health care professional let you know who to contact if you had any concerns about your diabetes following your most recent appointment?

Yes ☐
No ☐
Can't remember ☐

4

PART 4: Thinking about your appointment(s) in general with this health care professional, please answer the following questions:

10. Did you think there was enough time to discuss your diabetes care and treatments during your appointment (s)?

Yes, definitely ☐ Yes, to some extent ☐ No ☐

11. Did the health care professional ever ask you how your diabetes affects your everday life?

Yes, definitely ☐ Yes, to some extent ☐ No ☐

12. Do you think the health care professional provided you with enough information to help you manage your diabetes?

Not enough ☐ Right amount ☐ Too much ☐

13. Were you involved as much as you wanted to be in discussions about your diabetes care and treatment?

Yes, definitely ☐ Yes, to some extent ☐ No ☐

14. Do you feel more confident about managing your diabetes after seeing this health care professional?

Yes, definitely ☐ Yes, to some extent ☐ No ☐

15. Did the health care professional provide you with any other information (*for example, information leaflets, useful websites, information about diabetes education programmes*) to help you manage your diabetes?

Yes ☐ No ☐ Can't remember ☐

16. Did the health care professional organise/refer you to see another health care professional about your diabetes care?

Yes ☐ No ☐

If Yes, please specify who she organised/referred you to see?_____

17. How was the health care professional at….

(*please tick ONE box that best describes your experience*)

a) ….making you feel happy and relaxed ?

(By being friendly, caring and making you feel calm)

b) …asking questions and letting you talk?

(By being interested in you and giving you time to speak)

c) …listening and understanding?

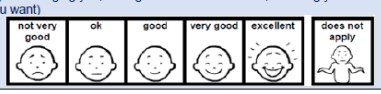
(by paying attention, knowing the things you find difficult)

d)… explaining things?

(by answering questions, giving you clear information and instructions)

e)… making a plan?

(by encouraging you, talking about what to do next, involving you as much as you want)



PART 5

People with type 2 diabetes attend different health care professionals/clinics for their diabetes care.

Thinking about the different health care professionals you have seen ABOUT YOUR DIABETES, please answer the following questions:

18. Which of the following health care professionals/clinics have you attended about your diabetes in the last 12 MONTHS?
(*please tick all that apply*)

GP ☐ Podiatrist ☐
Practice nurse ☐ Hospital outpatient diabetes clinic ☐
Diabetes nurse specialist ☐ Retinal Screen Clinic ☐
Dietician ☐ Other (*please specify*) ☐

*If Other, please specify who else you have seen:*_____

19. How often do you repeat information about your diabetes to different health care professionals involved in your diabetes care?

Never ☐
Sometimes ☐
Usually ☐
Always ☐

20. How often were you confused because different health care professionals told you different things about how to manage your diabetes?

Never ☐
Sometimes ☐
Usually ☐
Always ☐

21. Do you think the health care professionals involved in your diabetes care work together as a team to help you manage your diabetes?

Never ☐
Sometimes ☐
Usually ☐
Always ☐

PART 6

About You:

22. Are you: **Male:** ☐ **Female:** ☐

23. What is your age?

Under 40 ☐ 66-70 ☐
41-55 ☐ Over 70 ☐
56-65 ☐

24. When were you diagnosed with diabetes by a doctor/nurse?

Less than 12 months ago ☐ 3-5 years ago ☐
1-2 years ago ☐ More than 5 years ago ☐

25. If you have any other comments, please write them in the box below:

a) Was there anything particularly good about the diabetes care you received from this health care professional?

b) Was there anything that could have been improved?

c) Any other comments about your diabetes care?

Consultation type and source of referral (n = 41)		N	%
Seen by	Dietitian	19	46%
	Podiatrist	15	37%
	CNS	7	17%
Type of consultation	Face to face	33	80%
	Telephone	8	19%
Number of consultations	1st consultation	23	56%
	2+ consultations	18	44%
Referred by	GP	25	61%
	Practice Nurse	6	15%
	Other Diabetes CST HCP*	3	7%
	Hospital inpatient	2	5%
	Hospital outpatient dept	5	12%
Referred to other Diabetes CST HCP*		9	22%
Referred to self-management education		2	5%

Patients reported experience of the consultation			
		n	%
Enough time to discuss your diabetes care and treatments during your appointment(s)? (n = 41)	Yes, definitely	36	88
	Yes, to some extent	3	7
	No	2	5
HCP provided you with enough information to help you manage your diabetes	Not enough	2	5
	Right amount	37	93
	Too much	1	2
Received other information (information leaflets, useful websites, information about diabetes education programmes) to help you manage your diabetes	Yes	36	88
	No	2	5
	Can't remember	3	7
HCP asked you how your diabetes affects your everyday life	Yes, definitely	23	56
	Yes, to some extent	11	27
	No	7	17
Who to contact if you had any concerns about your diabetes following your appointment	Yes	32	82
	No	3	8
	Can't remember	4	10
Involved as much as you wanted to be in discussions about your diabetes care and treatment	Yes, definitely	32	78
	Yes, to some extent	8	20
	No	1	2
Felt more confident about managing their diabetes after seeing HCP	Yes, definitely	30	73
	Yes, to some extent	9	22
	No	2	5

APPENDIX 7: Case studies

Case A – Prompt intervention resulting in foot ulcer prevention

Case A is an active 69-year-old gentleman who was diagnosed with Type 2 Diabetes two years previously. He drives a lorry x4 days per week (early shift - finishes at around 12) and is also a farmer. He had been referred by the GP to the CNS and dietitian (Community specialist team) for review and education as his HbA1c was 64mmol/mol. He had adjustments made to his medication and was supported in developing a dietary and physical activity plan.

On foot examination, the CNS was very concerned about a vulnerable area on the 1st MTPJ. While the patient had been attending the podiatry service in Merlin Park Hospital, he had cancelled his last appointment due to work commitments. The CNS made an emergency referral to the Podiatrist (Community specialist team) who saw the patient in his local health centre the next day. The podiatrist identified a very vulnerable lesion at the site of a previous neuropathic ulcer. Podiatry treatment was carried out and the patient was followed up closely. He has a pes-cavus foot type and was referred and fitted for orthotics. The podiatrist (community specialist team) will continue to monitor this gentleman regularly as he is classified as in-remission in the new Model Of Care For the Diabetic Foot. This prompt identification, referral and treatment delivered locally has prevented re-ulceration at that vulnerable site.

Case Study B – Timely access to support with lifestyle change

Case B is a 53-year-old woman, who was diagnosed with Type 2 Diabetes two years previously. She had a very busy hectic lifestyle, with a stressful job involving lots of driving. She reported poor sleep and little routine. She had been referred by her GP to the CNS and Dietitian (community specialist team) has her HbA1c was >100mol/mol. On review of medication, the CNS identified that the patient had misunderstood her medication regimen and had been taking an incorrect dose. She reported skin irritation, likely due to the elevated HbA1c. Adjustments were made to her regimen and education provided. On foot examination, the patient was found to have a moderate risk foot type with signs and symptoms of neuropathy and therefore was referred to the podiatrist for annual review.

On dietary assessment, she reported being "addicted" to sugar and caffeine but was very motivated and eager to make lifestyle changes. She had three appointments with the dietitian and succeeded lowering her HbA1c from 105mmol/l (October 2020) to 56 mmol/mol (February 2021) and had gradual weight loss (BMI 29 to 27.9). On review she reported much better sleep, and had started yoga and walking. She also reported more routine, reduced cravings, reduced sugar intake and less neuropathic symptoms and skin irritation. This lady sent the team a thank you card stating "I just wanted to thank you for my appointment yesterday, for listening to me, and being such an amazing support on my journey to health and wellbeing"

Input from the community specialist team: CNS appointments x 2; Podiatry appointment X 1; Dietitian appointment x 3

Case Study C – Fast-track access to secondary care ensuring "right care in the right place by the right team"

Case C was a 47-year-old gentleman who had been diagnosed with Type 2 Diabetes 6 years previously and has a history of cardiovascular disease. His GP had referred him to the CNS for due to his sub-optimal Hba1c. He had been referred to secondary care previously but had not engaged as he was busy with farming, factory work, caring for his elderly father and childcare.

On assessment, his HbA1c was 75mmol/mol and his eGFR was 43ml/min (October 2020) reducing to 37ml/min (December 2021). He was being treated with Jardiance and Metformin for his diabetes. The CNS presented the case at the regular MDT case discussion meeting with the consultant endocrinologists and the following plan was agreed: a) due to his poor and declining renal function, the CNS would escalate his referral to secondary care, and arrange an urgent appointment at a specialist diabetes-renal clinic in University Hospital Galway, b) in the meantime the CNS would liaise with the GP and recommend a treatment change to Insulin/GLP1 (Xultophy) and the addition of an ACE inhibitor. The CNS discussed this recommendation with the GP who agreed with this plan.

The patient reported that attending the local primary care centre made it much easier for him to engage due to his other commitments. He was seen in twice in the diabetes-renal clinic and is awaiting a renal US. In the interim, he has been seen by the CNS for medication titration and by the dietitian for support with dietary and lifestyle changes. He has had a challenging time recently due to the death of his father from Covid 19. Last HbA1c had increased to 89mmol/mol but his renal function had improved - eGFR 53/ mmol.

He was referred to the Podiatrist (community specialist team) as he had a moderate risk foot type and she referred him for orthotics to improve weight distribution as he had painful prominent metatarsal heads. He was also referred to Diabetic Retinascreen and attended in April 2021.

Case D – Holistic care of a patient with diabetic foot disease

Case D was a 76 year old lady with Type 2 Diabetes for 30 years. She has a mild intellectual disability, bi polar, peripheral vascular disease and peripheral neuropathy. She was a resident in the COPE foundation.

She was referred by her GP to the vascular department in the Mercy University Hospital (MUH) with diabetic neuropathic foot wounds. She was not under an endocrinologist. She was reviewed by the Vascular Consultant in the dressing clinic in the MUH. Patients with active foot disease should be under an Endocrinologist with a Multidisciplinary Foot Protection Team as per the Model of Care for the Diabetic Foot. A referral to the Endocrinology Department in the South Infirmary University Hospital was arranged.

It was agreed locally that until the patient was under the care of an Endocrinologist with a multidisciplinary foot protection team they could be reviewed by the Integrated Care Podiatrist under the clinical governance of the vascular team in the MUH. This allowed the patient to have podiatric input until an appointment with Endocrinology was arranged. After four weeks of attending the Podiatry Clinic in the Mercy University Hospital the wounds healed and a referral was made to Integrated Care Podiatrist in St Marys Primary Care Centre.

At the initial appointment in Podiatry it was noted that this patients HbA1c was 60 mmol/mol (Feb 2021) so a referral was sent to the integrated care dietitian. Due to the patients poor mobility a joint clinic with Podiatry and dietetics was arranged in the same clinical room. This allowed the patient to see both the Podiatrist and Dietitian on the same day.

This patient was first seen by the dietetic service in May 2021. From the dietary assessment, it appeared that this patient was consuming an excessive intake of starchy carbohydrate snacks throughout the day and had limited physical activity which was contributing to a high HbA1c. Written dietary advice was given to this patient and her carers who attended the sessions. This patient has made a number of positive changes to her diet since our meeting in May. This patient has increased fruit intake, reduced intake of biscuits, crackers and is eating more balanced meals. The residential staff who work with this patient has promised to help increase this patient's physical activity. This patient had bloods taken in July 2021 and her HbA1c had dropped from 60mmol/mol (Feb 2021) to 54mmol/mol (July 2021)

This patient's health has improved since seeing the integrated service. The sessions have also been beneficial for staff from this residential care facility. As the staff that attended the session are now educated on healthy eating for type 2 diabetes, which may benefit other residents in this residential care facility.

Case E – Timely access to dietetic input in the community.

Case E was a 69 year old man with Type 2 Diabetes. He was in a road traffic accident in 1977 which resulted in peripheral neuropathy in his right leg. He has been attending community Podiatry since 2014 due to re-occurring ingrown toenails in both big toes. He has reduced sensation and non-palpable foot pulses so he was classified as a high risk diabetic patient. He normally requires to attend Podiatry every 4-6 weeks.

He was under the care of the Endocrinology in the Cork University Hospital. After the Christmas period he reported to the Podiatrist that the Consultant wasn't too pleased with his most recent HbA1c reading. He reported putting on weight over the Christmas period and not eating well. The integrated care podiatrist referred the patient to the integrated care dietitian in January 2021 and an appointment was arranged two weeks later. This appointment took place over the phone due to COVID-19 restrictions.

From a dietary assessment completed, it showed this patient was consuming an excessive intake of starchy carbohydrates at dinner and had limited intake of fruit and vegetables. Dietary advice was given on ways to make meals more balanced and reduce HbA1c. A personalised plan was drawn up. This patient was reviewed in February 2021 via phone and June 2021 via face to face. For this June appointment, the community specialist team were able to review the patient on the same day, so only one trip to the primary care centre was required.

Since January, this patient has made a number of positive changes, like increasing fruit and vegetable intake, increasing physical activity and reducing his intake of starchy carbohydrates at dinner. From January 2021 to June 2021, this patient has lost 1 stone 1 lb. This patient has dropped from 14 stone (Jan 2021) to 12 stone 13lb (June 2021). This has meant this patients BMI has been reduced 29.7kg/m2 to 27.5kg/m2. . This patient also reports that his waist circumference has reduced and his fitness and energy has improved. This patients HbA1c has also reduced from 55mmom/mol to 41mmol/mol. This patient has benefitted from attending the community specialist team.

Case F: Delivery of joined-up care to manage HbA1c

Case C is a 50 year old man who had been referred to the community dietetic service by his GP with following a new diagnosis of type 2 diabetes. At diagnosis his HBA1c of 97mmol/mol. This man is a fork lift driver who has two children in their early 20'S. Prior to his diagnosis he had been diagnosed with hypertension and hyperlipidaemia. Since his diagnosis of type 2 diabetes, this patient had been started on metformin 500mg bd and Jardiance 10mg od by his GP.

From dietary assessment this patient was consuming excessive intake of starchy carbohydrates at every main meal and had limited physical activity. A personalised plan was drawn up on ways to reduce his HbA1c. This patient was also given education on what type 2 diabetes is, what foods affect blood glucose levels and why regularly checking ones HbA1c is important. A referral was also made to the CNS to review current medication.

This patient was reviewed by the dietetic service in Feb 2021 and in March 2021. This patient was also seen by the CNS is February 2021. From January to March this patient made lots of positive changes to his diet, reducing starchy carbohydrates, reducing intake of saturated fat, foods high in added sugar and increasing physical activity. When the CNS reviewed this patient in February she decided medications could remain the same, as patient had appeared to make alot of positive changes to his diet and lifestyle.

Since this patient had made dietary changes and medication were introduced, this patients HbA1c has reduced from 97 (Nov 2021) to 64 (March 2021). Triglycerides had also reduced from 3.31 (Nov 2021) to 1.54 (March 2021). This patient also reported a weight loss of 1 stone 13lb. His weight starting at 20 stone 4 (Jan 2021) and reducing to 18 stone 5 (March 2021). This patient has been discharged from the service but the CNS continues to review this patients HbA1c.