National Survey

of

Diabetes Care Delivery

in Acute Hospitals

2018

Prepared on behalf of the
National Clinical Programme for Diabetes

Report preparation

This report was prepared on behalf of the National Clinical Programme for Diabetes.

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Executive Summary

Background

A survey of all public hospitals currently providing diabetes care in Ireland was conducted in 2017 to establish existing diabetes services and to identify needs and gaps within the system to help set priority areas for commissioning of services. All 31 hospital services providing diabetes care across the 37 public hospitals consented to participate giving a response rate of 100%.

Key Findings

1. *Staffing*

The current national WTE of consultant endocrinologists is estimated to be 72% lower than recommended minimum levels. Substantial staffing **deficits** were also identified across other disciplines with a national WTE percentage deficit of 95% in psychologists, a 74% deficit in dieticians, a 32% deficit in podiatrists and a 19% deficit in specialist diabetes nursing staff.

2. Structured Patient Education

Despite the importance of structured patient education for people with type 1 or type 2 diabetes, only 409 adults with type 1 diabetes attended such a programme in 2016, with only 158 having attended a programme which meets international standards. Hospitals not delivering structured education for type 1 patients identified lack of dietetic support to deliver education as a major issue.

3. Diabetic Foot Care

Not all hospitals are meeting recommendations made in the updated draft Model of Care for the Diabetic foot. All 9 model 4 hospitals reported having a multi-disciplinary foot team (MDfT), but not all had access to all the specialities recommended as part of a MDfT. Of the remaining 22 hospital services, our findings would suggest that over a third do not have the recommended established foot protection team in place.

4. Delivery of Diabetes Care

The National Model of Integrated Care recommends that people with type 1 diabetes should be managed in secondary care only and seen 2 to 3 times per year and that people with complicated type 2 diabetes should be seen at least once a year in secondary care. These recommendations are not being met by many hospitals with over half reporting a recall time of more than seven months for adults with uncomplicated type 1 diabetes and almost a quarter of hospitals reporting a recall time of more than 13 months for people with type 2 diabetes on insulin.

5. Integrated Care

The National Model of Integrated Care recommends that people with uncomplicated type 2 diabetes should be treated in primary care only and those with uncomplicated type 2 diabetes currently attending secondary care should be discharged to their GP if they are participating in the National Model of Integrated Care for Type 2 diabetes. Findings from this survey would suggest that many hospitals are still accepting referrals for people with uncomplicated type 2 diabetes and the majority of hospitals are not routinely discharging people with uncomplicated type 2 diabetes with a medical card/GP card back to primary care. Although many hospitals agreed in principle that these patients should be discharged there was a perception that GPs were reluctant to take these patients back under their care and concerns about the level of diabetes services patients would currently receive in primary care.

6. Bariatric Surgery

It is recommended that obesity surgery should be included as a treatment option for some people with type 2 diabetes. Our survey findings suggest that the numbers referred for bariatric services is quite small with an estimated 61-64 patients being referred in the 12 months prior to the survey.

7. Patient records

A clinical information system that can track individual patients as well as populations of patients has been described as a necessity when managing chronic illnesses such as diabetes. In our survey 17 of the 31 diabetes services reported they could generate a list of diabetes patients but only four of the 31 diabetes services could provide 'actual' figures for the number of patients attending in 2016 suggesting that this data is not easily accessible.

Conclusions

To achieve an integrated model of care that delivers high quality and cost-effective care it is imperative that adequate staffing levels are in place in hospital-based specialist services to allow hospital multi-disciplinary teams to manage people with complex diabetes and to support general practice to deliver a greater amount of routine diabetes care to people with type 2 diabetes. Access to structured education which meets international standards, better diabetes clinical information systems to track diabetes populations, improvements in diabetes foot care and improved access to bariatric surgery are also priority areas that need addressing.

1.0 Background

Diabetes is one of the most challenging health problems in the 21st century. In 2015, it was estimated that there were 209,000 people living with diabetes in Ireland (Tracey et al, 2016), with this figure projected to increase by 5-10% annually. The complications of diabetes include vision loss, lower limb amputation, renal failure and cardiovascular disease. Current estimates are that diabetes and its complications consume 10 – 14% of the total health care budget with this burden growing substantially in the future as the prevalence of diabetes increases (Hex et al, 2012, Nolan et al, 2006).

Effective management of diabetes and its complications are important to prevent or limit long-term problems. People living with diabetes need good self-management education and support from healthcare professionals to manage their diabetes effectively. The provision of specialist in-patient services and specialist ambulatory care services in acute hospitals to support Primary Care in delivering an integrated approach to diabetes care are essential elements of a well-functioning health service.

1.1 Staffing of Diabetes Specialist Care Teams

The provision of high quality health and social care services depends on having an adequate and appropriately trained workforce in place at national, regional and local levels. In this report we compare existing Irish hospital specialist diabetes team staffing levels to **minimum** staffing recommendations for specialist diabetes teams in the UK (Diabetes UK Task and Finish Group Report, 2010,Appendix 1). However the health system in the UK is different to Ireland in that the majority of uncomplicated type 2 patients are managed in primary care. In Ireland, hospitals are currently still providing care for both uncomplicated and complicated type 2 diabetes as well as the population of patients with type 1 diabetes. Specialist hospital staffing needs will be greater in Ireland than those recommended in the UK until the full implementation of a National Model of Integrated care which will allow for an increased service in primary care. We have reported staffing figures as **whole time equivalent (WTE) dedicated to diabetes care** acknowledging the fact that Consultant Endocrinologists will also have Endocrinology and General Medicine responsibilities and caseloads.

1.2 Delivery of Diabetes Care

Since 2010, the National Clinical Programme (NCP) for Diabetes has proposed a National Model of Integrated Care for the management of diabetes between primary and secondary care (HSE National

Clinical Programme for Diabetes, Integrated Model of Care for Type 2 Diabetes, 2018). The model recommends that all people with uncomplicated type 2 diabetes (T2DM) (Appendix 2) should be managed in primary care and that people with uncomplicated T2DM currently attending secondary care should be discharged to their GP if they are participating in the National Model of Integrated Care for Type 2 diabetes.

People with complicated Type 2 diabetes (Appendix 2) will have their care shared between primary, secondary or tertiary care and be seen at least once a year in secondary care for an annual review and seen twice a year in primary care. People with Type 1 diabetes and complex type 2 diabetes will be managed in secondary care only and be seen 2 to 3 times per year as they require expert education and support in speciality clinics.

The introduction of the Cycle of Care for Diabetes in 2015 was the first step in the provision of structured diabetes care in general practice. The Cycle of Care provides remuneration for GPs to provide two review visits for people with type 2 diabetes who are in receipt of a medical-card/GP-visit card. Expansion of this level of service to support and inform the transition towards a full Model of Integrated Diabetes Care in primary care should be addressed through a revised GP contract. The full implementation of a National Model of Integrated care with an increased service in primary care for type 2 patients will increase the capacity within diabetes specialist clinics to see complex diabetes patients more frequently.

1.3 Structured Patient Education

People living with diabetes need to be provided with the necessary knowledge and skills to successfully self-manage their condition. Structured patient education for people with type 1 or type 2 diabetes has been shown to increase patients' skills and confidence, improve patient outcomes (including HbA1c) and is cost-effective (Chatterjee, S et al, 2017, HIQA, 2015, HSE 2017).

The NCEC Adult Type 1 Diabetes Guideline in line with international best practice recommends that structured patient education programmes for Type 1 diabetes should be more widely available in Ireland. Key elements of high quality structured education include quality assurance of teaching by independent assessors and programme outcomes that are audited regularly.

1.4 Diabetic Foot Care

In Ireland, an individual with diabetes is 22 times more likely to undergo a non-traumatic lower limb amputation than an individual without diabetes (Buckley, 2012). A major goal of the National Clinical Programme (NCP) for Diabetes is to reduce the number of diabetes related amputations in Ireland. Two of the fundamental principles underlying the updated Model of Care for the Diabetic Foot are that each HSE Community Healthcare Organisation (CHO) should have a Foot Protection Team (FPT) based in a local hospital. Each FPT should comprise (at a minimum) a named lead Podiatrist, a named lead Consultant Endocrinologist and a Diabetes Nurse Specialist. Each model 4 hospital should have a multidisciplinary diabetes foot team (MDfT). The MDfT should comprise (at a minimum) a named lead Podiatrist, a named lead Consultant Endocrinologist, and a Diabetes Nurse Specialist. The MDfT should have access to the following specialties: Vascular Surgery, Tissue Viability Nursing, an Infectious Diseases Consultant or Consultant Microbiologist, Orthopaedic Surgery and Orthotics (HSE National Clinical Programme for Diabetes, Model of Care for Diabetic Foot Update, 2018).

1.5 Bariatric Surgery

In line with international recommendations it is recommended that obesity surgery should be included among the current treatment options for some people with type 2 diabetes (HSE National Clinical Programme for Diabetes, Integrated Model of Care for Type 2 Diabetes, 2018). Research has shown that this surgery is life-saving, can result in remission of type 2 diabetes and other co-morbidities and is not just cost-effective but cost-saving (Rubino et al, 2016, Schauer et al 2012, Office of Health Economics UK, 2010, Sjostrom et al 2007).

1.6 Patient Registers and Patient Management Systems

Ireland does not have a National Diabetes Register which represents a significant barrier to improving diabetes care. In other countries where national registers are maintained, auditing of patient outcomes such as average levels of HbA1c happens routinely (McKnight et al, 2015) allowing health care organisations to assess current diabetes management which can facilitate changes in care processes to improve outcomes.

1.7 Objectives of Survey

The primary objectives in completing this survey were:

- To establish the existing access for people with diabetes to specialist ambulatory care and specialist inpatient diabetes services in acute hospitals compared to the standards set out in National Models of Care and Guidelines
- To establish a data driven approach to identifying needs and gaps within the system
- To help set priority areas for commissioning of services to support the implementation of diabetes models of care and guidelines nationally

2.0 Methods

2.1 Study population

The study population included all public hospitals currently providing adult diabetes care in Ireland. Paediatric and maternity public hospitals and private hospitals providing diabetes care were not included in the survey. Table 1 shows the 37 public hospitals currently providing diabetes care, listed by model level within the 6 public adult hospital groups.

Table 1 Public Hospitals providing adult diabetes care listed by model level

Ireland East	Dublin Midlands	RCSI Hospitals	University of Limerick	South/South West	Saolta
Model 4					
Mater Misercordiae University Hospital	St James's Hospital	Beaumont Hospital	University Hospital Limerick	University Hospital Waterford	University College Hospital Galway
St. Vincent's University Hospital	Tallaght University Hospital			Cork University Hospital	
Model 3					
Midland Regional Hospital Mullingar	Naas General Hospital	Our Lady of Lourdes Hospital Drogheda		South Tipperary General Hospital Clonmel	Portiuncula Hospital
Wexford General Hospital	Midland Regional Hospital Tullamore	Cavan General Hospital		Kerry General Hospital	Mayo University Hospital
St Luke's Hospital Kilkenny	Midland Regional Hospital Portlaoise	Connolly Hospital Blanchardstown		SIVUH	Sligo University Hospital
Our Lady's Navan				Mercy University Hospital Cork	Letterkenny University Hospital
Model 2					
St Colmcilles Hospital Loughlinstown		Monaghan Hospital	Ennis General Hospital	Bantry General Hospital	Roscommon University Hospital
St Michael's Hospital, Dun Laoghaire		Louth County Hospital	Nenagh General Hospital	Mallow General Hospital	
			St John's Hospital, Limerick		

In the following hospitals a single diabetes specialist team provide care over two or more hospital sites and one survey was completed for each team;

- Cavan and Monaghan
- Our Lady of Lourdes Hospital Drogheda and Louth County Hospital

- University Hospital Limerick, Ennis General Hospital, Nenagh General Hospital and St John's Hospital, Limerick
- SIVUH and Mercy Hospital (The level of diabetes services currently delivered by SIVUH diabetes services in the level 3 Mercy hospital is limited).

2.2 Survey instrument

The questionnaire was developed by members of the National Diabetes Programme and was informed by a similar survey instrument used to survey diabetes services in public hospitals in Ireland in 2009 (0'Donnell M et al, 2013).

The questionnaire was piloted among a purposive sample of 2 consultant endocrinologists from 2 public hospitals located in the West of Ireland. The pilots were conducted over the phone with the 2 consultants and comments made during the pilot interviews resulted in minor adjustments being made to the questionnaire. The survey instrument included questions on staffing, types of clinics, recall times, diabetes registers/diabetes information systems and current status of integrated care between hospital and primary care.

2.3 Survey procedure

A letter of invitation to participate in the survey was sent to a named Consultant Physician or Endocrinologist (n = 31) involved in the provision of outpatient diabetes care in the 37 public hospitals. The email outlined that the National Clinical Programme for Diabetes was undertaking a survey on current diabetes resources and services in acute public hospitals to inform future planning of adult diabetes services nationally. The Consultant was asked if they or another member of their team would be willing to complete the survey on behalf of the hospital and to email the contact details of the person who would complete the questionnaire.

All consenting hospitals were then sent a copy of the survey questionnaire and asked to complete it within a certain timeframe. They were informed that completion of the survey might require input from a number of their multidisciplinary team members. Participants were also asked if they would be willing to take part in a follow up telephone call with a researcher to allow the researcher to clarify and/or seek further details on responses. Participating hospitals were informed that once the data were collected and summarised a copy of the findings would be sent to hospitals for their information.

3.0 Results

3.1 Response Rate

31 hospital services consented to participate and completed the questionnaire for diabetes services provided across the 37 hospitals giving a response rate of 100%. Nineteen hospital services took part in a follow up phone call to discuss responses given in the questionnaire and another two hospitals provided additional information/clarification on responses via email.

3.2 Staffing

3.2.1 Hospitals with Consultant Endocrinologist(s) in post

Table 2 shows the reported current WTE dedicated to diabetes care (as Consultant Endocrinologists will also have Endocrinology and General Medicine patient caseloads), the number of Consultant Endocrinologist posts per Hospital Group and the minimum recommended WTE consultant staffing level for a specialist diabetes team (see Appendix 1). Twenty-nine of the 31 hospital services reported having one or more Consultant Endocrinologist posts with a total of 49 Endocrinologist posts across these 29 hospitals. The total estimated WTE dedicated to diabetes care for these 49 Consultant Endocrinologists across the 29 hospitals was 16 WTE.

The national percentage deficit in **WTE** consultants for diabetes care was 72% (41/57 WTE). The highest **WTE** percentage deficits were in the University Limerick hospital group (88%), RCSI hospital group (83%) and the South/South West hospital group (83%).

Table 2 Consultants - Actual versus Minimum Recommended WTE per Hospital group per total population*

Ireland East Estimated population 1,036,389		**Dublin Midlands Estimated population 819,340**		**RCSI Hospitals Estimated population 895, 843**		**University of Limerick Estimated population 347,157**		**South/South West Estimated population 932,623**		**Saolta Estimated population 730,513**	
Rec WTE	**Actual WTE (n)**	**Rec WTE**	**Actual WTE (n)**	**Rec WTE**	**Actual WTE (n)**	**Rec WTE**	**Actual WTE (n)**	**Rec WTE**	**Actual WTE (n)**	**Rec WTE**	**Actual WTE (n)**
12.4	4.8 (n = 12)	9.8	3.7 (n= 11)	10.7	1.8 (n = 6)	4.16	0.5 (n = 1)	11	1.8 (n = 7)	8.8	3.4 (n=12)

* Recommended minimum consultant staffing level on a specialist diabetes team is 3 WTE consultants per 250,000 population in UK (RCP, 2008).

Of the 29 hospital services with Consultant Endocrinologist posts, 12 reported having one Consultant Endocrinologist in post. Two of these hospital services were model 4 hospitals (University Hospital Waterford, University Hospital Limerick). The Consultant Endocrinologist in University Hospital

Limerick was also delivering outpatient diabetes services in three other model 2 hospitals in the region. Two model three hospital services providing services across 2 hospitals had only one consultant endocrinologist in post (Drogheda/Louth; SIVUH). SIVUH was providing diabetes services to another model 3 hospital (Mercy University Hospital) where there is no Consultant Endocrinologist in post and the one consultant endocrinologist in Drogheda/Louth is providing diabetes services across the two hospital sites. Of the two hospital services with no Consultant Endocrinologist in post, one hospital was a model 3 hospital (Tullamore) and the other was a model 2 (Mallow).

3.2.2 Specialist nursing staff involved in providing diabetes care

The recommended and reported level of specialist diabetes nursing staff per hospital group is shown in Table 3.

Table 3 ANP/CNS/ICCNS- Actual versus Minimum Recommended WTE per Hospital group per total population*

Ireland East Estimated population 1,036,389		**Dublin Midlands Estimated population 819,340**		**RCSI Hospitals Estimated population 895,843**		**University of Limerick Estimated population 347,157**		**South/South West Estimated population 932,623**		**Saolta Estimated population 730,513**	
Rec	**Actual**	**Rec**	**Actual**	**Rec**	**Actual**	**Rec**	**Actual**	**Rec**	**Actual**	**Rec**	**Actual**
20.7	19.3	16.38	11.6	18	11	7	4.4	18.65	14.65	14.6	16.7

*Minimum recommended staffing for specialist diabetes nursing is 5 per 250,000 population RCP, 2008.

All but one hospital service reported having appointed specialist nursing staff (Advanced Nurse Practitioner (ANP), Clinical Nurse Specialist (CNS) and/or Integrated Care Clinical Nurse Specialist (ICCNS) involved in the provision of diabetes care (n = 30).

There were 9 (8. 3 WTE) ANPs, 67 CNSs (63.7 WTE) and 31 ICCNS (5.65 WTE) providing hospital diabetes care across the 30 hospitals with appointed specialist nurse posts. Only the 0.2 WTE of the ICCNS (the component of the role dedicated to acute services) was included in the total WTE figure. Nineteen of the 30 hospital diabetes services (63%) reported having specialist nursing staff who were qualified as nurse prescribers with a total of 38 nurse prescribers across the 6 hospital groups. The national percentage deficit in WTE specialist diabetes nursing staff was 19% (18/95 WTE), the highest WTE percentage deficit was in the RCSI hospital group (39%).

The one hospital reporting no specialist nursing staff in post was a Model 4 hospital (Waterford). It had a staff nurse with a clinical nurse specialist qualification delivering diabetes care but this nurse was not appointed on the specialist nursing staff scale.

3.2.3 Health and Social Care Professions (HSCP's) providing diabetes care

Recommended and actual staffing per hospital group for dietitians is shown in Table 4. Five of the 31 hospital services reported no dedicated Dietitian time for their diabetes services. Two of the hospitals were model 4 hospitals (University Hospital Limerick and Waterford University Hospital). No hospital group had the minimum recommended WTE Dietitians working in diabetes care. The national percentage deficit in WTE for diabetes Dietitians was 74% (56/76 WTE), the highest WTE percentage deficit was in the University Hospital Limerick Hospital Group (100%).

Table 4 :Dietitians - Actual versus Minimum Recommended WTE per Hospital group per total population*

Ireland East Estimated population 1,036,389		**Dublin Midlands Estimated population 819,340**		**RCSI Hospitals Estimated population 895,843**		**University of Limerick Estimated population 347,157**		**South/South West Estimated population 932,623**		**Saolta Estimated population 730,513**	
Rec WTE	**Actual WTE**	**Rec WTE**	**Actual WTE**	**Rec WTE**	**Actual WTE**	**Rec WTE**	**Actual WTE**	**Rec WTE**	**Actual WTE**	**Rec WTE**	**Actual WTE**
16.58	9	13	2.6	14	2.8	5.5	0	15	3.1	11.7	2.2

* Minimum recommended staffing for dietitians is 4 per 250,000 population (RCP, 2008).

Recommended and actual staffing per hospital group for Podiatrists is shown in Table 5.

Table 5: Podiatrists - Actual versus Minimum Recommended WTE per Hospital group per total population*

Ireland East Estimated population 1,036,389		**Dublin Midlands Estimated population 819,340**		**RCSI Hospitals Estimated population 895,843**		**University of Limerick Estimated population 347,157**		**South/South West Estimated population 932,623**		**Saolta Estimated population 730,513**	
Rec WTE	**Actual WTE**	**Rec WTE**	**Actual WTE**	**Rec WTE**	**Actual WTE**	**Rec WTE**	**Actual WTE**	**Rec WTE**	**Actual WTE**	**Rec WTE**	**Actual WTE**
8.29	6.4	6.5	2.9	7	6.2 (2.0 funded by Diabetes Ireland)	2.8	1.7	7.5	4.65	5.8	4.4

- Minimum recommended staffing for podiatrists is 2 WTE per 250,000 population (RCP, 2008)

Five of the 31 hospital services reported no dedicated Podiatrist time for their diabetes services. Three of these hospital services were Model 3 hospitals with two indicating that these patients are referred to another hospital diabetes service. No Hospital Group had the minimum recommended

Podiatrist WTE. The national percentage deficit in WTE for diabetes Podiatrists was 32% (12/38 WTE), the highest WTE percentage deficit was in the Dublin Midlands Hospital Group (55%).

Recommended and actual staffing per Hospital Group for Psychologists is shown in Table 6.
Two of the hospital groups (University of Limerick and South/South West) reported no psychological support for their diabetes services. The remaining four hospital groups reported minimum psychological support with only five of the 23 hospital services in these four hospital groups reporting any psychological support. The national percentage deficit in WTE for psychologists was 95% (18/19 WTE).

Table 6. Psychology - Actual versus Minimum Recommended WTE per Hospital group per population*

Ireland East Estimated population 1,036,389		**Dublin Midlands Estimated population 819,340**		**RCSI Hospitals Estimated population 895,843**		**University of Limerick Estimated population 347,157**		**South/South West Estimated population 932,623**		**Saolta Estimated population 730,513**	
Rec	**Actual**	**Rec**	**Actual**	**Rec**	**Actual**	**Rec**	**Actual**	**Rec**	**Actual**	**Rec**	**Actual**
4.14	0.2	3.3	0.3	3.6	0.2	1.4	0	3.7	0	2.9	0.02

* Minimum recommended staffing for psychologists is 1WTE per 250,000 population (RCP, 2008)

3.3 Delivery of diabetes care

3.3.1 Consultant led clinics

Diabetes outpatient care by consultants was delivered in a number of different clinic settings. Thirty of the 31 diabetes services reported delivering diabetes care in a dedicated general consultant led diabetes clinic. These general diabetes clinics were led by consultant endocrinologists in 28 of the hospitals and by general medical consultants in two hospitals. Five of the hospitals delivering diabetes outpatient care in diabetes clinics also reported seeing diabetes patients in a general medical clinic setting. The estimated percentage of diabetes patients seen in general medical clinics in these five hospitals ranged from 10% to 85%. One model 2 hospital with no endocrinologist in post reported that diabetes patients were seen by consultants in a general medical clinic setting only with an estimated 10% of patients attending the general medical clinic being diabetes patients. Diabetes patients at this hospital were also seen by a diabetes nurse specialist with prescribing rights in a diabetes nurse-specialist-led general diabetes clinic.

3.3.2 Speciality clinics

Twenty-eight of the 31 hospital services reported delivering speciality diabetes care clinics (Table 7). Two hospitals not delivering speciality clinics commented that this was due to lack of staffing.

Table 7: Speciality diabetes clinics per hospital*

Hospital	Speciality clinics	Transition type 1 clinic	Young adult clinic	Type 1 diabetes clinic	Insulin pump clinic	New patient clinic	Diabetes foot clinic	Pre-pregnancy clinic	Ante-natal diabetes clinic	Diabetes renal clinic	Diabetes obesity clinic	Other
Ireland East Group												
Mater	√	√	√	√	√	√	√	√	√			
St Vincents	√		√				√					
Mullingar	√	√	√				√	√	√			
Wexford	√	√				√	√		√			
Kilkenny	√					√			√			
Navan	√			√		√						
St Columcilles	√		√	√	√√	√	√					
St Michaels	√			√	√	√						
Dublin Midlands												
St James	√		√	√	√		√			√		
Tallaght	√	√	√	√	√		√			√		
Naas	√			√	√							
Tullamore	None											
Portlaoise	√	√	√	√		√	√					√
RCSI												
Beaumont	√	√	√	√	√√	√	√			√		√
Drogheda and Louth	√		√				√	√	√			√
Cavan and Monaghan	√			√								
Connolly	√	√		√	√	√	√				√	
South-South West												
Waterford*	None											
Clonmel	√		√			√			√			
Cork	√	√			√	√	√	√	√			√
Kerry	√		√	√		√		√	√			
SIVUH	√							√	√			
Bantry	√					√						
Mallow						√						
University of Limerick	√	√	√			√		√	√√			√
Saolta												
GUH	√	√	√	√	√	√	√	√	√	√	√	√
Portinucula	None											
Mayo	√	√		√			√	√	√			
Sligo	√		√		√			√				
Letterkenny	√	√	√		√			√	√		√	√
Roscommon	√					√	√	√√				√

**V (led by consultant), V(led by podiatrist) V (Led by specialist nurse), VV (run both consultant- led and specialist nurse- led clinics)*

The most common speciality clinics were new patient clinics (n = 17), diabetes foot clinics (n = 15), young adult clinics (n = 15) and type 1 diabetes clinics (n = 14). Nine of the 15 diabetes speciality foot clinics were led by a podiatrist. Only one of the seven hospitals in the South-South West group reported having a speciality foot clinic and no hospitals in the University of Limerick group ran a

speciality foot clinic. Other types of speciality clinics run by hospitals included a rapid access clinic (n = 2), a gestational diabetes clinic (n = 2), a cystic fibrosis clinic (n = 2) an older person (over 65) diabetes clinic (n = 1) and an intensive insulin management clinic (n =1)

3.3.3 Sources of Referral

Sources of referral are shown in Table 8. 71% (22/31) of hospitals reported that three quarters or more of their referrals were from general practice.

Table 8: Sources of Referrals

Ireland East Group	GP	Hospital inpatient wards	Other outpatient clinics	Self-referral/Drop in	Other
Mater	60	20	10		10 % Other hospitals as providing national services
St Vincents	60	15	20		5% Other hospitals as providing national services
Mullingar	90	4	4	2	0
Wexford	80	20	0	0	0
Kilkenny	95	0	5	0	0
Navan	80	10	5	5	0
St Columcilles	60	15	15	10	0
St Michaels	90	10	0	0	0
Dublin Midlands					
St James	70	15	15	0	0
Tallaght	85	10	5	0	0
Naas	90	5	5	0	0
Tullamore	90	9	1	0	0
Portlaoise	90	5	5	0	0
RCSI					
Beaumont	75	15	10	0	0
Drogheda and Louth	80	10	5	3	2 (fast-track in by CNS)
Cavan and Monaghan	95	3	2	0	0
Connolly	75	13	10		2
South-South West					
Waterford	75	15	10	0	0
Clonmel	90	5	5	0	0
Cork	85	0	15	0	0
Kerry	60	25	15	0	0
SIVUH	50	25	25	0	0
Bantry	90	5	5	0	0
Mallow	20	40	40	0	0
University of Limerick	75	10	10	0	5 (misc)
Saolta					
GUH	80	10	10	0	0
Portinucula	80	15	0	5	0
Mayo	80	10	5		5 (community services, psych)
Sligo	80	10	10	0	0
Letterkenny	70	10	10	10	
Roscommon	65	20	0	0	15 (PHN/ICT HCPs)

3.3.4 Waiting times for people with type 2 diabetes to be seen at a consultant-led clinic

a) Newly diagnosed type 2 patients

Table 9 shows estimated waiting times for newly diagnosed type 2 patients to attend a consultant-led clinic. Thirty-nine percent (12/31) reported a waiting time of less than six months. Thirty-two percent of hospitals (n = 10) reporting an estimated waiting time of 13 months or over.

Table 9 Waiting times for newly diagnosed type 2 patients to attend a consultant-led clinic

Hospital	3-6 months	7-12 months	13-16 months	17+ months
Ireland East Group				
Mater	√			
St Vincents		√		
Mullingar				√
Wexford		√		
Kilkenny*	√			
Navan	√			
St Columcilles		√		
St Michaels	√			
Dublin Midlands				
St James		√		
Tallaght			√	
Naas		√		
Tullamore	√			
Portlaoise		√		
RCSI				
Beaumont			√	
Drogheda and Louth		√		
Cavan and Monaghan				√
Connolly	√			
South-South West				
Waterford				√
Clonmel				√
Cork				√
Kerry	√			
SIVUH		√		
Bantry	√			
Mallow	√			
University of Limerick				√
Saolta				
GUH				√
Portinucula	√			
Mayo	√			
Sligo	√			
Letterkenny			√	
Roscommon		√		

***Referrals assessed by consultant and seen by consultant or clinical nurse specialists as required**

b) ***Waiting times for adults with type 2 diabetes requiring intensification of treatment***

Table 10 shows estimated waiting times for adults with type 2 diabetes (referred from General Practice) requiring intensification of therapy. Twenty-six of the 31 diabetes services provided an estimated waiting time with 35% (9/26) reporting a waiting time of seven months or over. Four of the 31 hospital services indicated that adults with type 2 diabetes requiring intensification of treatment were triaged and waiting times depended on whether they were classified as urgent or routine.

Table 10: Waiting times to attend a consultant-led clinic for type 2 adult patients referred from general practice requiring intensification of therapy

Hospital	< 3 months	3-6 months	7-12 months	13-16 months	17+ months
Ireland East Group					
Mater		√			
St Vincents	√				
Mullingar		√			
Wexford*					
Kilkenny	√				
Navan		√			
St Columcilles			√		
St Michaels	√				
Dublin Midlands					
St James		√			
Tallaght	√				
Naas		√			
Tullamore		√			
Portlaoise			√		
RCSI					
Beaumont			√		
Drogheda and Louth			√		
Cavan and Monaghan*					
Connolly		√			
South-South West					
Waterford					√
Clonmel					√
Cork			√		
Kerry*					
SIVUH			√		
Bantry		√			
Mallow		√			
University of Limerick		√			
Saolta					
GUH				√	
Portinucula	√				
Mayo*					
Sligo	√				
Letterkenny	Not available				
Roscommon	√				

*Patients are triaged, no waiting times given

3.3.5 Recall times

a) Recall times for uncomplicated type 2 adults on insulin

Recall times for uncomplicated (parameters are being met) type 2 diabetes patients on insulin to be seen at consultant-led clinic are shown in Table 11. Twenty-three percent (7/30) of hospitals reported a recall time of 13 months or more. One hospital without an endocrinologist in post reported that type 2 diabetes patients on insulin returned to a nurse-led general diabetes clinic.

Table 11: Recall times for uncomplicated type 2 diabetes patients on insulin to be seen at consultant-led clinic

Hospital	4-6 months	7-9 months	10-12 months	13-16 months	17+ months
Ireland East Group					
Mater		√			
St Vincents					√
Mullingar			√		
Wexford		√			
Kilkenny			√		
Navan		√			
St Columcilles				√	
St Michaels				√	
Dublin Midlands Group					
St James			√		
Tallaght			√		
Naas			√		
Tullamore			√		
Portlaoise	√				
RCSI Group					
Beaumont	√				
Drogheda and Louth		√			
Cavan and Monaghan			√		
Connolly					√
South-South West Group					
Waterford				√	
Clonmel					√
Cork		√			
Kerry			√		
SIVUH		√			
Bantry	√				
Mallow	Return to nurse led service				
University of Limerick Group		√			
Saolta Group					
GUH				√	
Portinucula			√		
Mayo			√		
Sligo			√		
Letterkenny		√			
Roscommon		√			

b) Recall times for uncomplicated type 2 not on insulin

Recall times for uncomplicated (parameters are being met) type 2 diabetes patients not on insulin to be reviewed at a consultant-led clinic are shown in Table 12. Twenty-eight of the 31 diabetes services provided an estimated recall time with 50% (14/28) reporting a recall time of 13 months or over. Two of the hospitals who did not provide a waiting time indicated they were now discharging these patients back to the community and one hospital which did not run consultant led diabetes clinics indicated that these patients were recalled to a nurse-led diabetes clinic.

Table 12: Recall Time for patient with type 2 not on insulin to be seen at consultant-led clinic

Hospital	7-9 months	10-12 months	13-18 months	18+ months
Ireland East Group				
Mater		√		
St Vincent's			√	
Mullingar				√
Wexford		√		
Kilkenny		√		
Navan		√		
St Columcilles			√	
St Michaels			√	
Dublin Midlands				
St James				√
Tallaght				√
Naas				√
Tullamore		√		
Portlaoise		√		
RCSI				
Beaumont		√		
Drogheda and Louth	√			
Cavan and Monaghan	Discharged to Community			
Connolly				√
South-South West				
Waterford				√
Clonmel			√	
Cork			√	
Kerry	Discharged to Community			
SIVUH		√		
Bantry		√		
Mallow	Return to nurse led service			
University of Limerick	√			
Saolta				
GUH			√	
Portinucula			√	
Mayo			√	
Sligo		√		
Letterkenny		√		
Roscommon		√		

c) Recall times for adults with uncomplicated type 1 diabetes

Recall times adult uncomplicated type 1 diabetes to be seen at consultant-led clinic are shown in table 13. Thirty of the 31 diabetes services provided an estimated waiting time with 53% (16/30) reporting a recall time of seven months or over.

Table 13: Recall Times adult uncomplicated type 1 diabetes to be seen at consultant-led clinic

Hospital	4-6 months	7-9 months	10-12 months	12+ months
Ireland East Group				
Mater	√			
St Vincents	√			
Mullingar			√	
Wexford		√		
Kilkenny			√	
Navan	√			
St Columcilles	√			
St Michaels		√		
Dublin Midlands				
St James	√			
Tallaght	√			
Naas	√			
Tullamore			√	
Portlaoise	√			
RCSI				
Beaumont	√			
OLOL Drogheda and Louth	√			
Cavan and Monaghan		√		
Connolly		√		
South-South West				
Waterford				√
Clonmel			√	
Cork	√			
Kerry			√	
SIVUH		√		
Bantry	√			
Mallow	Not Available			
University of Limerick		√		
Saolta				
GUH		√		
Portinucula		√		
Mayo		√		
Sligo	√			
Letterkenny		√		
Roscommon	√			

d) Recall time for uncomplicated type 1 diabetes young adult patient

Recall Time for uncomplicated type 1 diabetes young adult patient to be seen at consultant-led clinic are shown in table 14. Twenty-nine hospitals provided an estimated recall time with 34% (10/29) reporting a recall time of 7 months or over.

Table 14: Recall Time for Young Adult with Uncomplicated type 1 diabetes to be seen at consultant-led clinic

Hospital	1-3 months	4-6 months	7-9 months	10-12 months	12+ months
Ireland East Group					
Mater		√			
St Vincent's		√			
Mullingar		√			
Wexford			√		
Kilkenny				√	
Navan		√			
St Columcilles		√			
St Michaels			√		
Dublin Midlands					
St James		√			
Tallaght	√				
Naas		√			
Tullamore			√		
Portlaoise		√			
RCSI					
Beaumont		√			
OLOL Drogheda and Louth		√			
Cavan and Monaghan		√			
Connolly			√		
South-South West Group					
Waterford					√
Clonmel				√	
Cork		√			
Kerry	√				
SIVUH			√		
Bantry		√			
Mallow	Not Available				
University of Limerick Group			√		
Saolta Group					
GUH		√			
Portinucula		√			
Mayo			√		
Sligo	√				
Letterkenny		√			
Roscommon	Not Available				

3.4 Clinical management of diabetes patients

3.4.1 Diabetic Foot Care

Access to multi-disciplinary in-patient team for diabetes in-patients with foot complications is shown in table 15.

Table 15 Access to a multi-disciplinary in-patient team for diabetes in-patients with foot complications

Hospital	Multi-disciplinary team	Podiatrist	Endocrinologist	Diabetes specialist nurse	Endo Registrar	Vascular surgeon	Orthopaedic Surgeon	Orthotist	Cast technician	Tissue Viability Nurse	Dietician
Ireland East Group											
Mater*	√	√	√	√	√	√	√	√	√	√	√
St Vincents*	√	√	√	√	√	√				√	√
Mullingar											
Wexford	√	√	√	√							
Kilkenny											
Navan	√	√	√	√	√						
St Columcilles	√	√	√	√	√	√					√
St Michaels											
Dublin Midlands											
St James*	√	√	√	√	√	√	√				√
Tallaght*	√	√	√	√		√	√			√	
Naas											
Tullamore											
Portlaoise											
RCSI											
Beaumont*	√	√	√	√	√	√	√			√	√
Drogheda and Louth	√	√	√	√	√					√	
Cavan and Monaghan											
Connolly	√	√	√	√	√	√	√			√	
South-South West											
Waterford*	√	√	√	√	√	√	√		√	√	√
Clonmel											
Cork*	√	√	√	√	√	√	√				√
Kerry	√	√	√	√	√		√	√	√	√	√
SIVUH											
Bantry											
Mallow											
University of Limerick*	√	√	√	√		√	√			√	
Saolta											
GUH*	√	√	√	√		√	√		√		
Portinucula											
Mayo	√	√	√	√	√				√		√
Sligo	√	√	√	√							
Letterkenny	√	√	√	√							√
Roscommon	√	√	√	√							√

*Level 4 hospitals

Nineteen of the 31 hospitals (61%) reported having access to a multi-disciplinary in-patient team for diabetes in-patients with foot complications. Three of the 19 hospitals indicated that members of the team do a ward round together.

All 9 model four hospitals reported having a multi-disciplinary in-patient team for diabetes patients with foot complications. Eight of the 9 model four hospitals reported they did not have an orthotist and three did not have a tissue viability nurse involved in their team. Twelve hospitals indicated their hospital service did not have access to a multi-disciplinary in-patient team for diabetes in-patients with foot complications. Nine of these hospital services were model 3 hospitals.

3.4.2 Structured Patient Education

a) Type 1 Structured Patient Education

Table 16 shows the number of hospital services currently delivering Berger or DAFNE and number of graduates in 2016.

Table 16 Hospital services delivering Type 1 structured patient self-management education

Hospital group	Hospitals where BERGER is available	BERGER Graduates 2016	Hospitals where DAFNE is available	DAFNE Graduates 2016
Dublin Midlands	• Tallaght • Portlaoise • Naas • St James	99	Not available	0
Ireland East	• Mater	30	• Loughlinstown • Vincent's • Kilkenny • Mullingar	89
RCSI Hospitals	• Connolly • OLOL/Louth	45	• Beaumont	26
Saolta	• Sligo • Letterkenny	18	• Galway - Mayo	43
South/South West	• Bantry • SIUVH • Cork	59	Not available	0
University of Limerick	Not available	0	Not available	0
Total Graduates 2016		251		158

One hospital indicated that delivery of Berger had been currently suspended as they did not have access to a dietitian to deliver the programme. Three hospitals had only started delivering structured education in 2017 so had no figures for 2016. Sixty-three percent of hospital services (12/19) estimated that the waiting time to attend a programme was within six months. The waiting time was 18 months or over in two model 4 hospitals. Of the hospitals not currently delivering structured type 1 self-management education programmes, the main barrier reported was no or limited dietetic support for their diabetes services.

b) Type 2 Structured Education

Seventy-seven percent (24/31) reported that hospital diabetes staff do not deliver type 2 structured education as patients can access this education in the community. Of the 7 hospital services that have hospital staff involved in delivering type 2 education, two indicated that this involvement would decline as access to community education had improved and one indicated that they were still delivering on the hospital site due to lack of community venues to deliver in the community.

3.4.3 Bariatric Surgery

Hospitals referring patients for bariatric surgery and estimated numbers referred are shown in Table 17.

Table 17 Patients referred for bariatric surgery

	Patients referred for bariatric surgery in the past 12 months?	Numbers referred
Ireland East Group		
Mater	Yes	2
St Vincent's	Yes	Don't know
Mullingar	No	
Wexford	Yes	1
Kilkenny	Yes	Don't know
Navan	No	
St Columcilles	Yes	12
St Michaels	Yes	1
Dublin Midlands		
St James	No	
Tallaght	No	
Naas	No	
Tullamore	No	
Portlaoise	No	
RCSI		
Beaumont	Yes	1-2
OLOL Drogheda and Louth	Yes	3-4
Cavan and Monaghan	No	
Connolly	No	
South-South West		
Waterford	No	
Clonmel	Yes	1
Cork	Yes	2-3
Kerry	No	
SIVUH	Yes	2
Bantry	No	
Mallow	No	
University of Limerick	√	**10**
Saolta		
GUH	Yes	22
Portinucula	No	
Mayo	Yes	1
Sligo	No	
Letterkenny	Yes	3
Roscommon	No	
	Total Patients Referred in 2016	**61-64**

3.4.4 Protocols

Table 18 shows protocols in place at each hospital. 94% (n=29) of hospitals have a protocol in place for diabetic ketoacidosis, 81% (n= 25) for management of hyperosmolar hyperglycaemic state (HHS), 84% (n= 26) for peri-operative diabetes management and 32% (n=10) for management of foot ulceration.

Table 18 Protocols in place in hospital services

Hospital	Diabetes ketoacidosis (DKA)	Management of hyperosmolar hyperglycaemic state(HHS)	Peri-op diabetes management	Management of foot ulceration
Ireland East Group				
Mater	√	√	√	√
St Vincents	√	√	√	√
Mullingar	√		√	
Wexford	√	√	√	√
Kilkenny	√	√	√	
Navan	√	√	√	√
St Columcilles	√	√		
St Michaels	√	√	√	
Dublin Midlands				
St James	√	√	√	
Tallaght	√	√	√	
Naas	√	√	√	
Tullamore	√		√	
Portlaoise	√	√	√	√
RCSI				
Beaumont	√	√	√	√
OLOL Drogheda and Louth	√	√	√	√
Cavan and Monaghan	√	√	√	
Connolly	√	√	√	
South-South West				
Waterford	√	√	√	√
Clonmel	√	√		
Cork	√	√		
Kerry	√	√	√	
SIVUH			√	
Bantry	√	√		
Mallow	√	√	√	
University of Limerick	√			
Saolta				
GUH	√	√	√	
Portinucula	√	√	√	
Mayo	√		√	
Sligo	√	√	√	√
Letterkenny	√	√	√	√
Roscommon			√	

3.4.5 Patient records

Thirteen of the 31 diabetes services (42%) said they had an electronic patient management system that would allow them to generate an existing list of diabetes patients. Nine hospitals had diabetes-specific patient management systems (Diamond = 5, Prowellness =2 , Selma =2). The other 4 hospitals had Tymax, a customised database for management of their diabetes patients. Both of the hospitals using Selma commented on the limited functionality of the system and one hospital using Diamond commented that the version they used was out-dated and further updates would require additional funding.

A further four hospital services who did not have an electronic patient management system said they could generate an existing list of diabetes patients from other types of electronic records used by their hospital or diabetes service. Another hospital indicated that they had a list of existing diabetes patients but it was not computerised.

Thirteen hospital services indicated they currently could not generate a list of diabetes patients for their diabetes service. Of these 13 hospitals, two hospitals were model 4 hospitals. Two of these hospitals reported they had requested a diabetes self-management system for their diabetes services but had not been successful to-date with requests to their IT departments.

3.4.6 Number of diabetes outpatient visits in 2016

Twenty-five of the 31 hospital services provided figures for the number of diabetes outpatient visits in 2016. Fifteen hospital services indicated that these figures were ‘actual’ figures generated either by a patient administration system or a diabetes management system. Ten indicated these figures were based on ‘best estimates’. Of the seven hospitals who provided no figures four responded that they did not know the number of clinic visits and 2 did not provide any response to this question. As over half of the 31 diabetes services could not provide ’actual’ figures for clinic visits we did not include data on clinic visits in the report.

3.4.7 Number of diabetes patients attending diabetes services in 2016

Sixteen of the 31 hospital services provided figures on the number of diabetes patients attending their service in 2016. Of these, four indicated these were ‘actual’ figures and 12 indicated that these were based on ‘best estimates’. Fifteen hospital services did not provide any figures. Of these, 11 indicated they did not know the number of diabetes patients attending in 2016 and four did not provide any information for this question. Additional feedback from a number of respondents

suggested that it was difficult to extract data on number of diabetes patients attending compared to number of outpatient visits. As only four of the 31 diabetes services could provide actual figures for number of patients attending in 2016 we did not include these data in the report.

3.4.8 Integrated Type 2 diabetes care between hospital and primary care

Respondents were asked whether their type 2 patients were primarily care for by the hospital outpatient service or by primary care or jointly between secondary and primary care and if they were currently discharging patients with uncomplicated type 2 to general practice (Table 19)

Table 19 Integrated type 2 diabetes care between hospital and primary care

Hospital	Mostly by hospital service	Jointly between the GP practice and the hospital	Discharging uncomplicated type 2 with medical care/GP card	Discharging uncomplicated type 2 without medical care/GP card
Ireland East Group				
Mater	√		Sometimes	Rarely
St Vincents	√		Sometimes	Sometimes
Mullingar		√	Rarely	Rarely
Wexford	√		Sometimes	Sometimes
Kilkenny		√	Never	Never
Navan	√		Sometimes	Never
St Columcilles*	√	√	Sometimes	Never
St Michaels	√		Often	Often
Dublin Midlands				
St James	√		Rarely	Rarely
Tallaght	√		Never	Never
Naas		√	Often	Sometimes
Tullamore		√	Rarely	Rarely
Portlaoise		√	Never	Never
RCSI				
Beaumont	√		Sometimes	Sometimes
Drogheda and Louth		√	Sometimes	Sometimes
Cavan and Monaghan	√		Often	Often
Connolly	√		Rarely	Rarely
South-South West				
Waterford		√	Rarely	Rarely
Clonmel	√		Sometimes	Rarely
Cork		√	Often	Often
Kerry		√	Often	Often
SIVUH		√	Sometimes	Sometimes
Bantry		√	Rarely	Rarely
Mallow		√	Often	Often
University of Limerick		√	Always	Always
Saolta				
GUH	√		Sometimes	Sometimes
Portinucula	√		Sometimes	Sometimes
Mayo	√		Rarely	Rarely
Sligo**	√		Often/Never	Often/Never
Letterkenny		√	Sometimes	Sometimes
Roscommon$	Not available	Not available	Sometimes	Sometimes

* Patients in an integrated care scheme were treated jointly between the GP practice and patients not part of an integrated care scheme being primary treated by the hospital diabetes service

** One consultant discharged these patients 'often' and the other consultant 'never'

Fifty percent (15/30) of respondents perceived that the majority of type 2 patients were treated primarily by the hospital service with six of the nine model 4 hospitals reporting care being provided primarily by the hospital service. Forty-seven percent (14/30) reported that the majority of type 2 patients were treated jointly by the hospital service and general practice with six of the seven hospitals in the South-South West group reporting a joint hospital-general practice service .

Of the 15 hospitals who reported that type 2 patients were primarily treated by the hospital service, two reported that they 'often' discharged uncomplicated type 2 patients back to primary care, eight reported 'sometimes' discharging these patients and four reported rarely/never discharging these patients.

Of the 14 hospitals that reported a joint service between the hospital and general practice, four hospitals reported discharging uncomplicated type 2 patients with a medical card/GP card 'often', three reported discharging these patients 'sometimes' and seven reported rarely/never discharging these patients. Two of the hospitals that reported discharging these patients 'often' commented that the numbers would be small as traditionally uncomplicated type 2 patients would be treated in primary care.

Additional feedback on discharging uncomplicated type 2 patients to primary care

Additional feedback from individual hospitals identified a number of concerns with regards discharging uncomplicated type 2 patients to general practice. Some consultants perceived that GPs were reluctant to take patients back. Other consultants were reluctant to discharge patients back to primary care when they did not know what level of diabetes services patients would receive in primary care. Reluctance on behalf of patients was also identified as an issue, particularly those who did not have a medical card/GP card, as they would have to pay for their diabetes care in general practice.

Lack of information on which GPs were signed up to the Cycle of Care and which patients had medical cards/GPs cards were identified as issues by respondents. Only two of the hospitals said they had clear criteria for staff for identifying patients suitable for discharge. The others discharged patients in a more ad hoc way with decisions being by influenced by willingness of GPs to accept these patients and willingness of patients to be discharged. A number of hospitals said their decision was also influenced by whether or not integrated care specialist nursing staff were working with primary care practices.

4.0 Discussion

4.1 Staffing

This survey compared deficits not against what would be considered optimal services but to **minimum** levels of staffing required in a UK setting (Diabetes UK Task and Finish Group Report, 2010) where the majority of uncomplicated type 2 patients are managed in primary care. As hospitals in Ireland are still providing care for people with uncomplicated type 2 diabetes hospital staffing needs will be greater than those recommended in the UK until the full implementation of a National Model of Integrated care which will allow for an increased service in primary care.

All disciplines show substantial deficits against recommended minimum levels of staffing with the low levels in consultants WTE dedicated to diabetes care, dietitians and psychologists particularly evident. High general medical caseloads carried by consultant endocrinologist's impacts significantly on time dedicated to diabetes care. The estimated deficit in this report is likely to be conservative as the recommended minimum level of staffing for consultant endocrinologists in the UK has been increased (Royal College of Physicians, 2013).

Delivery of a diabetes specialist service is multifaceted and requires input from the full multidisciplinary diabetes team to deliver high-quality care to all people with diabetes. This will only be achieved by making sure that minimum standard staffing levels for consultants, specialists nursing staff, dietitians, podiatrists and psychologists are in place. Hospitals must prioritise investment in specialist diabetes teams to deliver high-quality and cost-effective support to avoid hospital admissions, shorten hospital stays and improve clinical outcomes (Diabetes UK Task and Finish Group Report, 2010).

To achieve an integrated model of care the necessary staffing and supports must be put in place in hospital-based specialist services to allow them manage people with more complex needs as well as providing the necessary supports to primary care to enable them to become more involved in the management of type 2 patients.

4.2 Waiting Times and Recall times

Our survey results suggest that people with type 2 diabetes requiring intensification of treatment are waiting over 7 months and people with newly diagnosed type 2 diabetes are waiting over a year to be seen in a consultant-led outpatient diabetes clinic in a third of hospitals. With full

implementation of a National Model of Integrated care allowing for an increased service in primary care the volume of these referrals should decrease but currently where diabetes care in primary care can vary greatly such waiting times are not ideal.

The National Model of Integrated Care recommends that people with type 1 diabetes should be managed in secondary care only and be seen 2 to 3 times per year as they require expert education and support in speciality clinics to manage their care effectively. This recommendation is not being met in all hospitals with over half reported a waiting time of seven months or over for adults with type 1 diabetes and over a third reported a recall time of seven months or over for young adults with type 1 diabetes.

The Integrated Care model recommends that people with complicated type 2 diabetes should be seen at least once a year in secondary care and people with uncomplicated type 2 diabetes should be only managed in primary care. Our survey found recall times for type 2 patients on insulin was 13 months or over in almost a quarter of hospitals. Our survey results also suggest that many uncomplicated type 2 patients are still being recalled to outpatient diabetes services with only two of the 31 hospital services indicating they were now discharging these patients back to the community. Half of the hospitals reported a recall time of 13 months or over for people with uncomplicated type 2 diabetes not on insulin.

4.3 Diabetic Foot Care

The updated draft Model of Care for the Diabetic foot recommends that each model 4 hospital should have a multidisciplinary diabetes foot team (MDfT) comprising at a minimum, a podiatrist, a diabetes consultant, and a diabetes nurse specialist and have access to a vascular surgeon, a tissue viability nurse, an infectious disease consultant or microbiologist, an orthopaedic surgeon, and an orthotist. Although all 9 hospitals reported having access to a multi-disciplinary in-patient team, not all hospitals reported having access to all specialities recommended in the updated draft Model of Care for the Diabetic foot. The Diabetes foot model of care also recommends that each HSE Community Health Organisation (CHO) should have a Foot Protection Team (FPT) within a local hospital consisting of at a minimum a podiatrist, diabetes consultant and a diabetes nurse specialist, based in local hospitals. Our survey findings suggest that over a third of hospitals do not currently have an established foot protection team in place.

4.4 Structured Patient Education

A key goal of diabetes management is to maximise the time spent with near normal glucose concentrations, while avoiding problems such as hypoglycaemia or ketosis. Given the complexity of maintaining tight glucose control, successful outcomes depend, perhaps more than with any other long-term condition, on full engagement of people with type 1 or type 2 diabetes in life-long day-to-day self-management. In order to support this, the health service needs to provide informed, expert support, education and training.

In many health services (including Germany and the UK) care for people living with type 1 or type 2 diabetes incorporates the delivery of high quality self-management education, usually in a group setting. Many of these self-management education programmes have demonstrated improvement in diabetes control, quality of life and diabetes knowledge (Chatterjee, S et al, 2017, HSE 2017).

Despite an awareness of the importance of group education for people with diabetes, only 409 adults with type 1 were recorded as having attended such programmes in Ireland in 2016, with only 159 having attended a programme which meets international standards as set out in National Adult Type 1 diabetes NCEC guideline. Lack of dietetic support to deliver structured education programmes for type 1 patients was identified as a major issue for those hospitals currently not delivering structured education for type 1 diabetes.

4.5 Patient Register and Patient Management System

A clinical information system that can track individual patients as well as populations of patients has been described as a necessity when managing chronic illnesses such as diabetes (Wagner et al, 2001). In our survey 17 of the 31 diabetes services reported they could generate a list of diabetes patients but only four of the 31 diabetes services could provide actual figures for the number of patients attending in 2016 suggesting that this data is not easily accessible. Some hospitals expressed frustration that they did not have access to a diabetes patient management system and others with patient management systems commented on the limited functionality of their current systems.

The existence of individual hospital registers impacts on the feasibility of establishing a national register. Where national registers have been established in other countries, many have automatically extracted patient information from pre-existing registers including hospital systems.

For this to be applicable in the Irish setting each hospital would need to maintain a separate diabetes register containing detailed clinical information in an electronic format.

4.6 Bariatric Surgery

In line with international recommendations, the Integrated Model of Care for Type 2 diabetes recommends that obesity surgery should be included among the current treatment options for some people with type 2 diabetes. A recent study estimated that 10,891 people with type 2 diabetes aged ≥50 years in Ireland were eligible for bariatric surgery. Provision of bariatric surgery to this cohort of patients could potentially result in an estimated 7,079 patients having acceptable glycaemic control not requiring medication (O'Neill KN et al, 2017). Our survey results suggest that not all hospitals are referring patients for bariatric surgery and the numbers referred for bariatric services is quite small with an estimated 61-64 patients being referred in the 12 months prior to the survey.

Bariatric surgery is currently undertaken in two established bariatric centres nationally (Galway University Hospital and St. Vincent's University Hospital). However the capacity to deliver bariatric surgery in Dublin and Galway is currently very limited. Feedback from some hospitals would suggest that accessing bariatric services is difficult and that little feedback is received on patients they have referred.

4.7 Integrated care

Findings from this survey would suggest that diabetes care for type 2 patients remains hospital-based. Half of the hospitals reported that their type 2 patients were primarily cared for by the hospital outpatient service. Although we did not distinguish between complicated and uncomplicated type 2 patients when asking this question, the fact that the majority of hospitals reported waiting times for newly diagnosed type 2 patients and recall times for uncomplicated type 2 patients not on insulin would suggest that the population of type 2 patients seen by hospitals will include uncomplicated type 2 patients.

The National Model of Integrated Care for type 2 diabetes recommends that people with uncomplicated type 2 diabetes currently attending secondary care should be discharged to their GP if they are participating in the National Model of Integrated Care for Type 2 diabetes. Less than a fifth of hospitals indicated they were 'often' discharging uncomplicated type 2 patients with a medical card/GP card back to primary care suggesting that many hospitals are not currently following the recommendations of the National Model of Integrated Care. Qualitative feedback from

those hospitals less likely to discharge these patients to primary care would suggest that these hospitals perceive that GPs are reluctant to take these uncomplicated type 2 patients back under their care and lack of knowledge of the level of diabetes services patients would receive currently in primary care if discharged.

The Committee on the Future of Healthcare Sláintecare Report (2017) strongly recommend the shift of type 2 diabetes care into primary care settings. They acknowledge that an integrated model is needed to address the growing prevalence of conditions such as diabetes. General practice through the GP contract must be enabled with multidisciplinary specialist's supports of CNS Diabetes Integrated care, community podiatrists and dietitians to deliver a greater amount of routine diabetes care to people with type 2 diabetes.

5.0 Conclusions

To achieve an integrated model of care that delivers high quality and cost-effective care it is imperative that adequate staffing levels are in place in hospital-based specialist services to allow hospital multi-disciplinary teams to manage people with complex diabetes and to support general practice to deliver a greater amount of routine diabetes care to people with type 2 diabetes. Access to structured education which meets international standards, better clinical information systems to track diabetes populations, improvements in diabetes foot care and improved access to bariatric surgery are also priority areas that need addressing.

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Appendices

Appendix 1
Recommended minimum staffing levels for specialist diabetes care teams [1, 2.]

	Minimum staffing per 250,000 population
Consultants	3 (12 sessions/week)
Specialist Nursing Staff	5 (1 per 300 inpatient beds)
Dietitians	4
Podiatrists	2
Psychologist	1

A Diabetes UK Task and Finish Group Report (2010). Commissioning Specialist Diabetes Services for Adults with Diabetes

Appendix 2 – Uncomplicated and complicated type 2 diabetes as defined by Integrated Model of Care for Type 2 Diabetes

Patients with Uncomplicated Type 2 diabetes who will have their care managed in primary care only
Uncomplicated Type 2 diabetes is defined as people with the condition who meet the following criteria; • they are not on insulin • their diabetes is managed by lifestyle modifications only or • they are on 2 glucose lowering agents with IFCC/HBA1c (≤ 58mmol/l or ≤7.5%)
And they have • Low or moderate risk diabetic foot • No active diabetic eye disease • Controlled CV risk factors • Normal hypoglycaemia awareness
And they have • Satisfactory renal function defined as o A serum creatinine < 150*u*mol/L or o eGFR > 60ml/min or o Albuminuria < 30mmol/ml or o PCR < 100mg/mmol
And they have • No symptoms of autonomic neuropathy (with exception of erectile dysfunction)

Complicated Type 2 diabetes patients who will be managed between both primary and secondary care	
The patients who will have this model of integrated care include those who have any of the following	
• **A need for or require insulin.***	☐
• Failing IFCC / HbA1c (>58mmol/l or 7.5%) and are on 2 or more glucose lowering agents (not insulin).	☐
• **Active foot disease – as per National Model of Care for the Diabetic Foot.**	☐
• A high risk foot – as per National Model of Care for the Diabetic Foot.	☐
• Renal failure – creatinine > 150umol/l or eGFR < 60ml/min.	☐
• Albuminuria with normal serum creatinine – ACR on 2 occasions > 30mmol /ml or PCR > 100mg/mmol.	☐
• Painful peripheral neuritis.	☐
• Symptoms of autonomic neuropathy (except for erectile dysfunction).	☐
• Diabetic eye disease with active proliferative retinopathy / maculopathy or recent laser therapy or intra-vitreal injections (within the last 24 months).	☐
• Uncontrolled CV risk factors (refractory hypertension or dyslipidaemia).	☐
• Steroid – induced hyperglycaemia (can be referred back once off steroids or blood glucose levels settle).	☐
• Recurrent hypoglycaemia.	☐
• Impaired Awareness of Hypoglycaemia	☐
• Weight loss + osmotic symptoms + / - ketones	☐
People with Type 2 diabetes on insulin may be managed appropriately in the community depending on local primary care expertise or availability of an integrated care diabetes nurse specialist.	