Nottingham and Nottinghamshire ICS

Diabetes

Clinical and Community Services Strategy

October 2020

This information has been placed in the public domain in order to benefit patients across the country as we believe the experience and approach may be useful for others, however we request that acknowledgement to the work in Nottinghamshire is made and referenced in all materials. This helps us to understand the wider impact benefits of our programme. Please cite 'this work has been informed by the Nottingham and Nottinghamshire ICS' when referencing.

Contents

1. Executive Summary

The Integrated Care System (ICS) ambition across Nottinghamshire is to both increase the duration of people's lives and to improve the quality of those additional years, allowing people to live longer, happier, healthier and more independently into their old age. The aim of the Clinical and Community Services Strategy (CCSS) is to support the system to achieve this by shifting the focus of our health and care delivery from reactive, hospital based treatment models to a pro-active approach of prevention and early intervention, delivered in people's homes or in community locations where this is appropriate with a long term view of beyond 5 years.

In England, there are almost 3.3 million people living with diabetes (2018-19). More people than ever have diabetes and if nothing changes, more than 5 million people will have diabetes in the UK by 2025. There are two main types of diabetes. Type 1 Diabetes Mellitus (T1DM) is an autoimmune disease that leads to little or no insulin being available to the body. Type 2 Diabetes Mellitus(T2DM) tends to occur later in life, as insulin production declines and the body becomes resistant to the effects of insulin, resulting in impaired glycaemic control. 83% of people living with diabetes have type 2 diabetes. In our ICS there are 58,205 people aged over 15 with T2DM. The NHS Long Term Plan (LTP) makes strong reference to diabetes through reducing obesity as a significant risk factor in the development of type 2 diabetes and in addressing health inequalities, with people from black, Asian and minority ethnics (BAME) groups 40% more likely to develop T2DM. For people living with diabetes the LTP makes a commitment to support people in managing their own health by expanding education and self-management tools and access to services in support of addressing anxiety and depression associated with living with a long-term condition. Research has shown that people with T2DM can achieve remission and opportunities exist to learn from test programmes to consider their appropriateness in achieving remission, achieve non-diabetic range glucose levels (blood glucose levels below the usual range for people without diabetes) and stop drug treatment for diabetes. As a long term condition there are a number of complications associated with diabetes, including cardiovascular disease, kidney disease, peripheral arterial disease, nerve and eye damage. Achievement of diabetes treatment targets, by improving access and driving down variation, supports the prevention of long term complications and demand for other specialist support and interventions. Care closer to home is an ambition laid out in the LTP, but for those who periodically require secondary care access to specialist advice, it is important to improve recovery and reduce length of stay and readmissions. Alignment of specialist skills across community and secondary care provides an opportunity to improve access to these skills, aligned with the principles of care closer to home.

This diabetes service review has been undertaken as part of the ICS CCSS work stream. It has been supported by clinical experts and stakeholders in the development of place based service models for the future, to support the long term needs of our existing citizens. The review also focuses on embedding prevention in our population over the next 5-10 years, by shifting our culture from one of illness to one of healthier lifestyles and self-care.

The strategy identifies major stages in the journey for people with diabetes and stresses a need to reorganise the way in which these services are delivered, from prevention to longer term management. A whole pathway approach in the provision of diabetes services is crucial in order to maximise the clinical outcome for patients, their quality of life and experience of diabetes services.

Key themes have been identified along with key transformational opportunities and potential impacts have been developed which include: prevention and education strategies to reduce risk; consistent and equitable approach to diabetes treatment and long-term condition management; improved access to specialist skills in advance and during hospital stay; development of a foot pathway to support equity of provision; virtual offer and tele-medicine to support capacity and demand and optimise the offer.

A transformational 'Bridge to the Future' highlights current service offers across the ICS and identifies some potential long term next steps that can be taken to achieve the identified opportunities with proposed timelines and the expected outcome for our citizens of Nottinghamshire.

The recommended next steps are vital in keeping the momentum of change in the future offer of improved prevention and better health for our citizens; providing the right tools for our population to support their wellbeing; providing strong communication links for our staff is vital to enable them to provide the best care for our citizens; the most appropriate models of care in acute settings, neighbourhood and home need to be provided equitably across the ICS and be provided using best evidence, flexibly and in a patient centred way for them to fulfil their maximum potential throughout their lifetime.

2. Introduction

Background and Purpose	In Nottinghamshire we have made great progress in improving people's health and wellbeing. Today, we can treat diseases and conditions we once thought untreatable. However, our health and care system faces change and this will impact on our services, for example, the growing prevalence of long-term health conditions places new strains on our system. There is inequality evident in both the location of challenges and in access to services. In some areas, it is easier to access a GP than in others, or to find things to do to enable citizens to stay active and fit. The ICS ambition across Nottinghamshire is to both increase the duration of people's lives and to improve those additional years, allowing people to live longer, happier, healthier and more independently into their old age. The requirement for a CCSS came from the recognition that to achieve this ambition the system has to change as a whole, rather than just in its individual acute, primary care, community and social care elements. It is recognised that only by working together to describe changes in how care is provided across the system, rather than through individual organisations, will we deliver the scale of change required.
The ICS Clinical and Community Services Strategy	The aim of the CCSS is to support the system to achieve this by shifting the focus of our health and care delivery from reactive, hospital based treatment models to a pro-active approach of prevention and early intervention. This should be delivered closer to people's homes or in community locations where this enables better prevention, more supported self-care and earlier intervention to support citizens. The Strategy recognises that achieving this change is a long term programme that will be delivered over the next 5 years and beyond. This is also to enable a necessary long term investment in the health and care buildings and infrastructure in the system. An overall CCSS whole life model framework has been developed to focus on the need to support people through their lives from living healthy, supporting people with illness and urgent and emergency care through to end of life care. Citizens can experience different parts of the system at different stages in their lives. With the development of the overall Strategy framework the next phase of work is to review the 20 areas of service across the ICS that collectively form approximately 80% of the volume of clinical work in the ICS. This will ensure that overall the Strategy is described as a coherent whole and generates a programme of change for the whole ICS. This review of diabetes is one such review and is part of the second phase of work.
NHS Long Term Plan	The NHS LTP is clear that to meet the challenges that face the NHS it will increasingly need to be more joined up and coordinated in its care; More proactive in the services it provides; More differentiated in its support offer to its individuals. The ICS has focused on describing 5 areas of focus for the delivery of the NHS LTP. These requirements are reflected in each of the service reviews that collectively will describe the CCSS **1. Prevention and the wider determinants of health -** More action on and improvements in the upstream prevention of avoidable illness and its exacerbations **2. Proactive care, self management and personalisation -** Improve support to people at risk of and living with single and multiple long term conditions and disabilities through greater proactive care, self-management and personalisation **3. Urgent and emergency care -** Redesign the urgent and emergency care system, including integrated primary care models, to ensure timely care in the most appropriate setting **4. Mental health** - Re-shape and transform services and other interventions so they better respond to the mental health and care needs of our population **5. Value, resilience and sustainability -** Deliver increased value, resilience and sustainability across the system (including estates)

3. Approach and Scope

Approach	This strategy has been developed through an open and inclusive process which weaves together the expertise of clinicians and care experts with commissioners and citizens in determining the future shape of services across the system. There have been a variety of stakeholder and service user events to develop a clinical and community services model. An extensive system wide piece of work is taking place across a minimum of 20 services. The CCSS Programme Board have reviewed these services against a range of quantitative and qualitative criteria and agreed the second phase of six service reviews. These include; Diabetes; Eye Health; Skin Health; Women's Health; Heart Health and Urgent Care. This document discusses the approach, scope, the key issues and potential transformational opportunities within diabetes services across the ICS. Health, social care, public health and the voluntary sectors have all been considered through reviewing the current service offer across the ICS. The service review was undertaken over approximately 24 weeks with representation from stakeholders across the ICS. An evidence review pack was developed which considered national and local best practice to inform the development of potential themes and new models of care where transformational change may take place across the ICS in the future.
Scope	There are two main types of diabetes, type 1 (autoimmune) and 2 (tends to occur later in life and linked to impaired glycaemic control). 90% of people have type 2 diabetes. Obesity is a significant risk factor for the development of type 2 diabetes, but also for the development of gestational diabetes during pregnancy. Complications are associated with diabetes and these include, kidney disease, peripheral artery disease, nerve and eye damage. For the purpose of the review the following focus was agreed: **In scope:** • Type 2 Diabetes • Obesity (as the predominant risk factor for Type 2 Diabetes and gestational diabetes) • Diabetic Foot Ulcers • Inpatient Diabetes • **Not in scope:** Type 1 Diabetes (but where there are strong connections in service delivery these have been included), Antenatal Diabetes, Diabetes Eye Screening, Kidney Disease were agreed to be out of scope of this review. Whilst the review does not focus on these conditions, the transformation proposals developed in this review will provide the opportunity to improve education, prevent ill health and access to specialist advice, condition management across these pathways, improving outcome and experience for current and future generations. Opportunities to deliver services differently, for example exploiting the use of technology and tele-medicine, will also support future care for conditions and pathways out of scope of the review.
Engagement	The Diabetes service review has been supported by a tailored Diabetes Steering Group involving stakeholders and clinical experts from across the ICS. They have provided expert advice, guidance, confirmed and challenged assumptions throughout the period of review and connected to other workstreams. This group has formed part of the governance process along with the CCSS Programme Board. Stakeholders involved in the Diabetes service review included Patients, Clinicians, Allied Health Professionals (AHPs), Nurses, Diabetes UK, Heads of Service, Social Care, Public Health, Commissioners and others to be proactively involved in re-evaluating current service offers across the ICS, in developing potential themes and agreeing transformational change for the future Clinical and Community Services Strategy. Previous patient engagement, in collaboration with Diabetes UK, has enabled confirm and challenge of assumptions and play an active part in the co-design of any future service changes across the ICS.

4. Contents

Strategy Development	This Strategy Document consists of five key elements. These have been developed through a process of design and iteration with the steering group, which includes key stakeholders across the system. The strategy has been developed with reference to the Evidence Review document and patient feedback.
Priorities for Change	The work of the Steering Group identified four key areas of focus that need to change in the ICS for diabetes care. These were based on a review of the current issues facing the ICS and the views of the Steering Group.
Proposed Future Care System	Following the evidence review at subsequent steering group meetings, attendees started to develop the future care system for Diabetes to address the Priorities for Change. The future care system is described against two dimensions • **Location** split between - Home (usual place of residence) – Acute Hospital with 24/7 medical presence – Neighbourhood representing all community/primary care and ambulatory care settings • **Urgency** split between - **Emergency/Crisis** requiring a service provided 24/7 to avoid crisis or risk to life – **Urgent** requiring a service 7/7 but not 24/7 to meet urgent care needs – **Scheduled** reflecting any arrangement where an appointment is agreed between a professional and a citizen The intention of the system model is to focus future care delivery closer to home and also with greater levels of scheduled care to best use the available resources and reduce demand on urgent and emergency care services. The new system to address the Priorities for Change is presented for each location and then summarised overall for the ICS.
Transformation Proposal	The Transformation proposal described the key initiatives or programmes that are required to deliver this new model. Namely, • **Priority** – What is the priority of the initiative in the view of the steering group and workshop attendees? • **Alignment** – At what level of the system should we aim to deliver each initiative? In most instances this is ICS level but there are some instances where the recommendation is for delivery to be at Integrated Care Provider (ICP) level where the greater value is perceived to be in an overall consistent approach. Alternatively, it is at Primary Care Network (PCN) level where differential delivery would benefit the needs of very local populations • **Enabling Requirements** – What is required to enable each Programme to deliver? This includes workforce, technology, estate or service configuration. There are also requirements of culture or finance and commissioning to allow the system to work together differently • **Benefits and Costs** – Where available, the key benefits of the initiative at system level are summarised
Bridge to the Future	The 'Bridge to the Future' was generated at a further virtual steering group meeting. It summarises the current challenges for the diabetes system in the ICS now (Priorities for Change), where we would like to be and how we plan to get there. Progress with the 'Bridge to the Future' and the partnering vision can be returned to with stakeholders as the work develops to ensure the work remains on track.

Diabetes Key Themes and Areas of Priority

Prevention & Self Care

- Obesity
- Diabetes Prevention Programme
- Education

Treatment and Management

- Structured Education
- Remission
- Foot Care

Diabetes in Hospital

- Diabetes as a comorbidity
- Inpatient Service Configuration
- Health Optimisation for Elective Pathways

Whole System Approach

- Different models of Diabetes care
- Consistency of data collection
- Integration of systems

Priorities for Change – Info-graphics

Integrated Care System
Nottingham & Nottinghamshire

Mid Notts

BMI	Count	Prevelance	Diabetes Type 2	Pre-diabetes	%	Urgent Admissions 2019	admission per patient 2019
>40	11,235	3%	2,470	1,235	33%	3151	0.28
35-40	17,845	5%	3305	1860	29%	5338	0.30
30-35	44,275	13%	5990	3910	22%	9759	0.22
20-30	160,755	48%	8735	8085	10%	30001	0.19
<20	72,675	22%	385	495	1%	11732	0.16
Unknown	27,865	8%					

South Notts

BMI	Count	Prevelance	Diabetes Type 2	Pre-diabetes	%	Urgent Admissions 2019	admission per patient 2019
>40	9,050	2%	1,830	795	29%	2,376	0.26
35-40	16,400	4%	2,695	1,860	28%	4,053	0.25
30-35	43,820	12%	5,295	2,615	18%	7,794	0.18
20-30	193,025	51%	9,375	5,245	8%	29,059	0.15
<20	80,830	21%	360	240	1%	9,055	0.11
Unknown	35,970	9%					

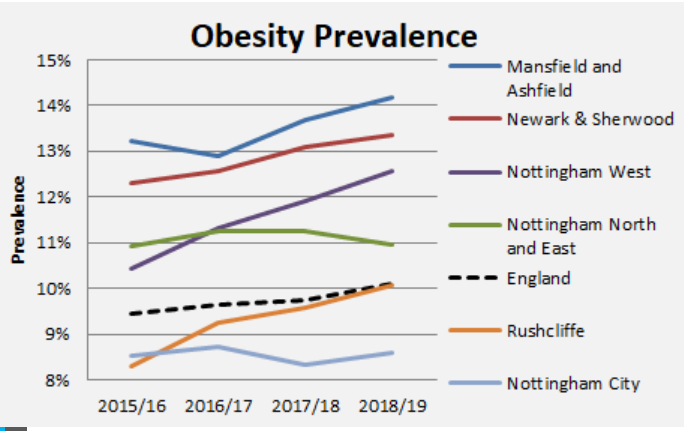
Notts City

BMI	Count	Prevelance	Diabetes Type 2	Pre-diabetes	%	Urgent Admissions 2019	admission per patient 2019
>40	11,235	3%	1,995	670	24%	2964	0.26
35-40	15,055	4%	2590	1860	30%	3530	0.23
30-35	37,575	10%	4685	1980	18%	7189	0.19
20-30	181,020	46%	8170	3235	6%	24649	0.14
<20	69,930	18%	330	170	1%	7725	0.11
Unknown	74,480	19%					

eHealthScope

2% reduction in Obesity levels over 5 years ➡ In 10 years **2,150 less** people with diabetes saving **£3.7M** in our ICS

Sources: PHE, NCIN, PHM

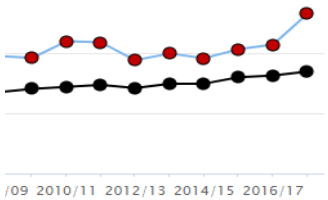


Obesity and being overweight is associated with **90%** of cases of Type 2 diabetes PHE

Severe Obesity at age 10/11 is increasing at a faster rate in Nottingham City than the England Average

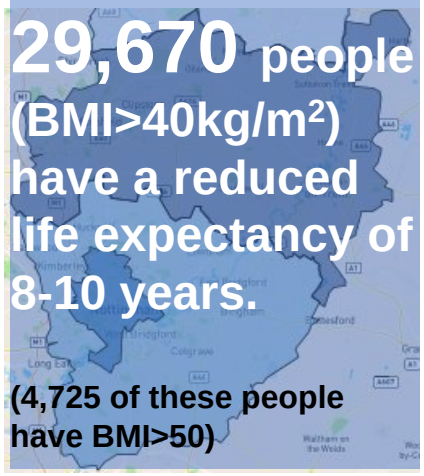
	Admissions (primary/ secondary diagnosis obesity) 2018/19	Admissions per 100,000 (primary/ secondary diagnosis obesity) 2018/19	Prescription items for obesity (Orlistat)	Prescription items per 1,000 population	Barriatric Surgery Admissions 2018/19	Barriatric Surgery Admissions per 100,000 2018/19
ENGLAND	**875,663**	***1,615***	**368,624**	***7***	**7,011**	***13***
NHS England Midlands and East (North Midlands)			**22,167**	***6***		
Nottinghamshire	**31,500**	***3,165***			**60**	***6***
NHS Mansfield and Ashfield	8,750	*4,407*	29	*0*	10	*4*
NHS Newark and Sherwood	4,095	*3,314*	137	*1*	-	*4*
NHS Nottingham City	8,805	*3,205*	2,713	*8*	25	*8*
NHS Nottingham North and East	4,465	*2,923*	558	*4*	-	*3*
NHS Nottingham West	2,975	*2,582*	337	*3*	15	*11*
NHS Rushcliffe	2,415	*2,055*	197	*2*	-	*4*

NHS Digital



PHE fingertips

Morbidly Obese



29,670 people (BMI>40kg/m²) have a reduced life expectancy of 8-10 years.

(4,725 of these people have BMI>50)

eHealthScope

3 years after **bariatric surgery** **80%** are in clinical **remission** of diabetes

UK National Bariatric Surgery Registry 2014

Nottingham City:
2 in 5 children age 10-11 are overweight, obese or severely obese

PHE Fingertips

Diabetes Prevention Programme:
participants in Nottinghamshire lost avg. **2.8kg**
PHM

Priorities for Change – Info-graphics

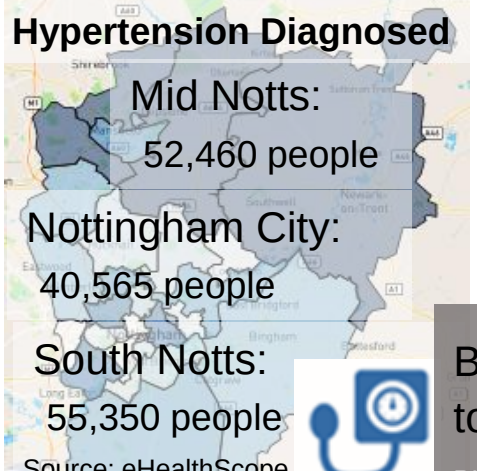
118% increase in diabetes 2015 – 2035

People with hypertension are **3 times** more likely to develop **diabetes**.

PHM - local data

70% increase in patients with high blood pressure 2015 – 2035

Hypertension Diagnosed



Source: eHealthScope
10/8/20

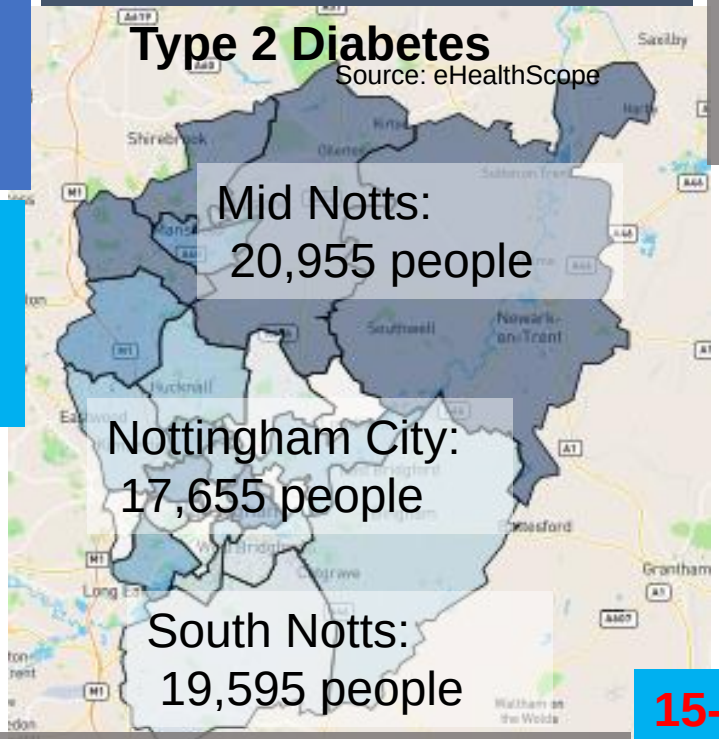
Family History of diabetes doubles the odds.

Diabetes UK

Type of Diabetes	People in our ICS affected	%
Type 2 Diabetes	58,205	83%
Type 1 Diabetes	5,865	8%
Gestational Diabetes	5,860	8%
Total	69,930	

Type 2 Diabetes

Source: eHealthScope



Males are **50%** more likely to have diabetes than females

PHM – local data

85% of people with Type 2 Diabetes have at least 1 other Long Term Condition. This group are expected to increase by **250%** by 2050. Sources: PHM

BAME citizens are **40%** more likely to have diabetes than white people

PHM – local data

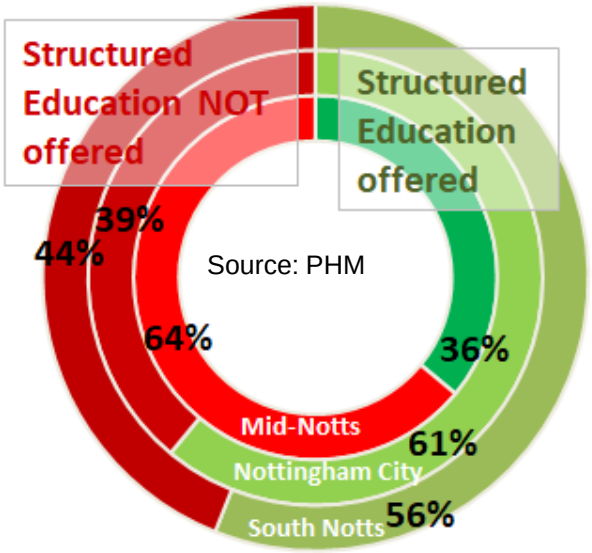
15-39% of people with Type 2 diabetes are undiagnosed. Those in the most deprived areas are **45%** more likely to be undiagnosed.

Notts CC PH Intelligence, PHM

Priorities for Change – Info-graphics

Integrated Care System
Nottingham & Nottinghamshire

www.healthandcarenotts.co.uk @NHSNottingham



Source: PHM

1 in 6 people in a hospital bed has diabetes Diabetes UK

Foot service could save **£2.2M** (10% saving)

Source: Royal College of Podiatry

Treating only **49** diabetes foot ulcers prevents a first **amputation** at 5 years Sources: PHM

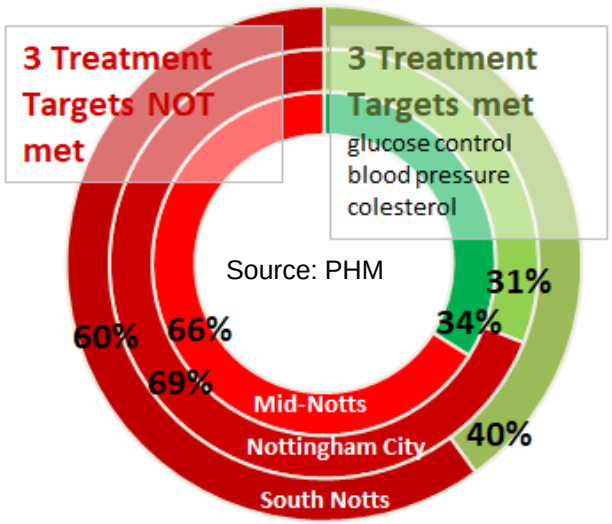
Major amputation rates reduce by **5-43%** after implementing foot care Sources: PHM

People with type 2 diabetes stay longer in hospital.

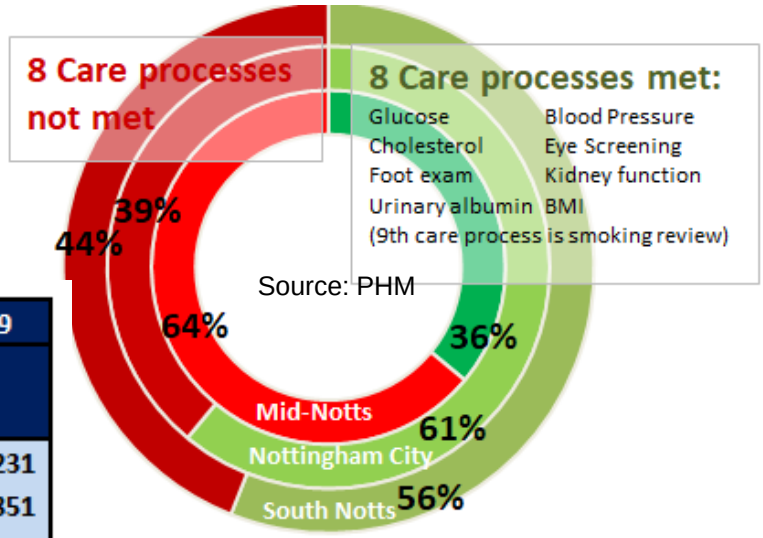
Source: Notts CCG

Length of stay in hospital (days)	patients age 65+ without diabetes	patients 65+ with Type 2 diabetes
0	60%	49%
1	8%	10%
2	5%	6%
3	4%	5%
4	3%	4%
5	2%	3%

Source: Notts CCG



Source: PHM



Source: PHM

Inpatients with Type 2 Diabetes 2018/19	Co-morbidity	Primary diagnosis	Total
NUH	18,984	247	19,231
SFHFT	9,729	122	9,851
OTHER	4,086	14	4,100
Total	**32,799**	**383**	**33,182**

Source: Notts CCG

5. Priorities for Change

The review identified 4 key areas of focus highlighting potential areas of change which include:

- Prevention and Self-Care (with emphasis on education of HCP and signposting to prevention strategies, with a particular focus on access to the National Diabetes Prevention Programme and the development of an obesity pathway and with careful consideration to the wider determinants of health);
- Treatment and Management (improving access to structured education through a consistent and flexible offer and education of HCP, structured medication reviews to ensure optimum benefits from medication, considering the evolving evidence in achieving remission from diabetes and aligning with an obesity pathway, ensuring a foot pathway which provides timely access via a single point of access to specialist advice and support);
- Diabetes in Hospital (ensuring 7 day access to specialist advice, pre-optimisation in advance of elective procedures, realignment of inpatient diabetes care in line with community provision, discharge planning to support continuity of care);
- Whole System Approach (delivering a tiered approach to long-term condition management to support achievement of 9 care process and 3 Treatment Targets (3TT) to prevent complications, optimise and integrate the use of technology and virtual service delivery to support shared decision-making and care closer to home).

Prevention and Self-Care	T2DM represents 83% of people living with diabetes in the ICS. Obesity and being overweight is associated with 90% of cases of T2DM, with women who are obese 13 times more likely to develop T2DM and men 5 times more likely. 16% of women are obese at the onset of pregnancy which is a significant risk factor for the development of gestational diabetes. Obesity incidence is increased in some BAME groups and are at equivalent risk of developing T2DM at lower body mass index (BMI) thresholds. It is also impacted by wider determinants of health, including educational attainment and deprivation. Obesity prevention is aligned with LTP ambitions and a 2% reduction in obesity every 5 years in our ICS will result in 2,150 fewer people having diabetes in 10 years saving £3.7m. Locally, 48,990 citizens have a BMI over 35kg/m^2, 29,670 a BMI over 40kg/m^2, and 4,725 citizens have a BMI over 50kg/m^2. Local systems are recommended to deliver a coherent, community-wide and multi-agency approach to obesity prevention and management. Service tiers, 1=universal services, 2=lifestyle interventions, 3=specialist weight management services, 4=bariatric surgery, describe services that should be available to allow people to be referred and receive support and which addresses the wider determinants of health. Currently in the ICS there are different tier 2 models across Local Authorities (LA). A limited tier 3 (only available for consideration of surgery) and a tier 4 service delivered in Derby and Burton NHS Trust. At present there is no local access for specialist weight management or bariatric surgery, with the ICS having some of the lowest prescriptions for dietary treatment in England. The National Diabetes Prevention Programme, publically branded “Healthier You”, is an evidence based diabetes prevention programme for people with non-diabetic hyperglycaemia. Delivered face to face or online it provides intervention to increase physical activity and improve dietary intake. Alignment with tier 2 obesity services is recommended for people who are overweight and require additional support. The LTP aims to double capacity by 2023/24, with a focus on areas of high demand, as a major contribution to upstream prevention and support lowering T2DM risk. The increased use of the online offer during COVID-19 provides an opportunity to increase uptake and manage demand. Trusted and approved resources, such as “Healthier You” and Diabetes UK, are available to support prevention and self-care. Many other resources are available and accessible which span across many media links, complemented by a wide range of written resources. ICS agreement on consistent and trusted information on trusted sites, such as the NHS App, incorporating Patient Knows Best (PKB), can lead to improved signposting. Improved education and awareness of the general population helping to prevent diabetes, improve self-care and long term condition management and enabling people to recognise complications sooner and seek the appropriate expert advice and care. Education of healthcare professionals (HCP) to deliver consistent and evidence based practice (EBP) will support successful outcomes through greater knowledge and skill in supporting people in addressing risk factors and treatment and self-care for people with diabetes. Effective Diabetes Education Now (EDEN) is a wide-scale transformation programme to support effective education of HCP supporting people with diabetes. A strategy to improve the delivery and organisation of education is underway, with commitment to deliver modules for obesity, foot care 3TT and elderly and frail care across the ICS.

Treatment and Management	Structured Education (SE) is the mainstay of treatment and self-management for people with diabetes, with a commitment in the LTP to support education and self-management. Following SE people with diabetes report that they feel more knowledgeable, motivated and empowered. Locally the DESMOND Programme (Diabetes Education and Self Management for Ongoing and Newly Diagnosed) is the SE programme delivered as a consistent offer across the system. Locally referral to SE is high, but attendance low. 51% of people are offered SE, but with variation across PCNs, with NHS RightCare identifying Mid Notts as the greatest area of opportunity to increase referral and uptake of SE. Physical and psychosocial impacts of a long-term condition can be facilitators or barriers to self-management. Reducing barriers through a flexible offer and use of reminders can increase attendance, with a targeted approach for men and people from BAME groups. Specific consideration should be given to timing, language, culture, religion, health literacy and delivery in accessible and culturally sensitive locations. Online models can support scalability and reduction in face to face (F2F) offer and is potentially cost effective. During the COVID-19 pandemic all SE was converted to the DESMOND online offer, with opportunity to learn from this mode of delivery. There is increasing and compelling evidence that people can achieve remission from diabetes within the first 5 years through calorie reduction and concomitant weight loss achieved through dietary change or bariatric surgery, as endorsed by Association of British Clinical Diabetologists (ABCD) and the Primary Care Diabetes Society (PCDS). Diabetes Remission Clinical Trial (DiRECT) showed that clinically important weight loss sustained at 12 months achieved remission through a Very Low Calorie Diet (VLCD) and is cost effective. The LTP has made a commitment to progress this through a national pilot. Up to 80% of patients achieve remission 3 years after bariatric surgery and is highly cost effective, as stated by the ICS Population Health Management (PHM) workstream. The National Institute of Clinical Excellence (NICE) recommends an expedited assessment for people with recent onset T2DM and a BMI>35kg/m^2 (or lower for the Asian population). Remission therapies are not significantly utilised in the ICS and should be a consideration in the development of a local obesity pathway. Foot disease is a known complication of diabetes. Locally, there are increasing amputation rates, with foot screening, examinations and risk classification falling below the 95% threshold, with increasing emergency admissions and the lack of standardised foot care in primary care and limited input from vascular surgery and podiatry. Enhanced foot care can reduce foot ulcers and amputation incidence and reduce associated inpatient bed days by 23%. NHS RightCare has identified an opportunity for 1200 additional citizens to have a foot examination across Mid Notts and Nottingham city. Plans are developed to create a Diabetes Foot Protection Team to deliver foot care according to best practice, with the aim to start in the city and south Nottingham and roll out across the ICS in year 2. Care delivery is provided dependent on risk stratification, taking into consideration risk, progression and severity, with implementation of a care plan with referral and transfer of care across settings appropriate to the risk of complications. The Royal College of Podiatry (RCP) have stated that enhanced foot care can deliver 10% savings through reduction in foot disease and associated amputations.
Diabetes in Hospital	85% of people with diabetes in our ICS have another long-term condition, with one in six hospital beds having a person with diabetes in them. In England, 95% of people are not admitted because of their diabetes, but having diabetes results in a one to three day longer length of stay (LOS) and a 6.4% increased mortality risk. Inpatient care for people with diabetes costs the NHS £2.5billion, representing 11% of the entire NHS budget. The LTP makes a commitment to increase access to specialist advice during inpatient stay for people with diabetes, Diabetes UK recommends access to specialist skills including, consultant, specialist nurse, dietitian, podiatrist, pharmacist and psychologist, with 7 day access to a diabetes specialist nurse. At present one in 5 hospitals in England do not have access to an inpatient diabetes nurse. In our ICS there is currently no dedicated inpatient specialist nurse available across 7 days. Underpinning access to specialist skills there are opportunities to increase knowledge across healthcare professionals on the management of diabetes, electronic systems to support identifying people with diabetes, electronic prescribing and discharge to support safe transfer of care. Optimal configuration of diabetes teams can support releasing workforce to increase inpatient capacity. For example, at NUH diabetes care, both inpatient and outpatient, is currently delivered on two sites. People with diabetes undergoing elective procedures have a longer length of stay, with up to 50% greater mortality due to increased complications associated with poor control. The ICS has developed peri-operative care transformation with consideration to a holistic approach, universal assessment and access to intervention based on risk, underpinned by shared decision-making and signposting to lifestyle interventions. Consideration of this will support integrated planning, support after surgery and enabling movement back to the community, reducing LOS.

Whole System Approach	Completion of the 9 care processes prevents complications of diabetes which can develop with a long-term condition. The 9 care processes include, glycated haemoglobin (HbA1c), blood pressure (BP), total cholesterol (TC), retinal screening, foot checks, urinary albumin testing, serum creatinine testing, weight check, smoking status check. These checks are important measurements and checks for the common complications of diabetes including, cardiovascular disease, kidney disease, peripheral arterial disease, nerve and eye damage. Across the ICS 51% of the first 8 care processes are recorded. Achievement of the 3 treatment targets (3TT), HbA1c, TC and BP further reduces the risk of complications. Across the ICS 35% of people with diabetes achieve these. Different models of care exist across the ICS, linked to underlying differences in risk, prevalence and needs for services. This combination has led to different outcomes, with an ambition to optimise across different populations. A significant amount of work has already been undertaken to develop a standardised model which builds on the positive current practice across Primary Care Networks (PCNs) and which takes into account best practice evidence. The tiered approach provides clarity of expectations of primary and community care in monitoring people with diabetes to support prevention of complications and optimal outcome. The approach incudes three tiers: • Fundamental/essential • Desirable/intermediate • Aspirational/complex In the approach the GP practice is the bedrock of delivering high quality coordinated care, delivered in partnership with the person with diabetes and with the diabetes specialist nurse (DSN) role standardised and equitable across PCNs. Beyond this, the model can be determined locally and with consideration to the population served. For all tiers wrap round services and expertise should be made available, including DSN, consultant and dietitian. Decision making and care planning in support of long-term condition management is dependent on the accurate recording and visibility of data collected from both the 9 care processes and 3TT. Opportunities to connect health information between the person with diabetes and healthcare professionals can support shared decision-making and optimal condition management. Evolving technologies also present an opportunity, for example continuous glucose monitoring can significantly benefit people with T2DM who use multiple daily injections, reducing metabolic decompensation, such as hypoglycaemia, and increasing time spent in blood glucose target ranges. Diabetes UK highlight that diabetes care can be improved, with better outcomes through integration and this includes IT systems, where all healthcare professionals in a pathway are able to access data. Optimal data sharing can support identifying people at risk to support care planning and signposting to the appropriate services. Integrated systems result in clinicians being confident that they can access accurate and complete data to make safer and better-informed decisions on diabetes care across settings. In the ICS Diamond, a diabetes management system, is used in acute trusts but not in community services. Therefore at present, an integrated IT solution is not in place to support optimal information sharing.

6. Proposed future care system

Home

Planned/Scheduled

Prevention and Self-care – Obesity, Diabetes Prevention Programme, Education

- Education of HCPs and awareness of where to signpost and refer
- Brief intervention on obesity; raising awareness of general population on smoking, diet, exercise
- Agreed/trusted social media, online, apps e.g. NHS App/PKB to support lifestyle changes
- Social prescribing and link workers – using existing resources to work alongside public leaders but taking this into home –ensuring the population have appropriate skills
- Signposting to IAPT for psychological support for LTC and referring to local support groups
- Virtual offer, with social media to support prevention , DPP and Obesity, to provide long term support to lifestyle changes
- Alternative education approaches available where there are challenges to access to technology

Sustainable by:

- Improved support and understanding of risks allows early prevention
- Promotes awareness to support self-care and independence
- Improved satisfaction through flexible offer

Treatment and Management – Structured Education, Remission, Foot Care

- Awareness and advice on how to respond to metabolic decompensation; foot attack sick day rules and how to respond. Signposting to online tools to support self-care
- Access to more information following diagnosis
- DESMOND – virtual offer, ensuring this is communicated to whole family/ carer; self and HCP referral to support targeted approach to address wider determinants of health
- Healthy Living – online and accessible at any time – ensure awareness and signposting built in for all HCPs; target response to address wider determinants of health
- Access to Continuous Glucose Monitoring and Apps
- Planned and consistent approach to technology to support glucose monitoring

Sustainable by:

- Encourages self-care and supports condition management reducing future demand on healthcare
- Reduced outpatient attendances

Diabetes in Hospital – Diabetes as a comorbidity, Inpatient Configuration, Optimisation Elective Pathways

- Brief interventions and MECC principles for pre-operative assessments and signposting to lifestyle advice in preparation for surgery

Sustainable by:

- Improves outcomes following surgery, cancelled procedures and LoS

Whole System Approach – Different models of care, data collection, integration IT

- Clear communications about where patient/ family go for help. Education and support tools developed for patients to support self-management
- Continuous technology monitoring – next stage of technology development – tele-health monitoring and reporting to clinician/ care team to support long term condition management. Sharing of information across all diabetes care providers
- End of Life care – clear and inclusive, respectful conversation early when appropriate; care homes – ensuring they're linked into patient communications and development of pathways;

Sustainable by:

- Promoting self-care and independence

Urgent – 24 hours

Treatment and Management

- Education of family/ carers to be able to quickly respond to urgent requirement e.g. metabolic decompensation, foot attack, sick day rules

Sustainable by:

- May prevent acute admission
- Improves self-care through recognition of signs and symptoms
- Reduces hospital visits

Emergency/Crisis – 4 hours

Prevention and Self-care

- Self-management supported by written information provided by EMAS following response to metabolic decompensation (hypo only)
- Single point of access to support provision of information from EMAS to clinical team to support follow up action

Sustainable by:

- Promotes self-care and improved condition management
- Reduces future demand on emergency care

Treatment and Management

- Recognising metabolic decompensation and foot attack – self-treat, 111/999

Sustainable by:

- May prevent acute admission
- Improves self-care through recognition of signs and symptoms

Colour KEY to information source: Steering Group Evidence Document/ Guideline Patient Engagement

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6. Proposed future care system

Neighbourhood

Planned/Scheduled

Prevention and Self-care – Obesity, Diabetes Prevention Programme, Education

- Targeting groups to address wider determinants of health
- Consistent obesity offer across service tiers, enhancing tier 3 services with access to core multi-professional team providing specialist advice and supporting onward referral to tier 4 (bariatric service)
- Clear pathways and referral criteria making services accessible across settings and with option of self-referral, flexible F2F and virtual offer
- DPP – adding capacity to meet demand, improve access to BAME groups, flexible offer - F2F and virtual with individual and group, defined links to obesity pathway
- Education for at risk groups and families with diabetes, considering when English isn't first language
- Signposting- access to information in GP surgeries to support
- Supporting people with learning difficulties and family history checks

Sustainable by:

- Improved support and understanding of risks allows early prevention
- Promotes awareness to support self-care and independence
- Improved outcomes - reduced rate of disease progression and improved management by lowering prevalence and improving awareness

Treatment and Management – Structured Education, Remission, Foot Care

- Community pharmacy offering structured medication review to optimise compliance and ensure optimum benefit from their medicines
- SE – DESMOND, DESMOND injectibles with flexible offer and enhanced education of HCP on importance of referring to programme
- Steps to reduce DNA at SE programmes
- Ensure family and carers involved in SE as important for behaviour change
- Remission – increase consideration of bariatric surgery and VLCD to agreed criteria
- Education of HCPs – incorporation of additional modules in EDEN offer e.g. foot care and screening
- Link foot pathway with foot screening
- Diabetes Foot Protection Team with single point of access and escalation/ de-escalation built into risk stratification approach – access to specialist skills e.g. specialist diabetes podiatrist
- Access and signposting to podiatry services
- Community podiatric surgery - enhanced podiatry offer is required above and beyond what is currently commissioned.

Sustainable by:

- Encourages optimal use of prescribable medication to improve outcome
- Supports self care and optimal condition management
- Achieves remission from long term condition
- Reduces demand on healthcare services – including access to services, medication costs and potential future need linked to long term condition management
- Supports delivery of consistent and evidence-based advice to support improvements in outcomes
- Reduces acute attendances through access to specialist advice closer to home

Urgent – 24 hours

Treatment and Management

- Telephone triage by Diabetes Foot Protection Team and urgent referrals with suspect foot attack made to acute care within 24 hours.

Sustainable by:

- Provides quick response enables earlier assessment and intervention
- Improved outcome - reducing deterioration of condition
- Reduces hospital visits – IP and OP

Emergency/Crisis – 4 hours

Colour KEY to information source: Steering Group Evidence Document/ Guideline Patient Engagement

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6. Proposed future care system

Neighbourhood

Planned/Scheduled	Urgent – 24 hours	Emergency/Crisis – 4 hours

Diabetes in Hospital – Diabetes as a comorbidity, Inpatient Configuration, Optimisation Elective Pathways

- Mental health patients with diabetes and prison population – education of teams
- Safer surgery assessment using risk stratification and shared decision making principles (ICS Model) low and moderate risk in the community with virtual and F2F offer
- HbA1C mandated and added to referral form to support signposting and intensive input
- Consideration to those with cognitive impairment and malnutrition and signposting for advice.
- Education and training to support motivational interviewing and social prescribing
- Advice and guidance requests where diabetes is a co-morbidity

Sustainable by:

- Improves outcomes through enhances condition management
- Reduced cancelled procedures
- Reduced length of stay

Whole System Approach – Different models of care, data collection, integration IT

- IT systems to support integration of care and mechanism to share information between care providers and the patient.
- Technology to support remote treatment plans
- Integration of new technologies in patient education and disease monitoring e.g. blood glucose monitoring technology
- Diabetes Models of Care – aiming to increase uptake of 9 care processes and 3 treatment targets, including screening for foot care, consider nephropathy, BP, Urine for ACR/PCR as for retinopathy screening
- Development of a standardised and coordinated approach to LTC management with GP practice bedrock of care delivering an essential offer (joint clinics with DSN with either Practice nurse or GP to review patients whose control remains suboptimal, DSN will take lead). Options to develop intermediate and aspirational offer with reducing input from DSN.
- Standardised DSN role
- Model underpinned by access to additional expertise, such as consultants, dietitian
- Improved access to DSN in primary care settings
- HCP education (EDEN) on foot care

Sustainable by:

- Improving self-care, condition management and reducing complications
- Reducing future ill health and demand on health and social care
- Reduced hospital appointments and admissions

Colour KEY to information source: Steering Group Evidence Document/ Guideline Patient Engagement

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6. Proposed future care system

Acute

Planned/Scheduled	Urgent – 24 hours	Emergency/Crisis – 4 hours
Prevention and Self-Care –Obesity, Diabetes Prevention Programme, Education • Brief interventions and MECC principles for pre-operative assessments and signposting to lifestyle advice in preparation for surgery • Established links between obesity tier levels and bariatric service Sustainable by: • Promotes awareness to support self-care , independence and optimal condition management • Reduced cancelled elective procedures • Improved outcomes following elective procedures		
Treatment and Management– Structured Education, Remission, Foot Care • Combined multi-professional clinics for foot care • Intervention - access to vascular, surgery, podiatry – referral back to community podiatry Sustainable by: • Improved outcomes through access to specialist advice • Reduce demand on acute hospitals including reduced waiting times	Treatment and Management • Planned appointment within 24 hours of referral from Diabetes Foot Protection Team. Sustainable by: • Provides quick response and enables earlier assessment and intervention	Treatment and Management • Vascular service and Interventional radiology access for emergency foot concern Sustainable by: • Provides quick response and enables earlier intervention
Diabetes in Hospital –Diabetes as a comorbidity, Inpatient Configuration, Optimisation Elective Pathways • Identify patients admitted with diabetes to trigger early referral • Education and communication with the 'host team' ensuring all staff are familiar with diabetes management. • In reach model of DSN support based on areas of high demand e.g. HPB surgery to proactively support diabetes control • Optimal alignment of IP service to support access to specialist advice • Prescribing of diabetes medication –person-centred approach and self-management • Discharge planning, communication of treatment plans to support continuity of care • Brief interventions and MECC principles for pre-operative assessments and signposting to lifestyle advice in preparation for surgery • Access pre-operative assessment in advance of surgery for those at high risk with pre-op nurse+/- anaesthetist. Early identification of diabetes patients to ensure diabetes is stable and operations are not delayed. Sustainable by: • Provides quick response and enables earlier assessment and intervention • Improved outcomes reducing length of stay • Improved waiting times by reducing cancelled procedures • Enhanced patient satisfaction		

Colour KEY to information source: Steering Group Evidence Document/ Guideline Patient Engagement

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6. Future Care System – Summary

Level of Care / Availability	Acute/ MH Hospital	Neighbourhood	Home
4 hours or less – 24/7	• Metabolic decompensation requiring an emergency response • Vascular service and interventional radiology access for emergency foot concern		• Self-management supported by written information provided by 111/999 following response to metabolic decompensation (hypo only) • Single point of contact to support provision of information from 111/999 to clinical team to support follow up action
Urgent Care/ within 24 hours – 7 days	• Assessment and treatment of foot problem within 24 hours of triage by diabetes foot protection team • 7 day access to specialist diabetes team during IP stay – with protocols, referral criteria and telephone guidance underpinning response	• Telephone triage by Diabetes Foot Protection Team and urgent referral with suspect foot made to acute care within 24 hours	• Education of family/carers to be able to quickly respond to urgent requirement; metabolic decompensation, foot attack and sick day rules
Scheduled – Appt based	• MECC principles to support addressing lifestyle risk factors • Align the acute offer with the Portsmouth Super Six Model • Education of HCPs and the "host" inpatient team to support diabetes management • In reach model of Diabetes Specialist Nurse (DSN) support for areas of high demand to proactively support diabetes control, with an alert system for diabetes on the patient record to support response • Combined multi-professional foot care clinics with access to vascular, surgery and podiatry, with referral back to community podiatry/diabetes foot protection team • Person centred approach and self-management promoted for administration of medication in acute environment • Discharge planning and communication of treatment plans to support long-term management and prevent readmission • Access to pre-operative assessment in advance of surgery for those at high risk with pre-op nurse/DSN +/- anaesthetist	• Education of HCPs on services available and when to refer • Consistent and equitable obesity service provision across the system, with links and ability to refer between settings. Multi-professional workforce with links to PH physician and consideration of GPwER role • Awareness of the structural and environmental considerations in obesity prevention and signposting citizens to information (social prescribing) • Working with public leaders and link workers to reach vulnerable groups in the system • Access to Diabetes Prevention Programme and developing closer links to obesity services • Links between diabetes and weight management pathway to support consideration of remission therapies (Very Low Calorie Diets and bariatric surgery • ICS agreed, consistent and equitable approach to diabetes treatment and condition management, including Structured Education and a tiered approach to condition management to improve uptake and support self-management • Structured medication reviews to optimise compliance and benefit from medicines • Enhanced diabetes foot care pathway - improved foot screening and a risk stratification approach underpinned by shared care principles • Education of HCPs on all aspects of diabetes pathway with access to mentorship across settings • Pre-operative alerts to trigger assessments with advice, signposting and referral, aligned with risk stratification (low and moderate risk) and shared decision-making principles • Advice and guidance requests where diabetes is a co-morbidity • Integration of technologies in education and condition management e.g. blood glucose monitoring, supporting remote treatment plans and coordination of care between clinicians and the patient	• Education of patient and family- development of education aids to deliver lifestyle and behaviour change and support long term management. Incorporating a range of educational approaches and consistent and agreed social media, online and Apps • Virtual service offer across the range of services available in the pathway including, obesity services, diabetes prevention, pre-operative care and long term management, with aim of increasing uptake, achieving long term and sustainable lifestyle change and supporting self-management • Use of technology to support integration of care and support long-term condition management, with the ability to share information between the patient and care providers • Access to psychological therapies for people with long term conditions making it easier to self-refer for mental health support, including IAPT • End of life care- clear and inclusive, respectful conversation early

Whole system **Education Programme** for Diabetes cutting across the ICS for:
ICS Population – to support prevention e.g. Diabetes Prevention Programme
HCPs – to support consistent practice
Patients – to support self-management

High Priority

Far more needs to be done to raise awareness of the Primary, Secondary and Tertiary prevention opportunities linked to diabetes, from addressing lifestyle risk factors through to helping people with diabetes manage their long-term condition. However, it is important to remember that, although out of scope of the review, the same 1^0 prevention messages do not apply to T1DM.

Education for the ICS population on risk factors (diet, physical activity, smoking and alcohol) needs to be made readily available from trusted and approved sources both printed and online (e.g. NHS App). Self-management tools, such as Healthy Living and DESMOND online should also be promoted as approved resources available for people with T2DM to complement the existing Face to Face (F2F) offer. Engagement with public leaders and link workers should be encouraged to support citizens from BAME and deprived communities to reduce health inequalities. Providing easy access to trusted resources for the ICS population (e.g. NHS App/ PKB) to promote education, advice and support is evident in preventing conditions from developing, but also in seeking accurate and up-to-date self-management.

Access to consistent and equitable services to prevent the onset of T2DM is an important opportunity to reduce the incidence of T2DM in the ICS. The DPP is available to refer patients with non-diabetic hypoglycaemia, but adequate capacity needs to be addressed to meet demand and ensure access and coverage across the ICS. Opportunities to promote uptake of the online offer "Healthier You" to complement F2F delivery should be supported, alongside a robust communications and engagement strategy to improve uptake to priority groups. A pathway between DPP and obesity services should be defined to provide appropriate support to people with a BMI>25kg/m^2.

A system-wide approach to education of HCPs using EDEN will ensure the delivery of consistent and evidence-based practice across all settings. At present, modules on obesity, foot care, 3TT, and elderly and frail care are available across the ICS. Embedding training delivery across the ICS and access to additional modules will support increased knowledge and confidence in diabetes management. Enhanced education of HCP can also increase opportunities for the development of extended roles, such as pharmacists in undertaking structured medication reviews to improve medicine optimisation. An ICS mentorship programme should also be implemented to enhance skills and confidence in condition management and improve care provided to people with diabetes.

Impact & Benefit

- Reduction in risk factors and incidence of diabetes (T2DM and gestational)
- Enhanced self –care leading to improved condition management
- Overall economic benefits through prevention and better self-care
- Consistent and evidence-based service delivery

Alignment – For prevention and education it is key that a universal approach is taken and alignment across the ICS to ensure consistent and equitable education, signposting and access to services.

NOTE: In further developing and implementing the proposals set out above as part of our focus, each partner organisation within the ICS will continue to ensure that they comply with their statutory duties and system/organisational governance processes, particularly (but not limited to) those relating to patient and public involvement; equality and inequality analysis

Develop a **whole system approach** to obesity prevention and treatment, with **improved access** to consistent and equitable services across the system

High Priority

Obesity is the predominant risk factor for the development of T2DM (as well as gestational diabetes) as well as other chronic disease, such as CVD and cancer. The COVID-19 pandemic has also highlighted the impact of obesity on outcome, including hospital admission, critical care requirement and increased risk of dying.

A multi-agency approach to review access and coverage across service tiers (1-4), to best practice recommendations, is required to support the implementation of a local obesity pathway to support a reduction in obesity incidence across the ICS. Services should be tailored to population needs and underpinned by appropriate and timely signposting across service tiers, including the principles of social prescribing; working with public leaders and link workers to support local communities. Consideration should also be given to strategies to improve the wider determinants of health including, density of food outlets and access to green spaces e.g. Future Parks Project.

Services should include the core components of dietary intake, physical activity and behaviour change and provide access to a multi-professional team (MDT) with specialist weight management skills, including links between Public Health (PH) clinicians and with possible development of a GpwER.

Specific consideration should be given to the future models across all traditional service tiers to deliver consistent and equitable access. At present there are two tier 2 models across the ICS, a tier 3 service limited to people progressing to the tier 4 service for bariatric surgery and referral for this intervention amongst the lowest in England despite some of the highest levels of obesity in the ICS . VLCD diets are currently being piloted nationally due to the strong evidence that they achieve remission from diabetes. Learning from the pilots and future implementation should be considered within the development of a local obesity pathway. Bariatric surgery is evidenced as a highly cost effective intervention for the treatment of obesity, but with a break even of 19 years due to its high cost. However, for people with a BMI greater than 40kg/m^2 this reduces to 10 years and increases life expectancy. Commissioning was devolved to local CCGs in 2016/17 due to the increasing evidence of benefit and to support access to this intervention for local citizens. Further consideration is required to a model of bariatric surgery that is equitable, addresses the future demand for local citizens and provided in a way that supports follow up and ongoing care.

Impact & Benefit

- Reduced burden of chronic disease and improved life expectancy through a reduction in obesity
- Improved outcomes and experience
- Reduced costs to health and social care through prevention, treatment and addressing health inequalities
- Encourages self-care and management

Alignment - For improved prevention and treatment of obesity, it is key that a universal approach is taken and alignment across the ICS to ensure consistent and equitable access to information, signposting and access to services

NOTE: In further developing and implementing the proposals set out above as part of our focus, each partner organisation within the ICS will continue to ensure that they comply with their statutory duties and system/organisational governance processes, particularly (but not limited to) those relating to patient and public involvement; equality and inequality analysis

7. Transformation Proposal

Consistent and **equitable** approach to diabetes **treatment** and **long-term condition management** e.g. access to Structured Education **High Priority**	If prevention and self-care approaches and enhanced education of HCP are to help transform services across the system, then access to consistent and equitable treatment and long-term condition management needs to be delivered across all areas. SE in already delivered across the ICS using a consistent education programme, DESMOND. Enhanced education of HCPs via the tiered model and EDEN training will support increased referral. Engagement with public leaders and link workers should be enhanced to reach populations, with a focus on developing a flexible offer to increase uptake. Current delivery is predominately F2F and does not provide further opportunity for people with diabetes to access support. Extending the offer by signposting to "Healthy Living" will provide additional support to those who require it. This online offer, as well as DESMOND online, provides opportunity based on experience during COVID-19 to further increase uptake to increase skills and confidence for people with diabetes in managing their condition. A tiered approach to condition management has already been scoped ICS wide, with the GP practice defined as the bedrock of service delivery for diabetes, with a defined and standardised DSN role and access to wrap round expertise and a mentorship programme to develop skills and confidence and optimise reviews. The aim is to implement this model ICS wide, capturing learning from Covid-19 to inform future delivery. Remission therapies provide an important opportunity to reverse T2DM within the first 5 years of diagnosis. National VLCD pilots are underway and the ICS should consider the outcomes from these. The contribution of bariatric surgery to achieving remission is well evidenced and access to referral to this intervention should be developed by the ICS and aligned with the local obesity pathway. **Impact & Benefit** • Improvements in achieving 3TT and 9 care process for diabetes to reduce long term complications • Optimal outcome and experience for patients • Reduced costs to the health and social care and wider economy through • Remission within 5 years supporting a reduction in medication costs and complications **Alignment –** Improved treatment and condition management should be aligned at ICS level to support a consistent and equitable approach. Delivery may be at PCN level to adopt a model that meets the needs of the population.
Improve **access** to specialist advice in advance of and during **inpatient** hospital stay e.g. access to specialist advice **High Priority**	As the diabetes transformation proposals evolve supporting prevention and improved condition management, people with diabetes will continue to access healthcare for other health conditions. The delivery of safe and effective care in the hospital setting remains important to optimise outcomes and return people to community settings as soon as possible. This should include specific consideration to people with a mental health condition. An inpatient stay provides and opportunity to educate people with diabetes on existing risk factors and HCPs in the hospital setting should be confident in addressing risk utilising MECC principles. GIRFT has recommended access to specialist diabetes advice 7 days a week, with specific consideration to DSN capacity, but also other HCP. Acknowledgement of capacity to deliver this is required, with consideration of an in reach model and on call advisory service to support access over 7 days. Education of the 'host' team caring for the person with diabetes will also increase skills and confidence, with advice and guidance requests to support delivery of specialist advice. Utilising technology to coordinate inpatient care can support early assessment, decision making, prescribing and support continuity of care at discharge. Optimising the configuration of the diabetes inpatient service to one site may support sustainable workforce solutions to support inpatient care. The ICS should also adopt a peri-operative pathway to support optimal outcomes in advance of and following elective procedures. **Impact & Benefit** • Reduced length of stay, re-admissions and cancelled procedures • Improved patient outcome and experience, including for people with mental health conditions, avoiding crisis, increasing safety and reducing mortality **Alignment –** Improving access to specialist advice in advance and during hospital stay should be aligned at an ICS level.

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7. Transformation Proposal

Develop a **foot pathway** to support equity of provision across the system e.g. foot screening and diabetes foot protection team **High Priority**	People with diabetes are at risk of developing a number of complications, one of which is foot disease. Amputations are increasing across the ICS, putting additional burden on health and social care as well as for the person with diabetes. Foot checks are one of the 9 care processes, but this is only recorded 51% of the time. The steering group has highlighted that a foot pathway should be developed for the ICS. The development of foot pathway is at an advanced stage and focusses on the need to improve access to structured foot screening to support referral for further assessment and advice. Foot screening is one of the 9 care processes and consideration to combining foot screening to the existing eye screening programme, provides an opportunity to identify foot problems earlier, capturing 80% of the population and reducing sight impairment by 20%. The agreed foot pathway is based on a single point of access, risk stratification and escalation/de-escalation across settings. The single point of access is delivered by a Diabetes Foot Protection Team , composed of an MDT with the appropriate skills and experience, delivering care closer to home in the community setting. Delivery of EDEN training (foot care module) to HCP will support the development of skills in identifying foot concerns and educating the person affected on self-care, whilst providing psychological support. Technology is pivotal to the delivery of the foot pathway, with enhanced decision-making through access to 3D images (Silhouette). This is currently not available in Mid Notts, which should be considered once a Diabetes Foot Protection Team is in place to support equity of provision and maximise benefit across the ICS. **Impact & Benefit** • Reduction in amputations • Reduction in inpatient stays and attendance at hospital foot clinics • Improved outcomes and life expectancy • Reduction in burden of debilitating condition and impact on mental health • Reduction in healthcare, social care and transport costs **Alignment –** To develop a foot pathway that achieves equity of provision, alignment should be at ICS level
Virtual offer and the use of **tele-medicine** to support capacity and demand and optimise service offer **High Priority**	Technology already features in the diabetes pathway, with access to online platforms, electronic care records and digital images to name a few. The COVID-19 pandemic has escalated learning on how technology can support transformation of diabetes care now and in the future. Online education platforms provide the opportunity to increase access to education on the prevention, treatment and self-care of diabetes and improve uptake across the ICS. During COVID-19, all education was converted to online and provides an opportunity to consider the blend of education methods for the future. Diabetes management systems (Diamond) are in use in the hospital setting, but not in the community. Integration of technologies across the ICS, with access to an Integrated Diabetes Dashboard e.g. eHealthScope, will support visibility of information to support shared-decision making, including the clinician and person with diabetes. Access to virtual consultation platforms provide the opportunity to deliver this in the home, optimising service delivery and convenience. Continuous glucose monitoring is not currently utilised for T2DM, but evidence is emerging of its benefit for people requiring multiple injections. This should be considered, with rigorous referral criteria, as part of the emerging opportunities technology presents to improve outcome and experience. **Impact & Benefit** • Increased coverage and care closer to home • Improved utilisation of appointments and reduced DNAs • Reduced attendance in hospital setting releasing estate • Improved patient outcome and experience **Alignment –** An integrated approach to the development of a virtual offer and enhanced use of tele-medicine should be aligned at an ICS level.

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Integrated Care System
Nottingham & Nottinghamshire

Diabetes Transformation Proposal Summary

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	Priority (High/ Med/ Low)	Alignment (ICS/ ICP/ PCN)	Workforce	Technology	Estate/ Configuration	Finance/ Commissioning	Culture	Benefits (*Less than £20,000 per QALY is cost effective)
Whole system **Education Programme** for Diabetes cutting across the ICS for: ICS Population – to support prevention e.g. Diabetes Prevention Programme HCPs – to support consistent practice Patients – to support self-management	High	ICS	-Administration support and dedicated multi-professional group to co-ordinate and deliver EDEN programme -DSN and other workforce capacity to upskill HCP --Workforce to support education in different languages and for people with learning difficulties -NDPP/NHSE to develop workforce (including programme manager) to meet demand	-Alignment to digital transformation plans and passport of resources for diabetes -Educational materials in other formats -Software/equipment to deliver education -Utilise DPP digital version	-Space to deliver education in GP practice/community hubs/community centres -Office space for administrator	-Optimising incentivisation to refer into Healthy Living and SE -Targeted utilisation of transformation funding to support education -Funding for workforce/estate / equipment	-System approach targeting response where greatest opportunity exists -Make MECC everyone's responsibility -Asset based community approach -Robust communication strategy	-Increased awareness of lifestyle risk factors -Improved outcomes and experience through earlier treatment and self-management -Consistent and evidence based service delivery -Overall economic benefits to healthcare system from improved outcomes through prevention, remission, earlier treatment and self-management -Reduction in medication costs
Develop a **whole system approach** to obesity prevention and treatment, with **improved access** to consistent and equitable services across the system	High	ICS	--Scope multi-professional workforce to national guidance deliver obesity pathway across service tiers, with consideration to GPwER. - Education of HCP, utilising EDEN in 1^{0} care	-Apps and social media to support obesity offer e.g. Better Health -Technology to support virtual offer -Bariatric equipment	-Scoping venues aligned with population need to address wider determinants -Space to use bariatric equipment	-Commissioned obesity pathway, aligned to population demand -Funding for sustainable change	-Whole system approach to obesity prevention -Co-production to deliver lifestyle change with consideration to population need	-Improved outcomes, experience and life expectancy through reduction in obesity -Reduced costs to health and social care by prevention and addressing the wider determinants of health -Encourages self-care and management
Consistent and **equitable** approach to diabetes **treatment** and **long-term condition management** e.g. access to Structured Education	High	ICS	-Scope multi-professional requirements for SE and tiered approach to condition management -Access to weight management pathway for remission therapies	-Access to DESMOND online -Blood monitoring technology -Integrated systems across settings, with a dashboard e.g. e-HealthScope	-Access to community hubs in GP practice or PCN	- Outcomes based funding, sharing incentives /ROI -Funding model/workforce/technology/medication	-System approach to improve equity of provision, considering local communities -Breakdown organisational barriers to deliver model	-Improvements in achieving 3TT and 9 care process for diabetes -Optimal outcome and experience for patients -Reduced costs to the health and social care and wider economy through remission within 5 years , reduced medication costs and complications
Improve **access** to specialist advice in advance of and during **inpatient** hospital stay e.g. 7 day access to specialist advice	High	ICS	-Promoting MECC and education of teams -DSN capacity for 7 day input -Specialist pharmacist with consideration to weekend cover	-Enhanced choose and book/alerts/F12 with mandated HbA1c -Electronic discharge -Integrated system with visible dashboard	-Optimal configuration of diabetes inpatient service	-Commissioning to support 7 day DSN -Commission for physical and mental health -Funding for technology	-Making MECC everyone's responsibility -Collaboration across teams -Person-centred care and enhanced access for mental health -Safe transfer of care	-Reduced length of stay and re-admissions -Reduction in cancelled procedures -Improved patient outcome and experience -Improved outcome for people with mental health conditions, avoiding crisis, increasing safety and reducing mortality
Develop a **foot pathway** to support equity of provision across the system e.g. foot screening and diabetes foot protection team	High	ICS	-Workforce to deliver model – foot screening, diabetes foot protection service, podiatry, interventional radiology/vascular surgery, other specialist skills	-Access to Silhouette -Connection of foot screening/care processes/3TT/images to support treatment -Integrated diabetes dashboard e.g. eHealthScope	-Community hubs at PCN level -Reduction is hospital outpatient estate	-Commissioning and funding for diabetes foot protection team -Silhouette start up and ongoing costs	-Promoting earlier intervention to prevent complications -Increasing awareness and training for foot care	-Reduction in amputations -Reduction in inpatient stays and attendance at hospital foot clinics -Improved outcomes and life expectancy -Reduction in burden of debilitating condition and impact on mental health -Reduction in healthcare, social care and transport costs
Virtual offer and the use of **tele-medicine** to support capacity and demand and optimise service offer	High	ICS	-Scoping workforce changes through virtual delivery, with education of staff -Utilise learning from COVID-19 restoration and reform	-Integrated technology and diabetes dashboard e.g. eHealthScope - Consistent access to virtual consultation platform	-Suitable and increased community estate -Reduced hospital estate	-Finance for initial set-up and ongoing costs -Commissioning tariffs to support virtual offer	-Changing HCP mind set to deliver services virtually -Utilising learning from COVID-19 -Ensuring an integrated solution to enable joint working	-Increased coverage and care closer to home -Improved utilisation of appointments and reduced DNAs -Reduced attendance in hospital setting releasing estate -Improved patient outcome and experience

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8. Enabling Requirements

Workforce	Enhancing the future health and social care for diabetes services, requires the following considerations for workforce: • Widespread training of healthcare professionals (HCPs) to empower them to signpost to appropriate resources and services and provide best practice advice to support self-care and condition management, with a mentorship programme to increase skills and confidence • Administrative support to implement the education programme across the ICS • Cross pathway working (primary, secondary and community care) with specific development and expansion of the multi-professional team to meet best –practice guidance and deliver the recommended service models across prevention, treatment and condition management
Technology	The main areas in which technology can effect transformation for diabetes care include: • Developing an integrated IT system for the diabetes pathway to support visibility of information across settings and an Integrated Diabetes Dashboard e.g. eHealthscope to support decision-making between the clinician and the person with diabetes • Trusted and approved resource development for signposting and self-care, with common understanding amongst HCPs - based on NHS App/PKB • Increased use of tele-medicine using virtual consultations and online education to deliver care closer to home • Use of 3D technology and AI to support triage, referral and access to specialist advice - based on Silhouette to support the foot pathway • Use of continuous glucose monitoring technology for specific groups to support optimal condition management
Estate	• There is an emphasis on delivering diabetes care closer to home and accessible more locally, although some community hub space required to support some parts of the model e.g. education and training, peri-operative care • It is crucial to deliver some educational activity in alternative community locations to ensure better local access to some of the more remote areas of higher deprivation or cultural/ethnic diversity • Provision of care closer to home, can help optimise the space footprint required in acute hospital departments, with optimal configuration to support delivery of the model
Culture	• Acknowledgement that people live, work, learn and play within the system and partners should work together to implement a whole system approach to prevention • Collaboration and trust across organisational boundaries to deliver the future model in support of self-care and condition management • Developing an asset based approach – identifying and building relationships with community leaders to strengthen community working and support equitable access and service delivery to meet the needs of all our citizens • Promoting person-centred care and shared decision-making

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Bridge to the Future

Diabetes Services Future Vision:

From…		Phase 1 1st year	Phase 2 2-3 years	Phase 3 5 years +	To…
• Not enough prevention strategies in place to disseminate and sign-post to appropriate information • Inconsistent education/ training across the region • Insufficient access to equitable and consistent services to address risk factors	Prevention & Self-Care	-Scope resources already available e.g. Healthy Living and what else is needed -Target high risk groups with focussed signposting -Roll-out EDEN programme and recruit to administrator -Scope obesity pathway across settings and tiers, working with local councils	-Continued development of resources to build 'passport of resources' for people with diabetes -Expand EDEN training as facilitator capacity increases -Develop and commission obesity pathway -Develop technology solutions through an integrated platform	-Consistent passport of resources which considers the needs of the population -Evaluation of education programme, adapting response as required -Fully integrated obesity pathway -Ongoing evaluation and audit using IT solution	• Consistent and equitable prevention through wide-spread public awareness, education and signposting • Consistent evidence-based practice to support prevention, diabetes treatment and self-management • System-wide equitable and consistent services to address risk factors
• Inconsistent uptake of Structured Education (SE) • Limited and fragmented access to remission therapies • Inconsistent foot care pathway leading to delays in detection and treatment	Treatment and Management	-Confirm consistent SE (DESMOND and DESMOND injectable) offer and target high risk groups and areas of low uptake --Scope bariatric surgery model, aligned with obesity pathway -Utilise COVID-19 learning to implement online/ tele-medicine -Implement diabetes foot protection team	- Roll out DESMOND across the system -Develop, agree and commission a bariatric pathway across the system -Embed foot pathway across ICS, including Silhouette -Develop virtual offer, with consideration to use of AI, tele-medicine and an integrated platform	-Consistent pathway for remission therapies., adapting model for the long term aligned with obesity pathway -Evaluate and monitor foot care pathway and adjust accordingly -Evaluation of SE programmes to ensure improved uptake	• Improved uptake to Structured Education with a flexible offer to meet population need • Consistent and equitable access to remission therapies where appropriate, with links to obesity pathway. • Comprehensive and equitable foot care pathway to support timely access to treatment closer to home
• Longer length of stay for people with diabetes as a co-morbidity • Inadequate access to specialist advice over 7 days • Lack of knowledge across specialist teams on diabetes management • Inconsistent preparation for elective procedures leading to delays	Diabetes in Hospital	-Review National Diabetes IP Audit to identify areas of focus -Define scope of IP service, including optimal configuration, to support workforce to deliver 7 day access -Scope pre-operative pathways -Develop local campaigns to educate IP teams -Consider and test IT solutions (alerts/prescribing/F12/virtual)	-Implement pre-operative pathway – workforce/pre-op hubs/signposting -Implement possible IP configuration changes and recruit to IP team requirements to implement pathway across the system -IT solutions implemented	-Evaluate pre-operative pathway, with continued roll-out -Repeat benchmarking of IP care delivery and adjust accordingly	• Reduced length of stay due to improved diabetes management • Appropriate capacity and skill mix of staff to support delivery of specialist advice and education • Consistent pre-operative pathway to ensure early signposting to advice and support to optimise outcome and prevent delays to treatment
• Inconsistent access to follow up advice and expertise to support long term condition management • Inequity in achieving 3 TT and 9 care processes across the system • Lack of integrated technology to support decision making and support tele-medicine	Whole System Approach	-Link EDEN and mentorship programme – build competence and confidence -Implement tiered approach, GP and DSN as bedrock - target high risk groups and low uptake -Scope mental health support -Scope IT solutions - education/tele-medicine/AI and an integrated platform to support shared-decision making	-Continued roll out of tiered approach across system – adapting response based on evolving skills -Increase access to mental health services for LTC – psychology and signposting -Implement IT solution	-Embedding and evolving response but with consistent principles across system -Improved access to psychological support -Utilise integrated IT solution to support ongoing audit and service improvement	• Consistent and equitable access to specialist advice, with a tiered approach underpinned by education • System-wide improvements in achieving 3TT and 9 care process • Integrated technology across settings, maximising opportunities for tele-medicine and supporting continuous service improvement

10. Conclusions and Next Steps

Conclusions	The review of diabetes services as part of the development of a Clinical and Community Services Strategy for Nottingham and Nottinghamshire ICS has been undertaken using a co-design model where patients, carers, key stakeholders and voluntary sector groups such as Diabetes UK, have collaboratively worked together to shape a vision for the future care system. Although work has progressed well working remotely and holding video meetings, further patient engagement would have been beneficial and will be revisited when the system allows this safely. The four key themes for improvement identified are: • Prevention and Self-Care (with emphasis on education of HCP and signposting to prevention strategies, with a particular focus on access to the National Diabetes Prevention Programme and the development of an obesity pathway and with careful consideration to the wider determinants of health); • Treatment and Management (improving access to structured education through a consistent and flexible offer, structured medication reviews to ensure optimum benefits from medication, considering the evolving evidence in achieving remission from diabetes and aligning with an obesity pathway, ensuring a foot pathway which provides timely access via a single point of access to specialist advice and support • Diabetes in Hospital (ensuring 7 day access to specialist advice, pre-optimisation in advance of elective procedures, realignment of inpatient diabetes care in line with community provision, discharge planning to support continuity of care); • Whole System Approach (delivering a tiered approach to long-term condition management to support achievement of 9 care process and 3TT to prevent complications, optimise and integrate the use of technology and virtual service delivery to support shared decision-making and care closer to home). The review describes a future care system in optimal care settings and with care provided at different levels of urgency and envisages 6 high priority programmes to transform care: • **High** –Whole system Education Programme cutting across the ICS • **High** – Whole system approach to obesity prevention and treatment, with improved access to consistent and equitable services • **High** – Consistent and equitable approach to diabetes treatment and long-term condition management • **High** – Improve access to specialist advice in advance of and during inpatient hospital stay • **High** – Develop a foot pathway to support equity of provision across the system • **High** – Virtual offer and the use of tele-medicine to support capacity and demand and optimise service offer To achieve these there are a range of enabling requirements for the ICS across workforce, estate, technology, culture and financial systems. Collectively these initiatives can transform and provide long term health improvement and sustainability in the area of diabetes care in the Nottingham and Nottinghamshire ICS.
Next Steps	This strategy sets the future direction of development diabetes care in the ICS and it is proposed it will shape future work of the ICS in a number of ways: • The identified priorities and programmes should be used to inform commissioning ICS, ICP and PCN activity • The enabling activities require development and inclusion in the relevant ICS workstreams to inform their work programmes • The impact on estate and configuration changes require inclusion in a programme of pre-consultation business case development alongside the service changes recommended from other reviews. • The aggregate impact of the collective suite of service reviews should be used to shape focus of future service provision in acute and community settings in the ICS

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11. List of Abbreviations

3TT	3 Treatment Targets	LD	Learning Disability
ABCD	Association of British Clinical Diabetologists	LoS	Length of Stay
ACR	Albumin to Creatinine Ratio	LTC	Long Term Conditions
AHP	Allied Health Professional	LTP	Long Term Plan
AI	Artificial Intelligence	MDT	Multi-Disciplinary Team
App	Application	MECC	Make Every Contact Count
BAME	Black, Asian and Minority Ethnic	MH	Mental Healthcare
BMI	Body Mass Index	Mid Notts.	Mansfield & Ashfield, Newark & Sherwood
BP	Blood Pressure	NCH	Nottingham City Hospital
CCSS	Clinical and Community Services Strategy	NHFT	Nottinghamshire Healthcare Foundation Trust
CCG	Clinical Commissioning Group	NHS	National Health Service
COVID-19	Coronavirus Disease 2019	NHSE/I	National Health Service England and Improvement
CVD	Cardiovascular Disease	NICE	National Institute for Health and Care Excellence
DESMOND	Diabetes Education and Self Management for Ongoing and Newly Diagnosed	Notts.	Nottinghamshire
DSN	Diabetes Specialist Nurse	NUH	Nottingham University Hospitals
DiRECT	Diabetes Remission Clinical Trial	OOH	Out of Hours
DNA	Did Not Attend	OP	Outpatient
DPP	Diabetes Prevention Programme	PCDS	Primary Care Diabetes Society
EBP	Evidence Based Practice	PCN	Primary Care Network
ECR	Electronic Care Record	PCP	Personalised Care Plan
EDEN	Effective Diabetes Education Now	PCR	Protein to Creatinine Ratio
ED	Emergency Department	PH	Public Health
EMAS	East Midlands Ambulance Service	PHE	Public Health England
EoL	End of Life	PHM	Population Health Management
F2F	Face to Face	PID	Project Initiation Document
FTE	Full Time Equivalent	PKB	Patient Knows Best
FU	Follow up	PN	Practitioner Nurse
GP	General Practitioner	QoL	Quality of Life
GPwER	General Practitioner with Extended Role	QIPP	Quality, Innovation, Productivity and Prevention
HbA1c	Glycated haemoglobin	QMC	Queens Medical Centre
H&SC	Health and Social Care	RCP	Royal College of Podiatry
HCP	Healthcare Professional	ROI	Return on Investment
HPB	Hepato -Biliary	RTT	Request to Treatment
IAPT	Improving Access to Psychological Therapies	SC	Social Care
ICP	Integrated Care Partnership	SFH	Sherwood Forest Hospitals
ICS	Integrated Care System	T1DM	Type 1 Diabetes Mellitus
IP	Inpatient	T2DM	Type 2 Diabetes Mellitus
IT	Information Technology	UK	United Kingdom
KMH	Kings Mill Hospital	VLCD	Very Low Calorie Diet

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12. Data Sources

Data Sources	Community Delivery Model for Diabetes Care; Engagement Report Diabetes UK Local Data from CCGs, eHealthScope National Institute for Health and Care Excellence NHS England NHS Digital NHS Long Term Plan Nottingham & Nottinghamshire ICS Population Health Management Office of National Statistics Public Health England Royal College of Ophthalmologists UK National Bariatric Surgery Registry 2014

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