

Best Practice in the Delivery of Diabetes Care in the Primary Care Network

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Executive Summary

The landscape of diabetes mellitus is changing; with its growing prevalence, interest in type 2 diabetes remission, shift of management from glucose-centric to reducing disease burden, evolving technology and greater treatment repertoire. Furthermore, the needs of people with diabetes are changing to include a younger population, requiring earlier intensive management, including support with self-management and allowing people with diabetes to flow through the different areas of the NHS dependent on their needs at the point of access to healthcare. The need for improving glycaemic control and changing the way diabetes care is delivered has been highlighted not only by the number of recent cardiovascular outcome trials but also the events of the COVID-19 pandemic; with diabetes being an independent risk factor for mortality related to COVID-19.¹

The restructuring within Clinical Commissioning Groups (CCGs) to develop Primary Care Networks (PCNs) gives an opportunity to strengthen joined-up specialist care and provide a diabetes service addressing the holistic needs of the person with diabetes, together with meeting the greater needs of the population.

We have reviewed the current literature and diabetes services available, identifying best practice and gaps in the delivery of diabetes care. This guideline discusses various recommendations based on these findings particularly on the development of diabetes care delivery at the level of the PCN.

We have identified five key priorities:

1. Early referral and intensive treatment for people newly diagnosed with diabetes including **attendance** at structured education
2. The focus for diabetes management should not solely reside in glycaemic management. Proposed care processes address the need for a holistic approach and the need to **address long-term disease burden**.
3. PCNs will work within their new structures to deliver **focussed care** to certain groups and underserved populations in their localities e.g. people with frailty, young adults, people of Black and Minority Ethnic (BAME) background, people with type 1 diabetes, people with learning difficulties.
4. In order to deliver the above key priorities, the formation of a **DiaST (Diabetes Support Team)** within the PCNs is essential. Supporting structures for governance and training needs to be present within each PCN to enable this.
5. Ensuring high-quality diabetes care across the board requires healthcare professionals delivering diabetes care are appropriately **educated and upskilled in diabetes management**, which will be supported by the PCN DiaST.

These key priorities will be the focus point for review and discussion with the newly appointed National Enhancing Diabetes Services (NEDS) team, as well as aiming to support sharing good practice across England.

A quick “How to” guide, providing a summary of the key messages from this guideline, is [available here](#) in the Journal *Diabetes & Primary Care*.

Foreword 1

While care, clinical outcomes, particularly cardiovascular, and longevity have all improved for people with diabetes over the decades, challenges remain. Tackling variation in care and outcomes across England remains an important goal, with inequalities thrown into greater focus by the COVID-19 pandemic – around a third of all COVID-19 related deaths in hospital in England were in people with diabetes, with inequalities according to socioeconomic status and ethnicity further exaggerated by the pandemic. The same dimensions of inequalities also impact on those most likely to develop Type 2 diabetes.

Achieving integrated care across primary, community and secondary care we know is important, and the latest evolutions in infrastructure for the NHS in England, particularly the movement to Integrated Care Systems, will provide exciting opportunities to address this challenge. The development of Primary Care Networks (PCNs) provides us with another exciting opportunity, and allows us to re-examine priorities for diabetes care, supporting us to address variation in access and care and also to develop systems that will support the challenges of the future.

This document, shaped by a cross-section of healthcare professionals providing diabetes care, nicely articulates the opportunities and potential solutions that PCNs can provide, drawing on current best evidence to impact positively on peoples' lives. The focus on education for both staff and those living with diabetes, as well as the prioritisation of higher risk groups such as those with young-onset Type 1 and Type 2 Diabetes, is indeed welcome. The document describes solutions on delivery against these priorities, which we hope will be useful in supporting colleagues in primary care.

We are grateful to the authors and contributors for producing this excellent piece of work, which can support local systems to develop their PCNs with an appropriate focus on diabetes care and Type 2 diabetes prevention.

Jonathan Valabhji
National Clinical Director for Obesity
and Diabetes, NHS England

Partha Kar
National Specialty Advisor, Diabetes,
NHS England

Foreword 2

It is well known that we still, despite many years of progress and concerted effort, have unacceptable variation in the quality of diabetes care across England (and the UK). So much of that care is delivered through primary care and depends on the primary care workforce having knowledge, skills and the support of diabetes specialists when needed.

COVID-19 has brought disruption to the whole system of diabetes care, bringing both a need for renewed effort in ensuring everyone receives the care they need to live well with diabetes and an opportunity to address the inequality that exists for many communities.

The introduction of Primary Care Networks (PCNs) has created a new mechanism of support for primary care. It provides an opportunity to share good practice, upskill and develop the capacity of

colleagues in primary care more directly. It also provides a vehicle to allow specialists in diabetes to offer support.

This guidance is a timely intervention. It brings deep clinical expertise, as well as robust principles of system organisation to the challenge of variation in diabetes care. It offers both practical, 'how to...', suggestions along with a stretching vision of the future organisation of care. We strongly welcome the 5 priorities identified by the guidance and, particularly, the call to reduce inequality through targeted work with underserved groups.

We believe that the adoption of this guidance will be a crucial step on the journey to equitable diabetes care and improved outcomes for those who receive their diabetes care in primary care, now and in the future.

Chris Askew
Chief Executive, Diabetes UK

Foreword 3

The coronavirus pandemic has highlighted significant inequality in our society, and disproportionately affected people with diabetes, as well as disrupting delivery of diabetes services and care. As we recover diabetes services, it is important that we do so in a way that supports people with diabetes, addressing their concerns and supporting where we can with all aspects care, including the complex array of life-challenges that impact overall health and wellbeing.

This document focuses on delivery of diabetes care within Primary Care Networks (PCNs), setting out a vision for collaborative, integrated working, that seeks to optimise the delivery of diabetes care, making effective use of resources and multidisciplinary clinical expertise. Most importantly, people with diabetes are placed at the centre of care. Although accurate recording of care processes, biometrics and encouraging the achievement of treatment targets remain important, this model focuses on holistic care, recognising that people with diabetes are individuals, with different challenges in life, both clinical and non-clinical. Improving overall health and wellbeing requires collaborative multi-agency working to identify those factors that are important to the person with diabetes and to provide focused support that addresses unmet need. It is also essential that healthcare and other professionals contributing to diabetes care are supported, with access to expert advice and guidance, as well as educational resources that facilitate continuing professional development.

Despite the devastation caused by the pandemic, there is an exciting opportunity to refocus our efforts and build on what we have learned to help us create a care system that better addresses the need for individualised, person-centred care and I believe this document sets out a vision of how that might be achieved.

Claire Hambling
Chair, Primary Care Diabetes Society

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1. Introduction

Chronic conditions such as diabetes mellitus are already managed within an integrated care set-up in many parts of the country; which is in keeping with the NHS Long Term Plan for co-ordinated care. The restructuring within Clinical Commissioning Groups (CCGs) in developing Primary Care Networks (PCNs), gives an opportunity to further strengthen the idea of joined-up and coordinated care, removing the traditional barriers (between care institutions, teams and funding) to deliver a seamless service addressing the holistic needs of the person with diabetes (and/or their families/carers) in a 'single episode of care'.² This focuses on the person with diabetes being at the centre of care and supporting that person throughout their health condition journey.

Diabetes continues to be a growing health concern with 4.7 million people in the UK known to have diabetes; a number which has more than doubled in the last 20 years. Given the macrovascular complications of diabetes, the mortality rates remain high; every week more than 500 people with diabetes die prematurely.³

By further developing the delivery of diabetes care at the level of the PCN, this allows for not only joined-up coordinated care but also early specialist intervention and management where appropriate. This guideline discusses the enhanced PCN diabetes service in more detail below; however, in summary it includes:

1. Recommendation for early 2-week referral on diagnosis of diabetes for structured education, dietary input, individual goal setting and the opportunity of exploring remission of type 2 diabetes.
2. Recommendation of care processes with long-term disease burden for people living with diabetes in mind as key values.
3. Development of a new PCN enhanced tier system with an MDT approach, specifically with the creation of the **Diabetes Support Team (DiaST)**. This allows for the PCN to provide support, mentorship and clinical governance in diabetes to all practices in their locality
4. PCN clinics for special groups, including: people with a new diagnosis, young adults, women of childbearing potential, those struggling to meet individualised target levels for their diabetes, those with other co-morbidities and initiation/management of injectable therapies.
5. PCN led and monitored training/ upskilling of dedicated HCPs involved in the delivery of diabetes care.

Figure 1. Demonstrates the seamless movement of the person with diabetes through the tiers of healthcare dependent on their health needs

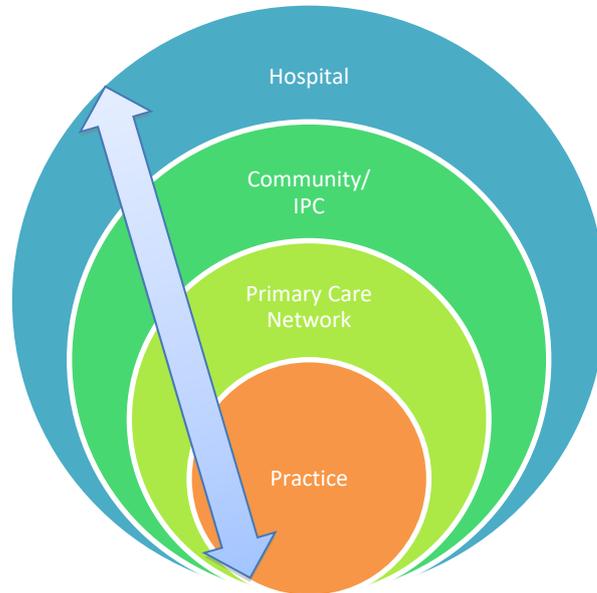
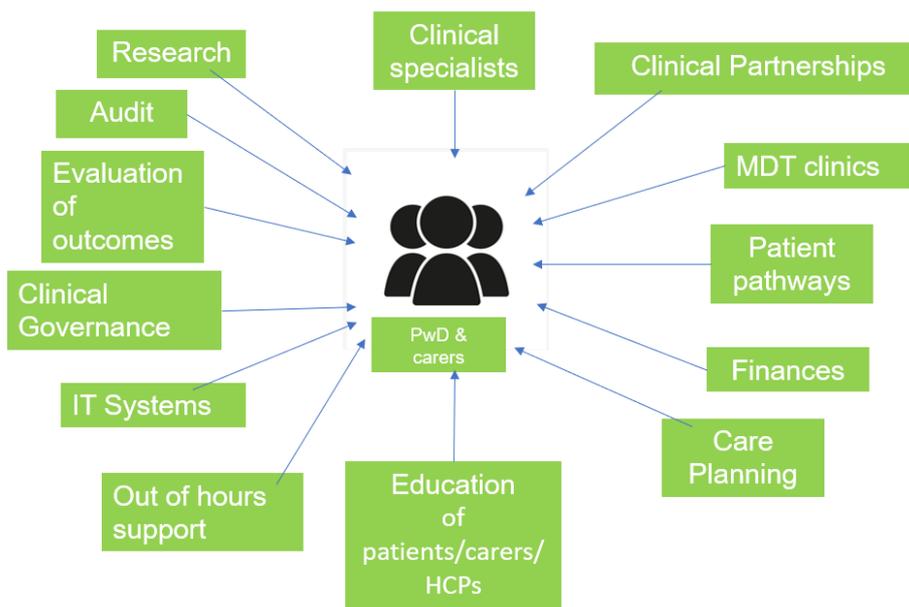


Figure 2. Key ingredients for optimal coordinated diabetes care

Key ingredients for optimal coordinated diabetes care



With an ageing population compounded by people having increasingly complex health and social needs, the NHS faces financial and workforce challenges. Care management needs a coordinated multidisciplinary team (MDT) approach, that focuses on effective early care in primary and community settings to reduce pressure on acute services (and reduce the onset of diabetes complications).²

It is recognised that people of all ages need to be central to discussions about their diabetes management. People living with diabetes ultimately should be in charge of their own physical and mental wellbeing where possible and facilitation of this is key.⁴ This guideline supports and addresses the need to provide a coordinated MDT approach to patient centred care delivered in a location close to home.

There is a recognition that a 'one-size-fits-all' approach is unlikely to succeed in addressing the complexity and variety of needs of people living with diabetes. Differentiated services need to address prevention of co-morbidities, reduction in inequalities and be responsive to diversity, hence adopt an individualised approach where required.²

How will this guideline affect the person with diabetes?

For the person living with diabetes, this guideline aims to ensure they receive appropriate early structured education and management input, with improved, early access to specialist services and the multidisciplinary team. By standardising delivery of diabetes care, this should reduce variation in diabetes care. Furthermore, there should be a smooth flow of movement through the different levels of service depending on management needs at any one time point in their diabetes care journey.

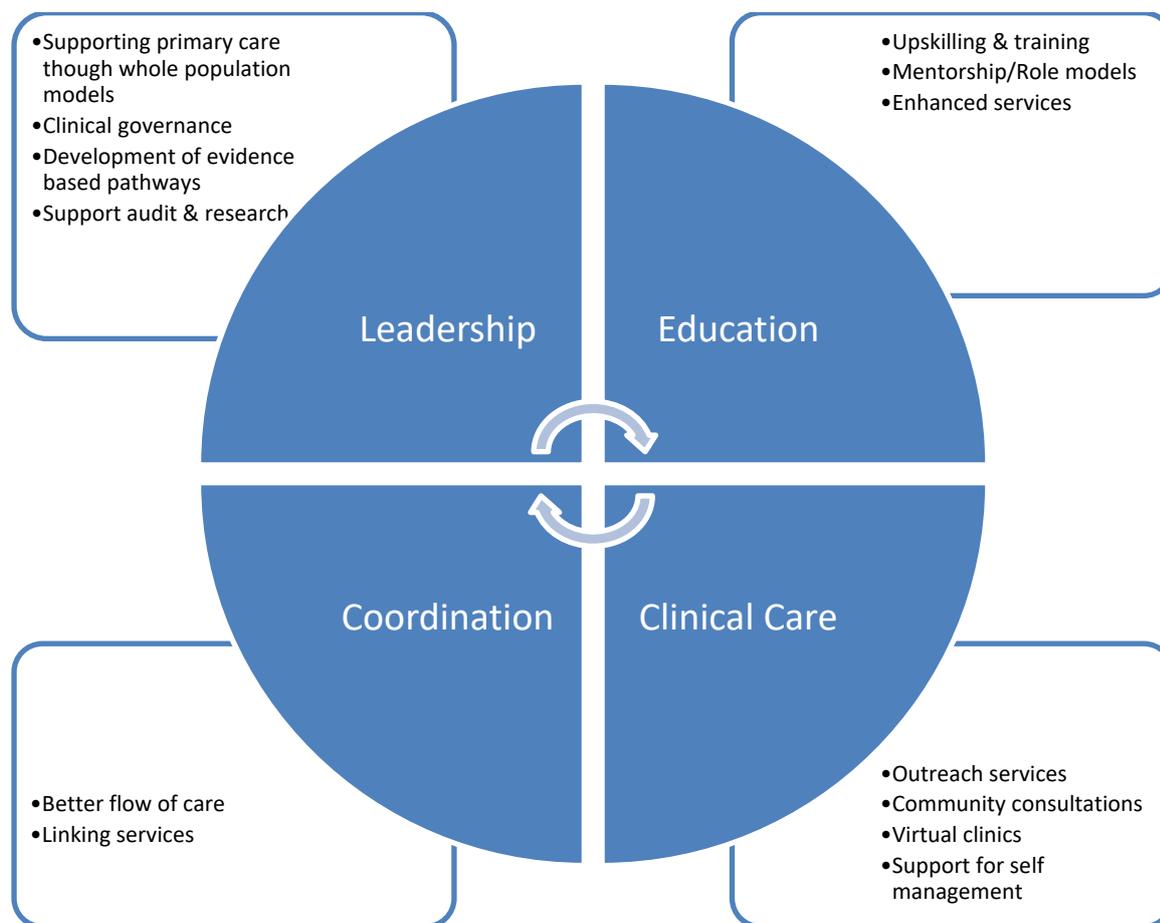
How will this guideline affect primary care?

For primary care networks, this guideline sets out standards for the management of different patient groups, as well as education and training of staff to ensure provision of high-quality, coordinated patient-centred care across the board.

How will this guideline affect secondary care?

For secondary care settings, this is an opportunity to move appropriate patient care into the community, whilst improving access to specialist services to those who require this; in addition, further developing working relationships with primary care and dissolving 'in silo' working, in order to deliver collaborative, coordinated and effective patient-centred care.⁵

Figure 3: Caring for People with Diabetes: 4 Pillars of Care



Adapted from: *Future Hospital: Caring for medical patients*⁶

2. Model of diabetes care – Tiers of care overview

In order to ensure people with diabetes are seen in the right location, the model below (see Figure 3) has been developed based on the South East Hampshire and Portsmouth Super Six Model. The new model divides diabetes care into four main tiers of care; incorporating primary and secondary care, with the addition of a new tier at the PCN.

The Super Six model highlights the need for ongoing specialist diabetes services in secondary care, but allows for other diabetes care to move to the community; much of which can be supported by this enhanced PCN tier.

Figure 4: Tiers of diabetes care



Tier 1 diabetes care (Practice-based) aims to ensure that every practice is offering a basic level of care available for all those living with diabetes. This would include:

- lifestyle advice
- encouragement to attend structured education
- foot examinations & foot care education
- lipids and blood pressure management
- basic CKD management
- initiation of oral medications as well as Injectables, depending on competency
- preconception advice
- signposting to other support services e.g. smoking cessation, wellbeing advisors, retinopathy, periodontal, weight management services, exercise on prescription.
- mental health and emotional wellbeing screening.

Tier 2 Diabetes Care (PCN DiaST care) is the new enhanced tier at the PCN. The new “**DiaST**” **Diabetes Support Team** placed here will provide a new enhanced level of diabetes care with an MDT approach. These practitioners will manage their own caseload and referrals for complex cases unable to be managed at tier 1 care and/or not meeting individualised treatment targets. Care at this level includes GLP-1 initiation, insulin initiation and multiple morbidity review. In addition, all new diabetes cases will be referred here to access dietary support, education and support for diabetes remission where appropriate. Furthermore, women of childbearing potential and all young adults with diabetes (as discussed below) will be seen in Tier 2. These practitioners will also provide support and supervision for care homes and will advise others in the community MDT e.g. district nurses/active case managers.

Bright Outcomes: Tier 2 Diabetes care – London Borough of Barnet DQIST	
<i>What was done?</i>	<i>What were the outcomes?</i>
<p>Barnet Federated GPs (BFG) utilised Diabetes Transformation Fund to establish a ‘Diabetes Quality Improvement Support Team’ (DQIST) in 2018.</p> <p>The DQIST consists of a supervisory manager and GP from the BFG; and the clinical service was led by two GPs with a specialist interest (GPwSI) in diabetes, together with two Diabetes Specialist Nurses (DSNs), and a team of dieticians and healthcare assistants.</p> <p>Objectives of the DQIST: Improve standard of clinical processes and management of type 2 diabetes in primary care (particular focus on improving the</p>	<p>Patient feedback highlighted satisfaction:</p> <ul style="list-style-type: none"> • convenient location and timings of these clinics • longer appointment duration of 20 minutes • clear focus on their diabetes management <p>Limitations: Significant patient non-attendance, may have been related to the direct contact made by the DQIST service with patients, without prior notification by their own GP of the referral.</p> <p>Moving forward in the second year: No longer used 3TT audits to identify patients for practices. Instead developed a GP-led referral system for any patient requiring diabetes management support. Referrals were invited from all Barnet practices, and underwent a virtual review by a DQIST GPwSI with four potential pathway outcomes:</p>

achievement of 3 Treatment Targets)

The DQIST programme ran over a two-year period between April 2018 and March 2020. During the first year a group of 12 GP practices in Barnet, were offered a service of audit identification of patients not achieving the 3TTs, with recommendation for a face-to-face review by the DQIST service in a clinic held twice a week from two primary care sites, on a weekday evening and weekend morning. During these clinics, the DQIST were able to access the patient's GP records using EMIS Community software, and entered their own consultation notes into the records for the patient's own GP to view. A multi-disciplinary approach allowed the DQIST GPwSI's to review patients and optimise their diabetes management, with the option of follow-up with a DSN and dietician.

- a written care plan, with advice and guidance on medication management for the patient's own GP to implement
- a face-to-face DSN appointment, for more complex cases or those requiring injectable therapy adjustment or GLP-1 analogue initiation
- a dietician & DSN education session (either group or one-to-one, depending on individual circumstances)
- a referral to the community diabetes service for emergency clinic assessment, or insulin initiation

This revised system for:

- DQIST involvement
- improving effective skill use of clinicians within the DQIST service
- development of GP's diabetes expertise through GPwSI advice and guidance entered after virtual assessment of referrals
- Support and mentorship – optional 2-hour visit to all practices in Barnet by a DQIST GPwSI and IT lead; to discuss the DQIST service, review practice-level diabetes performance data from analytic software and to review challenging cases of diabetes management
- Practice nurse diabetes education in the form of 'PrePITstop' training sessions

Over the two years of DQIST service:

- 3TT achievement for Barnet increased from 41.1% to 43.7%,
- Key Care Processes achievement for Barnet increased from 40.7% to 56%
- Patients reviewed by the DQIST service achieved an average HbA1c reduction of 6 mmol/mol
- Proportion of patients achieving their HbA1c target and all 3TTs also increased by 7% and 6% respectively.

Unfortunately, the Barnet DQIST was decommissioned in March 2020 having been unsuccessful in their bid for sustainability funding. During the two years of activity, the DQIST service received £354,262 in funding and assessed approximately 1300 patients from Barnet GP practices. The service identified the positive impact of accessible specialist services within a primary care setting for patients. However, fulfilling the potential of such a service may require the development of a greater integration with community and secondary care diabetes pathways, in order to support a wider service that improves access and clinical outcomes for the local community.

Tier3 Diabetes Care (Integrated Care from Associated Secondary Care Trust) Supported by secondary care this will be multidisciplinary and led by a team of experienced practitioners (a Lead Consultant Diabetologist and/or Senior DSN/Consultant Nurse, Senior Specialist Dietitian and Lead Pharmacist practicing at RPS mastery level). The benefits of this are exemplified in the Camden Integrated Practice Unit (Bright Outcomes Box below). This supports clinicians in primary care by delivering targeted clinics e.g. ASCVD clinic for people living with diabetes, renal outreach clinics, those needing technology, complex insulin, frailty, as well as virtual clinics and establishing care plans for people with complex needs. Targeted clinics allow PCNs to support timely care to population in response to changing evidence, introduction of new therapies and technologies.

Bright Outcomes: Tier 3 Diabetes care – London Borough of Camden Integrated PU	
<i>What was done?</i>	<i>What were the outcomes?</i>
<p>Camden Diabetes IPU was created in 2015 to bring together the previously fragmented diabetes service. It is one of the first true integrated multi-partner value-based contracts in the country.</p> <p>It uses population value-based outcomes rather than activities-focussed and is incentivised to provide good diabetes care. Patients stakeholders helped develop key priorities.</p> <p>Previously Camden, North London with its diverse and large ethnic minority population with big differences in wealth and deprivation has had a gap in life expectancy.</p> <p>Outcomes for the Camden IPU:</p> <ol style="list-style-type: none"> 1. Improving the management of diabetes within the population 2. Avoiding complications for people diagnosed with diabetes 3. Patient reported outcomes 	<ol style="list-style-type: none"> 1. With population outcomes: <ul style="list-style-type: none"> Increase in the number of people with target BP from 72.3% to 75.9% Increase of people with total cholesterol < 4 mmol/l from 42.7% to 45.9% Number of people with HbA1c \leq 53 mmol/mol is relatively stable (51.3% to 49.8%) 2. The services have supported a 63% reduction in admissions (hyperglycaemia/hypoglycaemia). Diabetes death rates have come down significantly. Major amputation episodes have stayed low and stable 3. Feedback from ~900 people with diabetes: <ul style="list-style-type: none"> 76% found it easy to get the care they needed when they needed it. 87% felt confident in managing their diabetes. 67% had enough support from local services

Tier 4 Diabetes Care (Secondary Care Trust) is based on the Super Six model, with care provided in a secondary care MDT setting and will include the six following populations: inpatient diabetes, foot diabetes MDT, Type 1 diabetes, CKD 4 and 5, those with renal replacement therapy, antenatal diabetes, adolescents with diabetes.

Bright Outcomes South East Hampshire and Portsmouth Super Six Model

What was done?

The project defined six services to remain within an acute care setting:

- inpatient diabetes
- foot diabetes (with predefined criteria)
- poorly controlled Type 1 diabetes, including adolescents
- insulin pump services
- low eGFR or patients on renal dialysis
- antenatal diabetes.

All other people were managed in primary care.

A combination of remote consultation and practice visits aimed to upskill the primary care workforce. A variety of modalities were used to deliver this e.g. virtual clinic, data base review and audit work review. This was supported by the community diabetes nurse specialist team.

What were the outcomes?

- High level of user and practitioner satisfaction
- 29.5% decrease in the rate of admissions from DKA, a 42% decrease in the rate of admissions from hypoglycaemic events and a 30% decrease in the rate of HHS admissions
- Reduced the rate of myocardial infarctions by 22%, the rate of CVAs by 22% and reduced the rate of major amputations by 39%
- Total healthcare cost savings of approximately £1.9 million
- Allowed for development of higher quality care for the super six through reinvestment

Tier 2 and 3 Diabetes Care will also focus on mentorship and supporting individual practices as well as ensuring training and upskilling of all HCPs. Appendix 1 highlights some successful established integrated care models.

2.1 Tier 2 Diabetes Care: Enhanced PCN care with Diabetes Support Team (DiaST)

Collaborative working is fundamental to the delivery of diabetes care in the PCNs and a multidisciplinary approach is essential to ensure all core elements of care are met. Primary care has historically struggled with insufficient staffing and capacity to meet rising patient demand and complexity.² New funding available through the primary care network contract will be required to support the essential roles integral to the diabetes service delivery.

Each PCN will have a multidisciplinary clinical team “DiaST” (Diabetes Support Team) as a gold standard and the roles of these key players will be discussed below in more detail; however, should consist of:

1. **GP with an extended role in diabetes (GPwER)**
2. **Practice Nurse with special interest in diabetes**
3. **Clinical Pharmacist**
4. **Community/Intermediate Diabetes Specialist Dietitian**

DiaST key player	Roles
GPwER in diabetes or GP with an Extended Role (GPwER)	<p>GPwER will work in collaboration with the PCN Practice Nurse with a Specialist Interest in Diabetes, Specialist Pharmacist and Dietitian to deliver the tier three levels of diabetes care; to encompass those with more complex diabetes needs and liaise with the Community Tier MDT to ensure seamless care is delivered as persons with diabetes move bi-directionally through the integrated system of care. They will have responsibilities with the other Lead HCPs in ensuring education and clinical governance across the PCN to include the care homes the PCN has within its structure. The GPwER will continue to meet the requirements set out in 'The RCGP framework to support the governance of General Practitioners with an Extended Role.'⁷</p>
Practice Nurse with special interest in diabetes/Community Nurse with Special Interest	<p>The Integrated Career and Competency Framework for Adult Diabetes Nursing was published in 2019 and sets out clear criteria for five levels of competencies for the effective nursing care of those at risk of or living with diabetes.</p> <ol style="list-style-type: none"> 1. Unregistered practitioner 2. Competent nurse 3. Experienced or proficient nurse 4. Senior practitioner or expert nurse 5. Nurse consultant. <p>The PCN model reflects these levels of competence with the 'Practice Level Nurses' working at competency levels two to three whilst the Practice Nurse with a Specialist Interest in Diabetes will sit at levels three to four and the Specialist Nurses working within the community will reflect the competencies set out in levels four to five.</p> <p>From the person with diabetes' perspective, the practice nurse is often the first point of contact and the person who both delivers and links many aspects of their diabetes care, signposting to other MDT members as necessary. In collaboration with other HCPs such as HCAs and pharmacists the practice nurse will have the responsibility to deliver the annual review assessment and offer support with the ongoing lifestyle management of Type 2.</p> <p>The Practice Nurse with a Special Interest in Diabetes will have responsibility in partnership with other HCPs within the DiaST Team of the triage of those who are newly diagnosed with Type 2, support with structured education under the two-week rule and in the delivery of enhanced care to those with more complex diabetes needs. There will also be an important role in the delivery of diabetes education, mentorship and clinical governance across the PCN.</p>
Clinical Pharmacist	<p>The Clinical Pharmacist plays a key patient facing role in medication reviews, particularly in high-risk groups of people e.g. frail elderly, care home residents, those with multi-morbidity on polypharmacy, those with renal impairment, hepatic impairment and those with recurrent hospital admissions.⁸ They add value to the training and governance structure of the diabetes services within the PCN. Roles will also include review of repeat prescriptions, leading on evidence based changes in prescribing, liaising with colleagues to support medicines adherence (e.g. pharmacy technicians and community pharmacists), supporting improvements using clinical audit, offering prescribing and medicines information advice and support for transfer of care e.g. reconciliation of medications post discharge from hospital.⁸ Pharmacists are key to avoiding clinical inertia, closer monitoring and review of medications and support for staff with medication safety. Pharmacists lend support to management of the quality and outcomes frameworks, care processes and enhanced services. They also will support public health campaigns aligned with diabetes.</p>

Community/Intermediate Diabetes Specialist Dietitian (DSD)	<p>A registered dietitian specialising in diabetes will guide the nutrition advice provided to people with diabetes in the PCN caseload. There is the opportunity for a networked approach for the provision of dietetic support across local PCN's and between Tier 2 and Tier 3 Diabetes Care. A Diabetes Specialist Dietitian (DSD) working within the DiAST team would provide significant opportunities to improve care for people with diabetes in relation to nutrition with early advice and interventions. Furthermore, the dietitian is integral to education, playing a key role in facilitation, audit and development of high-quality patient education for people with Type 2 and Type 1 diabetes, as well as to training and competency-building of HCP's in the community. There is scope for education to be delivered using e-learning, virtual group clinics and live webinar education, which would help to improve access for patients and staff.</p> <p>DSDs are registered with the HCPC and are required to stay up to date with public health and scientific research on food, health and diabetes.⁹</p>
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2.2 Supportive Roles

2.2.1 HCAs

Healthcare assistants are valuable members of staff that are often overlooked and underused. Whilst continuing to deliver basic care (such as blood pressure checks, BMI measurements, phlebotomy services, urinalysis and signposting to other support service e.g. smoking cessation), there is an opportunity to develop their role further; for example, performing annual foot checks, involvement in structured education and group consultations. This will enable practice nurses and other HCPs to develop into more specialised roles in diabetes care delivery, as well supporting career progression and advancement for the HCAs.¹⁰

HCAs will need to receive adequate training and meet competencies for these advanced roles and clinical decision making will remain the responsibility of the named practitioner within the PCN DiaST. To support this, clear protocol driven standard operating procedures are required to ensure people are referred for example, from group consultations, foot checks and structured education if further input is needed.

2.2.2 Podiatrists

It is essential to keep diabetic foot checks and management a priority as early diagnosis and management will reduce the risk of life changing disease and amputation. In 2014-15 the annual cost of diabetic foot disease to the NHS in England was estimated at around £1 billion (approximately 1% of the total NHS budget) in addition to the personal/social costs of reduced mobility and sickness absence.¹¹ More than 70,000 people with diabetes in England and Wales are thought to have foot ulcers at any given time, with around 8,793 minor (below the ankle) and major (above the ankle) amputations in people with diabetes in England each year. Furthermore, only around three in five

people with diabetes who have had a diabetic foot ulcer survive for five years, dropping to half for those having a major amputation.³

Once foot issues are identified, these patients should be referred to existing secondary or community Podiatrists with clear referral criteria and pathways. Community Podiatrists and PCNS should have appropriate links to secondary and tertiary foot services. Podiatry services are often overwhelmed and to highlight urgent cases for appropriate, timely advice and management, virtual clinic platforms are an important consideration and are being trialled (see Bright Spark box below).

Bright Spark Box: Podiatry service at the Royal Free London NHS Foundation Trust

What was done?

The Royal Free London NHS Foundation Trust provides podiatry service both in secondary care but supports the Barnet, Camden and Islington community podiatry services.

As part of the Diabetes MDFT Transformation Bid and the COVID-19 pandemic, the Virtual Hot Clinic was set up.

This allows not only facilitation of urgent consultations when face-to-face appointments are limited due to COVID-19 but also moving forward will allow for urgent opinions to be given with the aim to providing treatment early and reducing poor foot outcomes, as well as potentially having an impact on reducing footfall into secondary care.

The Virtual Hot Clinic service was accessible by both patients directly as well as GP and community podiatrists, giving the opportunity to create a far more integrated care service.

Highlights from the Telemedicine so far are:

- A phone number for emergency reviews; any HCP can call and will be given details to log into the system.
- A virtual clinic where patients having redressings can log in themselves to a dedicated appointment; these slots have been set up on Cerner. This can also be used by podiatrists/nursing teams and has proved invaluable for teams working in care homes and on home visits.

Issues so far:

- Not all IT systems in NCL support Chrome/Safari.
- Staff reluctant to use their own mobile data for video appointments when Wi-Fi isn't available.
- Some of the older patients have struggled accessing the service on their mobile phones, although grandchildren on the landline have been invaluable!
- Uptake was not as rapid as we had hoped.

Data will need to be collected on outcomes as well as assessing how many patients will have come to harm through cancelling appointments.

Bright Spark Box: MARS (Manchester Amputation Reduction Strategy)

What was done?

MARS is a commissioning strategy aimed to reduce the major limb amputations in line with the national average (36% reduction). It is designed to prevent, manage and heal chronic foot and leg ulcers. To do this it implements a single community referral pathway and also incorporates a lower limb management pathway and specialist wound service teams.

2.2.3 Pharmacy Technicians

Pharmacy technicians are to be funded through the new GP contract agreement and will play a synergistic role to pharmacists in delivery of quality care to those living with diabetes. Pharmacy technicians are unable to prescribe or make clinical decisions. Under supervision, however, they are valuable in ensuring safe and efficient use of medicines, supporting concordance through shared decision-making conversations with people and performing medicines reconciliations.

More duties could include the management of prescription services, medicines information queries (within competence), undertaking appropriate searches for clinic list populations, clinical audit and quality improvement work.

Bright Spark Box: Improving Medicine Adherence Lambeth Diabetes Intermediate Care Team

What was done?

This project focused on people with Type 2 diabetes seen in a community diabetes clinic for optimisation of diabetes including glycaemic control and cardio-renal risk factor management

This service improvement pilot was undertaken in a number of clinics as part of a final year King's College London MPharm project (n=145)

Levels of medication adherence were identified using:

- (a) Beliefs about medicines questionnaire
- (b) Morisky Medication Adherence Scale
- (c) Kings Health Partners Screener

The questionnaires were used to prompt discussions with clinicians and patients in consultations. 57% of patients reported some form of medication non-adherence, with the most common issue reported as 'I sometime forget to use the medicines(s)'.

No comparator was used, however, level of adherence in the population were compared to published studies.

This initiative has helped to ensure adherence is reviewed by all clinicians as part of everyday practice in Lambeth, as well as identifying those patients who may benefit from clinical pharmacist/pharmacy technician input.

Plans have been developed with Professor Weinman at King's College London to use the screener in a wider cohort of people with Type 1 and Type 2 diabetes with one or more macrovascular or microvascular complications of diabetes in a secondary care setting

2.2.4 Community Pharmacists

Community pharmacists are an extremely valuable resource at the heart of communities, playing a key role in engaging with some of the most at-risk type 2 diabetes population groups such as vulnerable people, shielding members, those with language and cultural barriers and in rural localities.

81% of pharmacies are already healthy living pharmacies (HLPs), providing comprehensive advice on healthy lifestyles and a variety of commissioned services e.g. stop smoking services, blood pressure monitoring, flu vaccinations, foot checks etc. The PCN DiaST should be aware of the locations of their healthy living pharmacies.

The New Medicines Service (NMS) is an NHS England commissioned service and should be utilised fully to support and educate people living with type 2 diabetes who have been started on new diabetes related medications in hospital; this is of particularly relevance as it has been reported that up to 50% of people do not take medications as intended.¹² This will support prevention of drug related errors as well as hospital readmissions.

Furthermore, Community Pharmacists could potentially provide services such as foot checks and mental health screening, as well as reminders to patients about performing retinal screening, urinary Albumin: creatinine ratio (uACR) screening and attending structured education.

Bright Outcomes: Foot checks in Community Pharmacy Olutayo Arikawe – The Priory Community Pharmacy

<i>What was done?</i>	<i>What were the outcomes?</i>
Pharmacist explains procedure and importance of foot check to patient	20 patients were screened in the pharmacy; seven of which were referred to their diabetic nurse or GP for further evaluation. All patients given leaflets on foot care and importance of attending annual diabetic foot-check Conclusion: Diabetes leads to 169 amputations a week. Community pharmacy teams see about 1.6 million people/day who may not be seen by any other healthcare professionals. They are well equipped to provide opportunistic health advice and services to patients and reduce health inequalities.
Pharmacist is trained and does foot checks for people living with diabetes	
Pharmacist refers patient to their GP/Diabetic nurse if peripheral neuropathy is detected	
Pharmacist provides a diabetic foot care leaflet to all patients.	

2.2.5 Community Nurses/Active Case Managers/Crisis Teams

One in four people over the age of 75 years require Community Nurse care at home, rising to one in two people over 85 years. The need for skilled home nursing is rising as the population ages, more people live with long-term conditions, and people are discharged earlier from hospital. (Queen's Nursing Institute 2012 Right Nurse Right Skills Campaign.¹³

Community nursing teams play a vital role in the delivery of diabetes care and social support in what is generally an older and more complex cohort of persons with diabetes. It is important that there is close collaboration of the community nursing teams with the DiaST and Tier 3 Team focussing on personalised care planning; as well as ensuring clinical and educational supervision of the community nursing teams.

2.2.6 Care Coordinators

Care co-ordinators will manage a case load of people living with diabetes who have been proactively identified as needing extra help. They will ensure that appropriate support is made available to them and their carers, and they will ensure that any changing needs are addressed.

Local priorities, health inequalities or population health management risk stratification are all considerations in this role. Personalised care support plans are produced to bring together all care and support needs (e.g. help making appointments, help with benefits, shared decision-making tools). Furthermore, they could be key in promoting access to structured education courses. They could also promote access to other peer-support through voluntary sector offerings as part of a care plan.

2.2.7 Social Prescribers

Social prescriber roles play a key part in addressing peoples' unmet needs, by creating links for people to support groups and voluntary sectors, and providing support outside traditional care models, such as access to physical activities, weight management and nutrition, and activities that might provide improvements in mental wellbeing.¹⁴ This may help the DiAST reach people previously lost to the system or those who are vulnerable and frail. Social prescribing should be accessible both via the DiAST and independently by the person living with diabetes or their carers.¹⁵

Bright Outcomes: Massarani & Partners Practice, Care Merseyside and ELEMENTAL® Collaboration¹⁶

<i>What was done?</i>	<i>What were the outcomes?</i>
Massarani & Partners, Care Merseyside and ELEMENTAL (Digital platform) partnered up to provide social prescribing for people in their practice.	<ul style="list-style-type: none">- 427 referrals were made (210 referrals fell under social support)- 52% uptake in one or more activities- 925 visits to social prescribed activities- 738 visits were recurring- Reported drop in the GAD-7 (Generalised Anxiety Disorder Assessment) from 23 to 13 (43% reduction in feelings of generalised anxiety)

2.2.8 Health and Wellbeing Coaches

Health and wellbeing coaches can be beneficial for people living with diabetes who have lower levels of physical activity and those who have low motivational levels for physical activity/lifestyle improvement. They are able to develop patient knowledge, skills and confidence to self-manage more effectively.

Health coach interventions include sessions to implement personalised care plans, and can include families and care givers, which could work synergistically with the social prescribing. These services may help reach hard to reach/ disengaged populations, hence, people with diabetes should be screened and referred in if likely to benefit from health coaching.

3. Education and Training

3.1 Structured Education for People living with Type 2 Diabetes

3.1.1 Access to structured education for newly diagnosed Type 2 diabetes

Historically, attendance of face-to-face Type 2 diabetes structured education within the first year of diagnosis has been reportedly low (predominantly due to poor data capture) with considerable variation across the UK.¹⁷

PCNs and diabetes education services should collaborate to ensure diabetes structured education programmes can be easily accessed in line with NICE guidelines (at diagnosis and annually), embedding this within an agreed local diabetes education pathway.¹⁸

Face to face structured education soon after diagnosis with type 2 diabetes is efficacious and well established; with demonstrable improvements in glycaemic control, quality of life and weight, and reduced cardiovascular risk after attendance.¹⁹ Furthermore there has been reported reduction of depression, improvement of empowerment, skills and confidence in self-management of diabetes; with cost-effective benefits.²⁰⁻²⁴

To promote early attendance to diabetes education after diagnosis, this guideline introduces the concept of the 'two-week wait' for structured education after diagnosis of type 2. The 'two-week wait' is intended to highlight the importance of early engagement with diabetes education services.

In addition, we would recommend that attendance to structured education should be documented and coded rather than coding referral to type 2 diabetes education, which can be later audited. This would emphasise the importance of attending structured education as a first line intervention, particularly at diagnosis, and not simply as an optional additional management tool.

Bright Spark Box: Portsmouth City CCG & Solent NHS Trust

What was done?

A Long-term conditions hub is currently being piloted in Portsmouth city with two GP practice populations (25% of the Type 2 patient population in Portsmouth). This enabled new models of care to be developed and will be evaluated.

As part of the pilot, all newly diagnosed people with Type 2 are seen within two weeks of diagnosis in a group structured education setting. One week after group structured education, the person then attends a 1:1 with a specialist practice nurse for goal setting and a care plan is agreed. Three months after this a follow up with blood tests and blood pressure is planned and the person only attends face to face if the three treatment targets are not met. A full evaluation is planned and anecdotally the healthcare professionals involved in this pilot have seen an increase in patient engagement with goal setting.

In the wake of the COVID-19 pandemic, education services are providing live virtual education as an alternative to face to face, using video conference and webinar software. These may support delivery of earlier education, particularly in hard-to-reach groups.

To improve notification, coding and recording of attendance onto patient electronic records within GP practices, education providers are recommended to use standardised Read Codes to communicate to primary care the outcome of a referral. In addition, education providers now report attendance to the NDA via NHS Digital's Clinical Audit Platform (CAP) to help improve data capture.

To help achieve earlier attendance to structured education, more educators will need to be trained to increase capacity, facilitated by the use of non-clinical educators 'lay-educators' together with HCPs.²⁵⁻²⁷

Face to face structured education may not be suitable for some cohorts of people with diabetes (moderate-severe frailty, care and nursing home residents, restrictive eating disorders, severe mental health conditions, learning disabilities). In these circumstances, an education alternative

suitable for the individual should be agreed at diagnosis (see Appendix 2: Alternatives for people unable to attend structured or virtual education programmes).

3.1.2 Access to an annual refresher of structured education

There is a large cohort of established people with Type 2 diabetes who are not meeting treatment targets.²⁸ Evidence suggests structured education needs to be repeated in order to sustain the improvements seen after attendance.²⁹ Therefore, referral to a structured education programme should be considered at annual review, and people who have missed education in the past should be identified by PCNs and diabetes education services.

The capacity of local diabetes education services may not match the demand for annual structured education and funding of specialist dietitians through the Additional Roles Reimbursement Scheme would help to bridge the gap.³⁰

Local attendance data should be interrogated to see if there are certain demographic characteristics which have lower attendance as well as whether certain modalities of delivery suit certain population groups.

Bright Outcomes Box: Dorset Healthcare University NHS FT, Poole Hospital NHS FT, The Royal Bournemouth and Christchurch Hospitals NHS FT and Dorset County Hospital NHS FT – Refocus: a patient-led curriculum for refresher education in people with Type 2 diabetes³¹

<i>What was done?</i>	<i>What were the outcomes?</i>
<p>The need for refresher training was demonstrated at three years when 25% of population exceeded HbA1c target (>58mmol/mol).</p> <p>Following an initial pilot phase, twenty-six stand-alone sessions were delivered across Dorset by a Diabetes Specialist Dietitian and Diabetes Specialist Nurse as part of the national diabetes transformation programme 2018/2019. Inclusion criteria were: established Type 2 diabetes (one year or more post-diagnosis), HbA1c >58mmol/mol, BMI >23kg/m² and on one or more diabetes medication. Using SystemOne, biomedical data were collected at baseline with follow up statistical analysis at three months. Survey data were collected from participants at the education sessions and repeated at three months using Problem Areas in Diabetes (PAID) to measure change in diabetes distress and the</p>	<p>In the short term, refresher education resulted in an average HbA1c reduction of 8.0mmol/mol compared to an increase in HbA1c of 9mmol/mol in the control group, and mean weight loss was 2.68kg.</p> <p>44% scored an increase in patient activation level. Mean reduction in diabetes distress was 7.7% in the sessions using a co-produced agenda. Severe diabetes distress resolved in all recorded cases, with a mean score reduction of 19.6%.</p> <p>Conclusion: In a structured type 2 refresher education session where attendees co-design the agenda and receive peer support, there was a significant reduction in HbA1c, a reduction in diabetes distress and an increase in patient activation level at three months.</p>

Patient Activation Measure (PAM) to measure change in knowledge, skills and confidence in diabetes self-management.	
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3.1.3 Quality assurance and governance

Structured education should meet a set of nationally agreed criteria set out in NICE guidelines.²⁵ This includes an evidence-based curriculum, the use of trained and competent educators, quality assurance of teaching standards, and regular audit and review. QISMET (the Quality Institute for Self-Management Education and Training) has developed the Diabetes Self-Management Education Quality Standard offering providers a means of demonstrating that they have met NICE criteria.

There is currently little in the way of monitoring and quality assurance of clinical content of digital apps and online tools. PCNs are encouraged to individualise recommendations according to user requirements and preference, and to liaise with diabetes education services to ensure educational content is evidence-based and aligns with national guidelines regarding management of diabetes and diet, particularly when referring to an online self-management education programme in place of structured education.¹⁹

3.1.4 Culturally appropriate health education

Culturally appropriate health education is a more effective style of health education for black and minority ethnic (BAME) groups than structured education that has not been tailored to requirements and a number have been developed (see Appendix 3 Educational resources available for BAME populations).

This has demonstrable short-term effects of improved glycaemic control and knowledge of diabetes and healthy lifestyles.^{32,33} It can be helpful to include other family and community members to attend structured education as support.³⁴

3.1.5 Older people

Diabetes UK recommend that older people should have access to diabetes self-management education, as it has been shown to be effective in this population, resulting in small reductions in HbA1c, cholesterol and blood pressure.^{19,35,36} Structured education often incorporates nutrition advice for weight reduction, however, nutritional status may be poorer in an older person with diabetes than without diabetes due to a range of physical, social and psychological factors linked to aging.³⁷ Furthermore, nutrient requirements, including protein and some micronutrients, may increase therefore nutrition advice at structured education should pay attention to each patient's unique nutritional needs.³⁸ Nutrition assessment and care planning should be available to all those who may be malnourished, and should be overseen by a dietitian.

3.1.6 Health literacy

Health literacy is defined as “The personal characteristics and social resources needed for individuals and communities to access, understand, appraise and use information and services to make decisions about health.”³⁹ It is associated with poor health behaviours and outcomes.

Good health literacy is widely acknowledged as key in facilitating the empowerment of a person to seek out information, take responsibility and control of their health. However, it is estimated that between 43% and 61% of working age adults routinely do not understand health information.⁴⁰

The NHS Long Term Plan proactively advocates supported self-management as one of six key components of the comprehensive model of Personalised Care taking into consideration the health literacy needs of the individual and the community. Caveats to this include limited internet access, lack of technology and language barriers.⁴¹ PCNs must strive to ensure that all HCPs tailor their approaches to working with a person or community, “based on their individual assets, needs and preferences, as well as taking account of any inequalities and accessibility barriers, and so work based on ‘what matters’ to the person/community”.⁴²

Approaches to ensuring such personalised care and support may include the use of patient activation measures, health coaching, peer support and self-management education, which is clear, concise, culturally sensitive and accessible.⁴³

Bright Spark Box: Haverstock Healthcare, London Borough of Camden

What was done?

Haverstock Healthcare is a federation of all 35 GP practices in the London Borough of Camden. Recently it sought to improve outcomes in diabetes for Camden patients through both supporting the achievement of quality improvement targets in practices and PCNs, and through direct provision and support to the Camden Diabetes IPU. It is recognised that, despite overall very good diabetes outcomes in Camden, there remain hard to reach groups who struggle to access services, and whose outcomes as a result are often poor.

Working with academic partner-UCL Institute of Global Health, Haverstock Healthcare sought to identify these groups, understand from them what they might find helpful and what the evidence and learning was from successful initiatives/programmes nationally and internationally. The model developed and trialled (based on what patients reported and strongly inputted by community leaders) involved inviting people into a welcoming and appropriate (age, cultural, language) forum in practices (including ‘share a meal’ events), within which education on disease management/ understanding, lifestyle advice and health checks could be delivered within the context of peer and community support. While initial feedback and data appear positive, COVID-19 halted the wider up-scaling of the programme and full evaluation remains to be undertaken.

3.2 Diet and lifestyle interventions

3.2.1 Weight management diets

To improve glycaemic control and CVD risk factors in overweight or obese adults with Type 2 diabetes, weight loss of at least 5% is recommended through a reduction in calorie (energy) intake and increase in energy expenditure.^{2,19} Weight management strategies should be individualised according to what is realistic and affordable for the person to follow. A diet is more likely to succeed if the person finds it to be sustainable.⁴⁴

At present, no single dietary intervention is recommended as the most effective to promote successful weight loss. Several options have been shown to be effective to produce weight loss in people with Type 2 diabetes (Appendix 4. Different dietary interventions proven for weight loss in Type 2 diabetes).

3.3 Education and Training of Staff

3.3.1 Education for staff

The fully integrated community-based health care will be supported through the ongoing training and development of multidisciplinary teams in primary and community hubs.² This guideline supports a 'train the trainer' approach where at each level of care, practitioners participate in 'on the job' training, in addition to accredited training, provided by the level above. All levels will have dedicated time to deliver this training. This continuous education will ensure that all healthcare professionals are upskilled to provide up-to-date, high quality evidence-based diabetes care across the board.

Education will need to be funded and all HCPs will require protected learning time to facilitate this training. Funding should therefore take into account options to provide backfill for HCPs protected learning time and cover for clinics. Education and training should include clinical skills, evidence-based medicine, development of knowledge of diabetes management strategies and exploring behaviour change models. HCPs caring for people with diabetes should have demonstrable competence for the level at which they are practising.

It is essential to ensure that each practice within each PCN has at least one practice nurse, GP or pharmacist upskilled in diabetes care by a compulsory core training programme. In single-handed practices, it may be essential to 'buddy up' with another practice should it be difficult to provide dedicated staff for upskilling.

Competence frameworks are available for Nurses, Pharmacists and Dietitians (TREND, UKCPA frameworks, British Dietetics Association [BDA] Diabetes Specialist Competencies respectively) and these can be used to locally agree competence within these professions. For general practitioners and other professionals, local agreements on levels of education/competence should be sought for each level of care.

3.2.2 Training for Supportive Staff

Collaborative training for supporting staff must be considered. It is recommended that supportive staff have at least biannual opportunities to update knowledge on basic diabetes care. These could include online or other educational opportunities fitting the specification for the PCN needs.

4. Pathway to Excellence in Care for all People Living with Diabetes

The aim of the care pathways is to ensure that people receive the right care, but importantly that care is individualised.

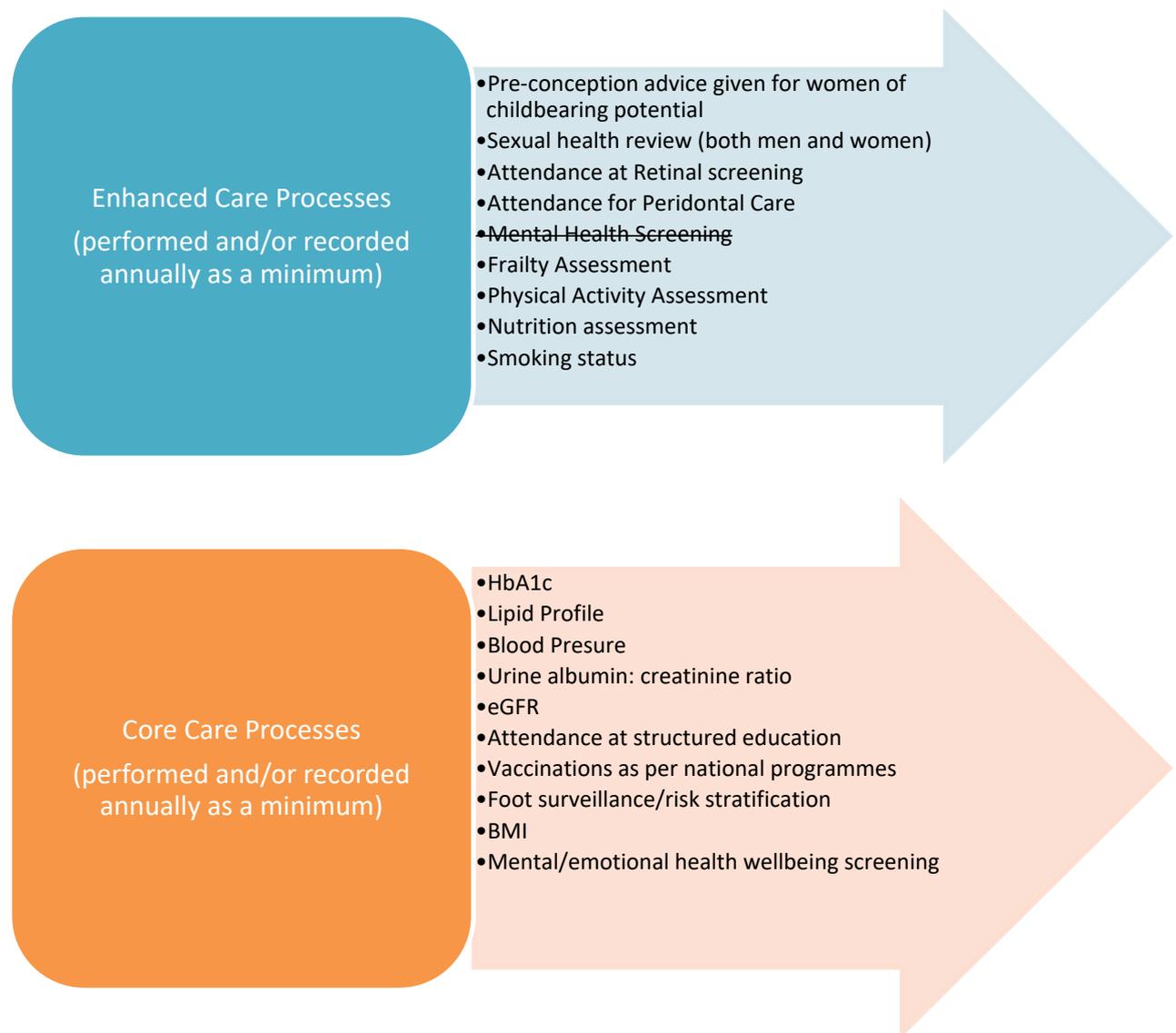
4.1 Care processes

The care processes proposed (shown below in Figure 5) aim to work alongside GP Quality and Outcomes Framework (QOF) to provide comprehensive care for those living with diabetes.

It is recommended that these care processes are undertaken, and appropriate action is taken based on findings; for example, offering appropriate education, commencing/escalating suitable medications, signposting to other support services/MDT members. Thereby aiming to strike a balance between prescriptive practice and appropriate/personalised care.

This guideline moves away from the three treatment targets; instead **focussing on core care processes which further include good renal health** (important for both medicines optimisation as well as prevention of renal disease) and documenting and coding for **attendance** at structured education (rather than referral to structured education).

Figure 5: Care Processes



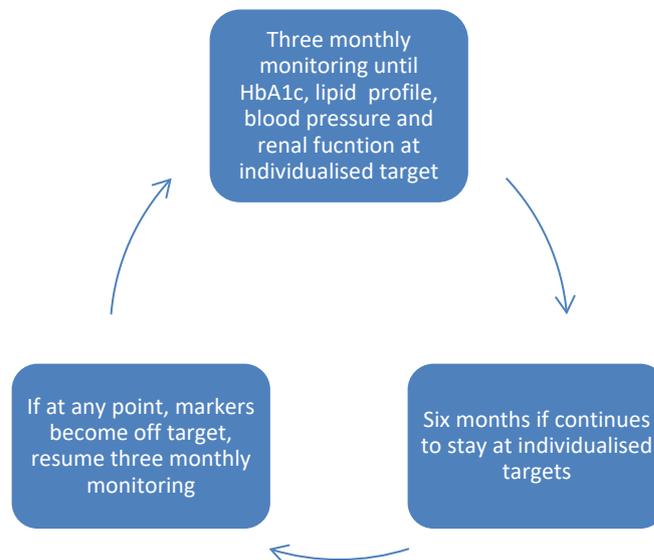
Bright Spark Box: Periodontal care

What is suggested?

A bidirectional relationship exists between periodontitis and diabetes. Risk for periodontitis is increased two to three-fold in people with diabetes compared to those without. Furthermore, the level of glycaemic control is a key determinant to level of risk. In people with type 2 diabetes, significant improvements in HbA1c are reported with treatment of periodontitis in the short term (reductions of 3-4mmol/mol).⁴⁵ Given that treatment of periodontitis results in clinically relevant reductions in HbA1c, the dental team has an important role in the management of people with diabetes.

Primary care networks and supporting structures should work to improve inter-professional relationships with dental teams and a two-way transfer of information is recommended. Inclusion in the care processes should work to encourage this to happen.

4.1.1 Blood testing schedule



This guideline supports the use of validated point of care testing, community pharmacy testing (where available) and home monitoring (where possible) to achieve this.

All targets should be individualised to take into account frailty, co-morbidities, mental health issues, disengagement and exemptions can be made for these circumstances although practices should identify in their searches if there are any patterns to exemption and see if they can better serve these populations.

4.2. Care Delivery Model

Delivery of Care Processes

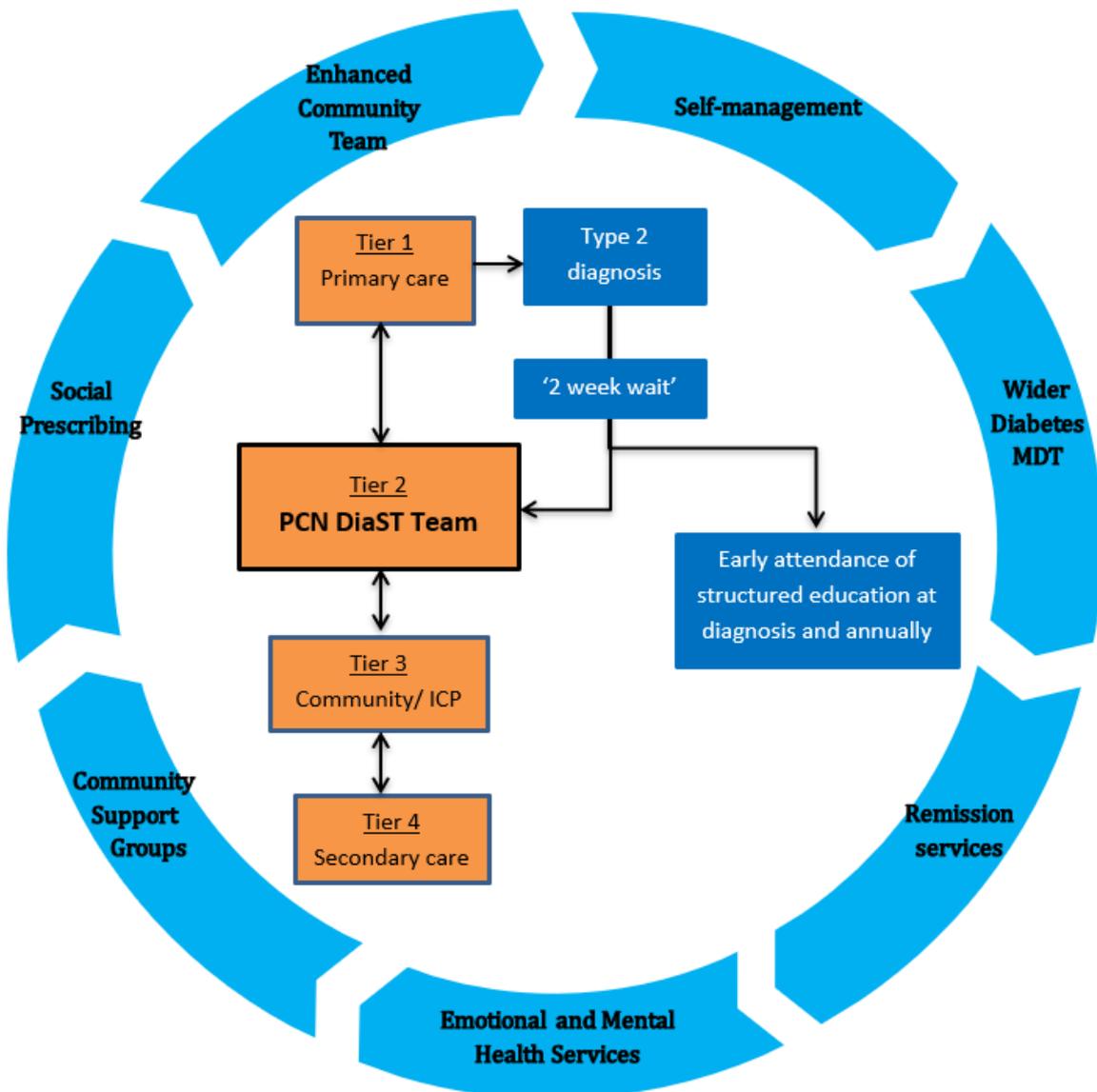
Initially people will be seen in a one stop group clinic in the PCN, where they will receive structured education and receive care process assessments and formulate individualised e-care plans relating to their personalised target and expectations for their diabetes care.

At this initial point of contact people should be introduced to the potential different types of consultations they may encounter in the future so that following the first consultation, the person can then decide if they would like attend group consultations, switch to virtual consultations or if they would like individual face to face consultations depending on PCN provision.

A chance to switch consultation methods should be available as a person moves through their healthcare journey.

There should be procedures within the PCN to ensure that certain circumstances would trigger a face-to-face consultation if not already receiving one e.g. an active foot problem, need to enhance therapy to an injectable.

Figure 6 Patient journey



5. Special Populations

5.1 Frailty in the General Population

Frailty is a state of vulnerability, and older patients with diabetes are at greater risk of polypharmacy, depression, cognitive impairment, increased risk of infection and injurious fall. Both ageing and diabetes are recognised as important risk factors for the development of functional decline and disability, which are often compounded with impaired quality of life.

The UK has a growing frail population. The elderly population is growing rapidly, with projections showing that by 2066 5.1 million people in the UK population will be over 85 years; equating to 7% of the UK population.⁴⁶ Given that the likelihood of developing diabetes grows with increasing age, diabetes will also rise accordingly.¹⁶ Older people with diabetes often have co-morbidities and many are dependent on care providers.⁴⁷

In planning care, physical and cognitive ability should be assessed before individualising glycaemic targets and therapeutic approaches for diabetes management. Consideration of age, frailty, co-morbidities, care support and the wishes of the person with diabetes whilst maintaining a focus on the avoidance of hypoglycaemia and significant hyperglycaemia is essential.

Recommendations⁴⁸

- ✓ Frailty assessment at least annually
- ✓ Individualised care plans which incorporate individualised targets of care
- ✓ Structured medication reviews to include de-escalation of medications where indicated
- ✓ MDT working to include those in care homes, and those who are housebound

Good care for the frail population has been demonstrated in the Vanguard Integrated Care systems. Benefit was shown for proactively identifying, assessing and supporting people to live independently for longer and demonstrated a decreased rate of A&E admissions.²

Bright Outcomes: Factors influencing safe glucose-lowering in older adults with type 2 diabetes: A **PeRsOn**-centred **ApproCh** To **IndiVidualisEd** (PROACTIVE) Glycaemic Goals for older people⁴⁸

What was done?

This position statement was developed from an extensive literature review of the subject area. A consensus opinion from both primary care clinicians and diabetes specialists was sought to highlight challenges and support care in people living with diabetes who are frail and older in age.

What were the outcomes?

- Holistic approach
- Emphasis on individual and/or carer preferences
- Balances benefits vs. risks of different treatment regimens
- Promotes consistent high-quality care for older people with diabetes.

5.1.1 Frailty in Care Homes

It is estimated that up to 27% of residents in care homes have Diabetes.⁴⁷ Care home residents will be registered with practices and health centres within the new PCN structure and there will be a lead GP appointed for care homes within each PCN. It is important that DiAST teams work with the lead GP and the greater care home MDT (e.g. care home pharmacists, community nursing teams) to co-ordinate excellence in diabetes care for this population. This will incorporate sharing information, shared care planning, use of shared care records and a clear clinical governance structure to be established (see Appendix 5. Standards for Good Diabetes Management in Care Homes).⁴⁷

‘Home rounds’ performed by the MDT will help identify people who need to be referred to different levels of care in the diabetes model. Geriatrician input may be needed for more complex care requirements.⁴⁷

5.2 Young adults

Young adult type 2 diabetes is an example of a group of individuals who would benefit from the approach outlined in Tier 2 enhanced PCN service.⁴⁹ Individuals diagnosed with type 2 diabetes at early age have poor outcomes and increased risk of mortality compared to older onset type 2 diabetes cases.⁴⁹ Furthermore, adults with onset of type 2 diabetes at a younger age are less likely to achieve glycaemic control at 1 year following diagnosis.⁵⁰

At present clinical pathways specifically targeting this high-risk group are unclear. As number of cases are rising rapidly, it is likely that a model with integration and early specialist input as set out with the enhanced PCN service is essential for these young adults. In addition, all young women of childbearing potential should be seen in the Tier 2 service to ensure that they are provided optimal diabetes management, are given preconception advice at every appointment, and then rapidly referred into preconception clinics (where available) or secondary care if required when they show a desire to conceive.

5.3 Type 1 diabetes

The vast majority of people with Type 1 diabetes should continue to be seen in Tier 4 secondary care as per the Portsmouth Super Six Model. This allows people with type 1 diabetes to receive appropriately tailored structured education, have specialist input from those who are trained to look after type 1 diabetes and allow for access to diabetes technologies, such as insulin pumps and CGM.

There may be locations where people with type 1 diabetes can be seen in the community tier 3 services (secondary care associated service) where there is appropriate specialist DSN and dietitian support, however this should not be at the expense of comprising availability to type 1 specialist interventions.

It is recognised that for some with type 1 diabetes care in the community may be preferential, such as those in care homes or with learning difficulties. In this circumstance, these people should be

under the care of the Tier 3 diabetes service which is led by the secondary care Consultant Diabetologist or Senior Diabetes Specialist Nurse.

It is also appreciated that there will be a proportion of people with type 1 diabetes who do not attend secondary care services for reasons including disengagement.⁵¹ It is of course vital to ensure that these individuals are provided with the reasons for receiving care in the specialist secondary care environment. However, should this still not be preferable to the individual, then the Tier 2 Enhanced PCN service could provide an alternative location for care. However, it is imperative that the Tier 2 DiaST Nurses (Practice Nurse with specialist interest in diabetes/ community diabetes specialist nurse) and the dietitians remain upskilled to deliver a foundation level of type 1 care; in order to recognise and manage type 1 specific risks and to know when to refer to a higher Tier of diabetes care. TREND and the BDA have published respective competencies for nurses and dietitians (see Section 3.3.1). These can be acquired by rotating into Tier 3 or Tier 4 to train and deliver highly specialist clinics, or by achieving accreditation with a QISMET certified type 1 education provider such as DAFNE or BERTIE. These skills must be practiced and maintained by the delivery of a minimum of one course per year (BERTIE) or two courses per year (DAFNE).

Bright Spark Box: Poole Hospital NHS Foundation Trust; Dorset Healthcare University NHS Foundation Trust

What was done?

Community-based Diabetes Specialist Dietitian (DSD) joined a Consultant-led secondary care MDT clinic that was relocated into a rural community hospital outpatient department in an area with limited public transport. The dietitian was upskilled to support people with type 1 by becoming accredited to teach BERTIE (Type 1 diabetes education programme) and by swapping a regular clinic with a DSD in the acute Trust, which included some training and mentorship. People with type 1 and complex type 2 diabetes who did not attend the hospital were able to access a dietitian, including people experiencing transport problems and teachers at rural boarding schools. Benefits to patients included one to one Level 3 carbohydrate counting support with insulin dose adjustment and dietetic care for people experiencing severe hypoglycaemia events and hypoglycaemia unawareness.

5.4 People wanting to pursue remission

Remission describes the process by which metabolic abnormalities in type 2 are reversed through bariatric surgery or lifestyle change.⁵²⁻⁵⁶ Involvement in remission programmes will lead to remission for some; in others it may lead to improved glycaemic control, weight loss and/or reduction in medications.

Diabetes UK are working with international experts to define the criteria for remission. In research trials remission has been defined as HbA1c < 48mmol/mol for more than six months on no medication and following significant weight loss.⁵² Some have suggested a more stringent definition of HbA1c of less than 42 mmol/mol.

It would be considered that an ideal population for remission programmes would be people with a BMI > 27kg/m², aged < 65 years old, people who have lived with Type 2 for less than 6 years and are not on insulin therapy.⁵² The Counterpoint study and subsequent DiRECT trial⁵³ used a very low-calorie meal replacement weight loss programme delivered with ongoing support through primary care to promote reversal of type 2 diabetes. The DiRECT trial showed that rapid weight loss can be

very effective as a short-term intervention for remission and in partnership with Diabetes UK continues to explore how long-lasting these effects will be. In light of this success, NHS England has begun to pilot a type 2 remission programme for around 5000 people, involving low-calorie diets.

In the DiRECT trial the number of people in remission reduced from 46% at 1 year to 36% at 2 years post intervention.⁵³ Therefore, people who achieve remission are recommended to continue annual diabetes checks as remission may reverse. People in remission may still experience the macrovascular and microvascular complications of diabetes and therefore the read code 'diabetes in remission' (C10P) should be used to ensure the person remains on the diabetes register to receive automatic invitation for annual retinal screening, continued monitoring for complications and development of hyperglycaemia, and to be included in NDA.⁵⁷

It is advised that PCNs look to support people wanting to pursue remission in type 2 diabetes and that patient activation levels are assessed as part of the screening process prior to embarking on any remission programmes. Remission should ideally be presented as a treatment option where appropriate, in the initial consultations after diagnosis for persons looking to lose substantial weight, and appropriate referral leading to assessment for suitability would then ensue. The concept of remission should also be built into structured education programmes with the support of specialist dietitians with subsequent support to pursue this as a therapy option. However, at present remission programmes are not universally available on the NHS, therefore in some areas there will be reliance on commercial meal replacement diet programmes.

5.5 People living with Obesity

2020/2021 saw a new contractual obligation for GPs to offer referral for people with obesity to weight management services where this is clinically appropriate and the service exists.³⁰ Additional weight management services may be commissioned through local authorities however NHS England are planning to push ahead with commissioning weight management services for those living with obesity and type 2 diabetes and/or hypertension in areas with greatest unmet need.³⁰ It would be recommended that PCNs map services and ensure clear pathways for referral to these services are available.

5.6 People needing to access Mental Health Services

5.6.1 Diabetes and Emotional Wellbeing

Self-management is crucial to people with diabetes; however, it can be complex and demanding. The stress and guilt that can arise from self-managing diabetes is an emotional state referred to as 'diabetes distress', which is estimated to affect as many as 1 in 4 people with type 1 diabetes and 1 in 5 people with type 2 diabetes.^{58,59} Greater diabetes distress is associated with sub-optimal self-management, elevated HbA1c, more frequent severe hypoglycaemia and impaired quality of life.⁶⁰ Early detection and intervention of diabetes distress may reduce the risk of 'diabetes burnout'; a

state of physical or emotional exhaustion resulting from prolonged diabetes distress and potentially resulting in disengagement.⁶¹

Furthermore, people with diabetes are two to three times more likely to be affected by symptoms of depression,⁶² which are associated with poor health outcomes including suboptimal self-management, earlier onset of complications, impaired quality of life and premature mortality.⁶³ It is important to differentiate depression from diabetes distress. Sixty-five percent of people will have no diabetes distress or depressive symptoms; however, those that have one immediately gain a risk factor for the other.^{64,65} In practice this means both need to be assessed to inform any intervention needed.⁶⁰

Together, NHS England and Diabetes UK have convened an expert working group to develop guidelines for commissioning and the provision of emotional and wellbeing support for people with diabetes. Diabetes UK have produced 'Diabetes and Emotional Health, a Practical guide', an in-depth guide that delivers information and practical advice to healthcare professionals providing diabetes care.⁶⁰

5.6.2 Diabetes and Mental Health

People who have diabetes and severe mental illness should have the same opportunities for good care and services should offer both care for mental wellbeing as well as physical wellbeing. Links should be developed between the PCN DiaST and Mental Health teams, with clear pathways for referrals in either direction.

5.6.3 Delivery of an Integrated Approach to Mental and Physical Health

This guideline makes recommendations to PCNs to help support an integrated mental and physical health approach to diabetes care. Mental health and wellbeing screening tools are crucial for identifying people with emotional and mental health needs. The frequency and effectiveness of mental health screening at primary care level currently varies across the UK.

Mental health screening and wellbeing screening tools should be used regularly to assess mental and emotional wellbeing, and therefore have been included as an Enhanced Care Process of this guideline at annual diabetes appointments, including at diagnosis.

The following screening tools (limited to two questions) have good psychometric properties (good sensitivity and specificity as a tool) and have shown a high relationship to the disorders being measured.

- Screening for diabetes distress: Diabetes Distress Screening Scale (DDS-2)
- Screening for depression: Patient Health Questionnaire (PHQ-2)
- Screening for generalised anxiety: Generalised Anxiety Disorder Assessment (GAD-7)

On screening, if positive, people should be referred on appropriately for further evaluation; including Diabetes Distress Screening Scale (DDS-17) or Problem Areas in Diabetes questionnaire (PAID) or Patient Health Questionnaire (PHQ-9), and subsequently management of their mental health (see Appendix 6. Pathways for Mental Health Assessment).

These scoring systems are recognised by mental health services and hence help to inform referrals.

5.6.4 Mental Health Practitioners

It is expected that PCNs will use a wide range of approaches to meet the mental and emotional health needs of their localities, involving a wide range of mental health practitioners to deliver this.⁶⁶

The IAPT (Improving Access to Psychological Therapies) programme is world leading and the 'Five Year Forward View for Mental Health' clearly sets out an expansion of this service.^{2,67} Increasing access to IAPT services for adults and older adults with common mental health problems with a focus on those with long-term conditions are evolving and it is expected that primary care networks will work towards this type of integrated care for all people living with diabetes.⁶⁸

PCNs should work collaboratively with mental health practitioners to ensure that appropriate mental and emotional health screening is done for people with diabetes from the first point of contact and regularly thereafter (as discussed in section 5.6.3), with clear referral processes.

5.7 Learning disabilities

PCNs should work to improve identification of people with learning disabilities who have diabetes. People with learning disabilities should, as a minimum have an annual review of their medications and health.

Medicines should be optimised in line with STOMP (Stopping over medication of people with a learning disability, autism or both).⁶⁹ Adjustments in or even stopping pre-existing psychotropic medications in line with this initiative may have a significant positive impact on weight and blood glucose levels; hence people with diabetes should be monitored appropriately in these circumstances as required.

Engagement with social prescribing to maintain health and wellbeing should be something that is considered for all people with learning disabilities in the primary care structure. Please also refer to the recent Diabetes UK document.⁷⁰

5.8 Socio-economically deprived populations

People in lower socio-economic groups are more likely to have long-term health conditions, and these conditions tend to be more severe than those experienced by people in higher socio-economic groups.⁷¹ Deprivation also increases the likelihood of having more than one long-term condition at the same time, and on average people in the most deprived fifth of the population develop multiple long-term conditions 10 years earlier than those in the least deprived fifth.⁷¹

Long-term conditions are one of the major causes of poor quality of life in England. More than 50% of people with a long-term condition see their health as a barrier to the type or amount of work that they can do, rising to more than 80% when someone has three or more conditions.⁴⁰

Furthermore, evidence suggests that some people's circumstances make it harder for them to move away from unhealthy behaviours, particularly if they are worse off in terms of a range of wider socio-economic factors such as debt, housing or poverty.⁷¹

In England, in 2017, men in the most deprived areas were 4.5 times more likely to die from an avoidable cause than men in the least deprived areas. Women in the most deprived areas were 3.9 times more likely to die from an avoidable cause than those in the least deprived areas.⁷¹

Recognising the potential outcomes of this vulnerable group will help design services to meet the needs of this group.

5.9 Cultural considerations

Evidence shows that when information, education or advice is culturally focused, the outcomes for people living with diabetes are improved. PCNs must look to ensure appropriate engagement in facilitating optimal care for those with cultural considerations.^{33,72}

People from ethnic minority backgrounds are two to four times more likely to develop diabetes and are disproportionately at risk of developing T2D at a younger age and, consequently, are at greater risk of experiencing diabetes related complications.^{3,73}

Various research activities and successful engagement projects direct us to consider the following in trying to ensure successful engagement with all ethnic communities.

- ✓ Reach out to where communities are for example, places of worship and community centres
- ✓ Ensure that information given is relevant and culturally sensitive
- ✓ Involve and work in collaboration with community leaders, community influencers and peer support.

Bright Spark Box: Leicester: Cities Changing Diabetes

Leicester has a diabetes prevalence rate of nearly 9% with half the population being at an increased risk of developing Type 2 diabetes due to their ethnicity.

What was done?

Leicester joined the Cities Changing Diabetes Global programme in 2017. This programme is about bringing together stakeholders locally to drive down the number of people with type 2 diabetes in their city.

Some examples include a partnership between the Leicester Diabetes Centre and Leicester City Football Club which has led to the creation of *Healthy Goals*; a 12-week healthy lifestyle

programme to prevent type 2 diabetes. Collaboratively, Leicestershire County Cricket Club and the Leicester Diabetes Centre now deliver *Walking Cricket* sessions to South Asian communities in Leicester. Cities Changing Diabetes has demonstrated how local stakeholders can benefit from research expertise and how academics can benefit from partnering up with community leaders to deliver evidenced based, culturally sound diabetes programmes.

Bright Spark Box: Bolton. Changing Lifestyle Programme.

What was done?

Using knowledge exchange and a participatory approach to design and deliver a culturally appropriate course that raises awareness and strives to enhance motivation and resilience to understand and fight diabetes. The programme acted as a springboard to structured education and support both for those at risk of and those living with diabetes.

A baseline assessment to generate a better understanding of local communities through a Community Champions Programme, which included faith leaders and other local peer supporters was established and activities devised that best suited these communities to achieve the biggest impact.

Course content

- Understand risks of developing Type 2
- Diet and portion control
- Weight management
- Improving diabetes self-care
- Complications of diabetes
- Annual review and screening services
- Reversal of Type 2 diabetes
- Online/offline support

Outcomes

- Change in attitudes and perceptions
- Encouraging signs of improvement in glycaemic control, weight, and BP
- Change in cooking behaviour
- Increased knowledge of physical activity and its effects
- Sharing of personal experiences and increased motivation
- Increase in trust and confidence in HCP's and themselves

6. Digital Technology and Solutions

6.1 e-Care Plans

The use of care plans in diabetes is already commonplace and acts as an agreement between the person living with diabetes and their diabetes provider to help with self-management of diabetes and setting achievable individualised goals. The development of e-Care plans is an extension of this to bring diabetes care plans into the digital age. It will, however, allow for information about

medications/ insulin doses, retinal screening results, individualised treatment targets (such as HbA1c) to be carried on a digital card owned by the person with diabetes and can be provided/ updated any time the individual accesses diabetes care. This potentially reduce drug errors when the person attends an acute hospital setting, as well as give the healthcare provider important information regarding their diabetes care.

6.2 Digital Transfer of Care

This includes transfer of information on the e-CARE plans back onto the GP systems, development of pharmacy connection schemes for patients who don't need primary medical service, as well as refer on to community pharmacies who support urgent care and promote patient self-care and self-management. Referrals to community pharmacy for NMS, MUR can occur via online portals e.g. Pharmoutcomes.

6.3 Dashboards and Data retrieval e.g. ECLIPSE

Dashboards and Data retrieval programmes e.g. ECLIPSE would be supported for use.

Bright Outcomes: Swinton CCG	
<i>What was done?</i>	<i>What were the outcomes?</i>
<p>ECLIPSE was introduced in 2015 to enable practices to be alerted to people potentially suffering harm from their medications, the RADAR alert system. Practices were encouraged to regularly extract data and to action RED alerts.</p> <p>This was then expanded to support the management of diabetes.</p> <ul style="list-style-type: none"> - Benchmarking data is shared with each practice monthly (eight care processes and three treatment targets) - Specific cohorts of people with diabetes can be identified e.g. elderly with low HbA1c, GLP-1 and DDP4 combinations, pioglitazone and heart failure etc. - Costs savings can be identified in a systematic way. 	<ul style="list-style-type: none"> - Three treatment target achievements (particularly blood pressure and cholesterol) have steadily increased in the majority of practices over a two-year period since the diabetes project started with >70% of practices achieving results that are better than national averages. - More awareness of three treatment targets - ECLIPSE data was used in conjunction with specific audits and prescription ordering direct services to tackle waste and made considerable cost savings - Challenges were ensuring that data is extracted regularly, getting people trained to use the system and slightly different data to NDA (patients excluded from summary care records are not included)

6.4 Virtual Clinic Platforms

There is still a disconnect of the IT systems between primary and secondary care; as well as linking systems to each other, which would reduce workload and enable for safe and effective transfer of care. Sharing information between stakeholders, although outside of the scope of this document should be perused. A number of secondary care teams use primary care programmes e.g. SystmOne, to directly record and access information on peoples' care and to task responsible clinicians to follow up on outstanding care delivery.

Primary care has been using EMIS web and AccuRx for both video consulting and text messaging. Facilitation of being able to record consultations in real-time would enable for more streamlined patient review. A number of IT platforms enable sharing of desktop view e.g. Refero facilitating presentation of blood tests results, education material, risk scores.

Secondary care is trialling "Attend Anywhere" as their preferred platform for virtual consultations. This reduces the need for travel to clinics and is likely to free up clinic rooms and streamline workflow for practitioners.

Use of applications on smart phones is additionally becoming increasingly popular. E-learning platforms are being trialled with great success (see Appendix 2). These platforms enable sharing of information with the person with diabetes and gives them access to information that can be tailored to their need.

PCNs should collaborate with companies to enable better availability of technology and work collaboratively with the Academic Health Science Networks in their local area to look at digital delivery platforms and apps.

Whichever systems/platforms are chosen, they should be available and accessible by the user, provide a safe and confidential environment and allow better and proactive management of diabetes care following the principles of "right care for the right person in the right place- using appropriate technology".

Furthermore, people with diabetes can be encouraged to use reputed social media platforms, such as the @_diabetes101 twitter account, which successfully delivered emotional and educational support to people living with diabetes during the COVID-19 crisis. This was a relatively new medium however, and with just under 5000 followers, it had a wide reach, receiving positive feedback from the diabetes community.

7. Safety and Governance

7.1 Accountability/ Governance

Each PCN will have a clinical director and an executive team who represent all the practices within the primary care network.³⁰

Robust and appropriate governance structures are required with clear lines of accountability for all parts of the diabetes care pathways in the network from the outset.³⁰ Dashboards will be used to track progress in real time; every quarter each level of care will receive action points/ targets for the next quarter. The DiAST will be accountable to feed back to the PCN on attainment levels of core and enhanced services quarterly, as well as support education and mentorship for the following quarter targets.

Outlier practices will be identified by the DiAST. For those attaining good results, identification of key practice points which have led to good performance will be discussed and shared. For those with lower performance levels than local averages, the DiAST teams will support and mentor these practices and try to overcome any barriers, as well as upskill to ensure non-judgemental support and better care for people with diabetes.

7.2 Safety

7.2.1 Safety Training

Essential safety training should be provided for any professionals who are managing care for people living with diabetes e.g. six steps to insulin safety.⁷⁴

7.2.2 Reporting adverse events and review

It is essential that all incident reporting happens following the local procedure. Diabetes incidents should be reviewed in clinical governance meetings attended by the DiAST. In the cases where people have died, a mortality review should be performed.

7.2.3 Medication Management and Safety

Medication reviews should be performed regularly and PCNs should be responsive to formulary decisions and medication alerts, cascading information in a timely fashion and relationships should be formed to work closely with medicines optimisation teams.

All serious adverse drug reactions should be reported via the yellow card process through the MHRA. All adverse drug reactions serious or not, should be reported for medications which are 'black triangle' medications in the BNF (British National Formulary), this forms important post marketing surveillance for the MHRA.

NHS business services authority are reviewing a set of prescribing indicators to reduce medication error and promote safe use of medications.⁷⁵ This will incorporate prescribing, dispensing, administration and monitoring. This programme of work is in response to the WHO (World Health Organisation) global challenge medication without harm. Diabetes teams should be aware of this and work towards reviewing the set indicators relevant to people in their care.

PCNs have been asked to use appropriate tools to identify and prioritise people who would benefit from a structured medication review by a pharmacist; including care homes, complex/problematic polypharmacy, on medications commonly associated with errors and those with severe frailty, isolated or housebound or people with recent admissions/falls. Primary care networks should work with the DiAST teams to enable priority reviews to occur for these groups of people living with diabetes.³⁰

7.3 Satisfaction of Service Users

7.3.1 Language Matters in Diabetes and Obesity

PCNs need to be aware of the impact the words we use have on people living with diabetes and/or obesity. Two documents have been produced: 'Language Matters in Diabetes' and 'Language Matters in Obesity'.^{76,77} These documents should be used as reference tools to ensure that consultations, literature and education build a trusting and valued relationship with those who are managing diabetes every day.

7.3.2 User feedback for promotion of services

PCNs should incorporate expert people who live with diabetes into care delivery where possible. This may be through delivery of structured education as a lay individual or in testimonials given for written literature to support people.

In some socio-economically deprived areas, it may be beneficial to have key community figures and/or diabetes champions involved in promotion of services.

7.3.3 Assessment of Patient Satisfaction of Diabetes Care

PCNs should seek to use validated tools to assess treatment satisfaction and evaluate service provision. Treatment satisfaction could be assessed after every consultation using a validated tool

e.g. DTSQc.⁷⁸ This may help localities assess suitability of services and evolve services quickly to match local needs e.g. localities may find that services for young adults need to be considered.

Service provision is guided by National Service Framework, National Institute for Health and Clinical Excellence and the implementation of the Quality and Outcomes Framework (QoF) however depending on specific localities populations' needs are sometimes left unmet. Service provision should be iterative, and design of services should involve people living with diabetes.

7.4 Audit

Both local and national audit of PCNs will be essential to ensure improvements in diabetes care; at the same time reducing variation in standards of diabetes care. It is expected that all practices participate, reflect and act based on data presented in the National Diabetes Audit (core audit), NPID (National Pregnancy in Diabetes Audit) and NDFA (National Footcare Audit).^{28,79,80} In addition to this, localities may look to enrich understanding of their own services & outcomes by adding in data from their dashboards (e.g. ECLIPSE).

PCNs will also be asked on an annual basis to collate qualitative data to allow for the measurement and reflection on other more holistic parameters. A qualitative assessment tool will be developed and piloted with PCNs, to ensure that collection of requested information is not a cumbersome process. Examples of what might be included in the qualitative assessment tool are:

- Number of hours a PCN has dedicated to diabetes care
- Skill mix for the provision of diabetes care
- Ease of access to MDT
- Number of CPD hours HCPs have been able to attend
- Areas of good practice/pathways for sharing
- Structured education choices (for example are digital options available, are alternative language options provided, is there a refresher education provision)
- Effective examples of outreach to different subgroups of people with diabetes (for example care homes, those with a history of non-attendance, young adults)

A National Enhancing Diabetes Services team (NEDS team) will review this data, areas of excellence and barriers to good care.

PCNs identified as the higher or lower performing (each group circa 25 PCNs) as part of the data collection and review process, will be included in discussions of sharing good practice and finding enablers to positively drive change. The Diabetes Strategic Clinical Network and the NEDS team will be encouraged to meet to support and facilitate shared learning and innovation. A bi-annual report will be produced based on good practice and learning points, as well as virtual discussions sharing themes and learnings across the country. It is anticipated that these reports will direct future funding, research areas and identify any shared barriers to good care.

7.5 Research

The development of PCNs has opened new possibilities for the management of people living with diabetes. Work should be done to encourage and strengthen working relationships with the NIHR to ensure necessary research is done. In 2018/19, the NIHR Clinical Research Network (CRN) supported 562 primary care studies, 209 of which were new studies, and recruited 160,146 patients to studies within this specialty area.⁸¹

It would be hoped that more collaborative research could be produced partnering academics and practitioners from across the country. This research should aim to be topical and will have an impact both at policy level and in general practices around the country.

<u>Bright Outcomes: NIHR Research, Screening and brief intervention for obesity in primary care (BWeL): A parallel, two arm randomised control trial⁸¹</u>	
<i>What was done?</i>	<i>What were the outcomes?</i>
<ul style="list-style-type: none"> - 57 GP Practices - 137 primary care physicians - Participants were >18yrs old, BMI\geq25/m²for Asian participants and \geq30/m²for other ethnicities and had a raised body fat % - Intervention group received a 30 second support intervention on how attending a free behavioural weight loss programme was a good way to lose weight. If person agreed they were booked on. - The control group had a 30 second intervention to encourage people to lose weight. - 3 month follow up and 12 month follow up 	<ul style="list-style-type: none"> - After 12 months, the mean weight change for participants receiving the support intervention was 2.43kg compared to 1.04kg for those who only received advice from their primary care physician. - At 12 months 25% of the 940 participants had lost at least 5% of their body weight and 10% had lost at least 10% (double that seen in the control group) - Patient feedback was overwhelmingly positive. 81% of participants said it was appropriate and helpful. - The study had led to PHE document 'Adult weight management, short conversations with patients' - It has led to the production of essential CPD e-learning from the RCGP

Examples of Future Research Proposals	
1	How are outcomes for care processes affected for people living with diabetes who have had virtual consultations and/or education (outcomes for diabetes vs face to face, how to minimise the emotional disconnect) compared to those retaining face to face appointments and/or education.
2	What is the impact on using embedded practices around referrals and mental health Screening vs. ad hoc screening/referrals on primary care staff confidence?
3	Remote monitoring of urinary ACR using smartphone apps. Does this increase the number of urinary ACRs performed?
4	What is the impact on care process outcomes for virtual education in BAME communities vs. other communities over a 12-24 -month period?
5	How do outcomes for care processes differ when comparing PCNs adopting a tier structure to care delivery vs. those retaining other methods of working over a 1/2/5 year period?
6	How do outcomes for the care processes differ when comparing different incentivisation schemes for people living with diabetes and is there any difference in levels of clinical inertia around intensification?
7	How do outcomes for the care processes differ in people living with type 2 who have attended structured education early vs. not attended/attended > 1 year from diagnosis? Alternatively, attended a refresher course vs. not attended?
8	Are there key characteristics of people living with type 2 diabetes who want to pursue remission compared to those not wanting to? What are the factors associated with relapse and maintenance of remission? How do remission rates compare in specific populations e.g. BAME groups? What is the impact of remission on long term complications?
9	Does consistent education to those of childbearing potential correlate to an increase in attendance at antenatal clinic appointments in people living with diabetes or lead to more women presenting at booking ANC optimised for pregnancy?

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APPENDICES

Appendix 1. Further Examples of Established Integrated Care Systems

County Durham and Darlington Integrated Diabetes Model

- Established in 2016 and involving 76 GP practices, three acute trusts and 7 GP federations working together
- Diabetes governance board - 7 diabetes locality groups and 45,000 people living with diabetes
- Diabetes Clinical Advisory Group - advises on clinical matters and prescribing linking to the area prescribing committee
- The CD&D Integrated Diabetes model involves GP practices delivering at 3 care levels (Care basic, Care + and Care ++). A payment is made to GP practices depending on which care level they deliver.
- Diabetes Steering Group - decisions on ICS delivery of the National Diabetes Programme and encourages CCGs to engage at ICP level in order to inform the decision making process
- Care level monitoring and payments are made to practices through the GP Federations who are also provided with a training budget in order to organise and co-ordinate Diabetes training and education for GP practices in their area.
- GPs and Practice Nurses have been upskilled through practice based clinics with Consultant Diabetologists and Diabetes Specialist Nurses (DSNs) along with regular MDT meetings
- Diabetes care delivery can be monitored using a Diabetes Dashboard which includes national and local performance indicators. The dashboard and data is produced at a CCG, locality and GP practice level
- There has been a steady improvement in performance since the model was introduced with 100% of practices in Darlington, 89% in DDES and 80% of GP practices in North Durham delivering at the highest Care ++ level.
- A full evaluation of the Integrated Diabetes Model is in progress

Integrated Care Renal Clinic – Lambeth Diabetes Intermediate Care Team and Guy's and St Thomas' Hospital

- People with Type 2 diabetes with existing CKD (stages 1-3) with risk factors that drive earlier presentation and progression of cardio-renal complications.
- Referral criteria included:
 - albumin: creatinine ratio >30mg/mmol despite optimised renin angiotensin system blockade
 - Decline in eGFR ≥ 5 -10ml/min/1.73m² over the last 12 months (dependent on baseline eGFR)
 - Sub-optimal diabetes or blood pressure control complicated by progressive renal function deterioration.
- Pilot clinic set up in 2017 to test the feasibility of managing kidney disease related to diabetes in a community setting. Multi-disciplinary team including Consultant in diabetes and renal medicine, GP with special interest, diabetes specialist nurse, diabetes dietician and consultant pharmacist.
- Referral thresholds directed earlier referral than National guidance to reflect the complexity and risk factors present in the local population. Patients were triaged according to progression of disease and risk factors in the pre-clinic MDT meeting. Evaluation of glycaemic and blood pressure (BP) indices alongside eGFR via point of care testing was undertaken face to face and serial trends accessed via the local care record.
- A management/shared care plan was agreed in clinic jointly with the person living with diabetes with referral back to usual care (GP or Diabetes Intermediate Care Team) or secondary care where clinically indicated.
- Patients were provided with:
 - education on sick day rules and self-management
 - sick day rule cards specific for people with diabetic kidney disease (these are shared with local organisations)
- This project demonstrated feasibility of delivering a diabetes renal service in the community. The clinic is now an integral component of the commissioned community diabetes service in Lambeth and has led to local pathways and processes that promote the importance of early identification, referral and management of patients at high risk of DKD progression. Patient satisfaction with the clinic was high with 86% rating the service as excellent and 14% very good. 12% of the cohort were referred to secondary care for further DKD management with the remaining 88% referred back to usual care.
- The multidisciplinary team are now piloting expanding the scope of the clinic and joint working with the community heart failure teams

Appendix 2. Alternatives for people unable to attend structured or virtual education programmes	
Carers attending structured education	Carers should be invited to attend with or in place of the person with diabetes as necessary to enable carers to provide effective support to the person with diabetes
1-2-1 dietetic education	Diabetes specialist dietitians placed within education services, the community or PCN may offer a single appointment of tailored education to patients and/or carers for whom group structured education is unsuitable.
Online education and self-management platforms	Although these platforms have not been shown to provide the benefits of face-to-face education, they are sometimes preferred and have provided an improvement in HbA1c for some users. ^{55,82} Quality and usability of platforms is improving. Current providers include Diabetes UK's Learning Zone, MyDESMOND, the Low Carbohydrate Programme, and Healthy Living (in redevelopment for national implementation). Further research into the benefits of online education in type 2 is needed.
Peer support	Peer support can be offered by someone who has diabetes or is affected by diabetes and therefore has first-hand knowledge of the daily struggles and issues this presents. Health care professionals should encourage people that have digital access to link in with the diabetes online community on Twitter by following conversations via these hashtags: #DOC and #OurD. Social media platforms enable users to follow organisations, such as @DiabetesUK, individual professionals/diabetes services, or to join local diabetes peer support groups. Many people with diabetes have created blogs and vlogs as useful resources for peers, which can be found on the individual's profile. Forums such as the Diabetes UK Support Forum facilitate conversations for hundreds of thousands of peers. Peer educators often work with local groups that are provided by someone other than a health care professional, such as regional Diabetes UK groups, or join in with facilitating structured education programmes.
Alternative group options	Local NHS and private services may offer these interventions for people meeting set criteria. Further research is needed into their efficacy for type 2. <ol style="list-style-type: none"> 1. Pre-insulin assessment groups: these may help to identify people with type 2 that do not need to start insulin, and in those who commence insulin, reduce the amount of weight gained in those who reach blood glucose targets.⁸³ 2. Injectables groups: established insulin and/or GLP1 agonists. Examples include DESMOND Injectables and XPERT INSULIN. 3. Groups targeting remission of type 2. 4. Tier 3 pre-bariatric weight management groups.

Appendix 3. Educational resources available for BAME populations

- DESMOND: Cultural Adaption pathway, including structured education modules.⁸⁴
- Diabetes UK: educational resources in different languages.⁸⁵
- Apnee Sehat: commissioned services of culturally sensitive diabetes care to the South Asian community.⁸⁶
- The South Asian Health Foundation (SAHF) Diabetes Working Group: conferences, guidelines and resources.⁸⁷
- Carbs & Cals World Foods: A Visual Guide to African, Arabic, Caribbean and South Asian Foods for Diabetes & Weight Management.⁸⁸

Appendix 4: Different dietary interventions proven for weight loss in Type 2 diabetes

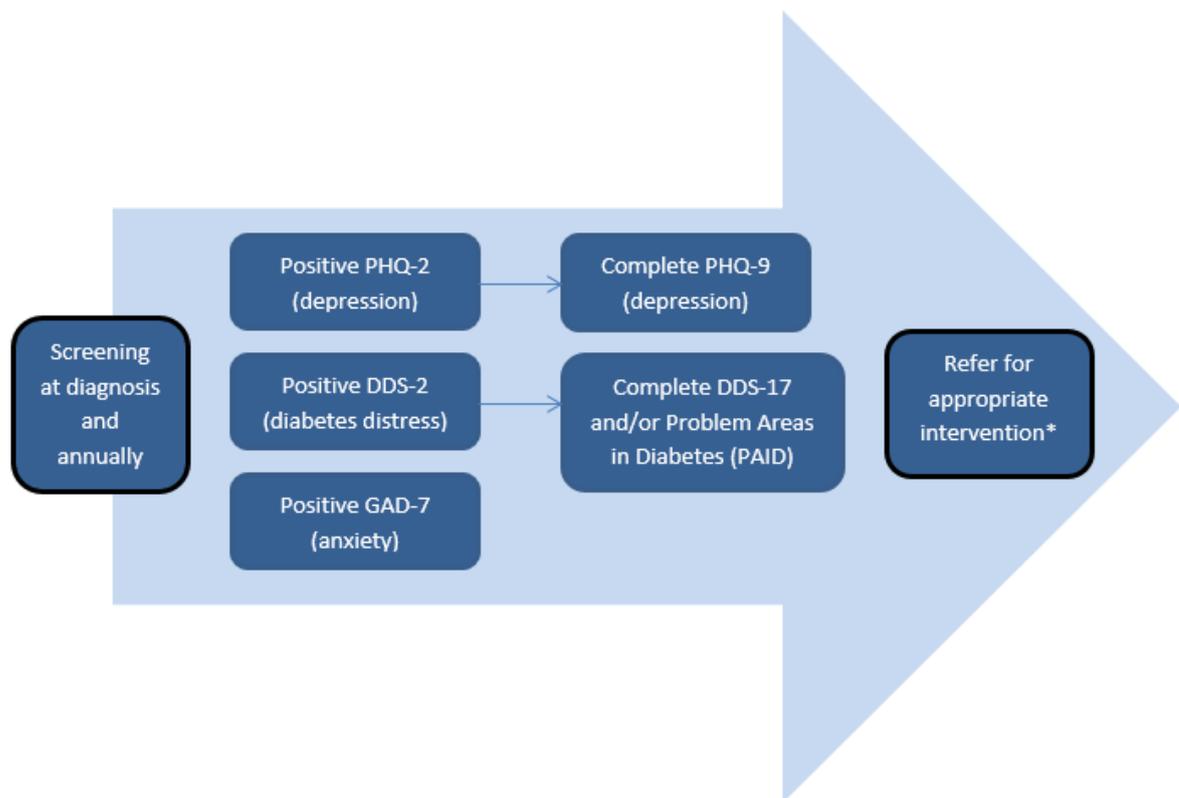
Total diet replacement (TDR) plans	Food is replaced by nutritionally complete liquid formulae (usually shakes), either exclusively (TDR) for 12 weeks or partially (meal replacement) providing just 800-1200kcal alongside structured support. ^{19,52} These have been shown to successfully maintain remission in 36% at two years (refer to Section 5.4). ⁵³ Meal replacement products usually incur a cost.
Intensive multi-component lifestyle interventions	These essentially combine more than one intervention such as diet and exercise as utilised in the Look Ahead study, which successfully maintained remission in 7% at four year follow up. ⁸⁹⁻⁹²
Mediterranean style diet	Key features are similar to Public Health England's published Eatwell Guide for the general population and the Dietary Approaches to Stop Hypertension (DASH) diet. Associated with lower total and CVD mortality, and in the Predimed study successfully maintained remission in 5% at 6 year follow up. ⁹³⁻⁹⁵
Low/Lower carbohydrate diets	The definition of low carbohydrate in research varies widely. Lower 'moderate' carbohydrate diets (40% total energy) provide greater reduction in HbA1c than higher carbohydrate (general population) intake in the short term. ⁹⁶ Short term weight loss and remission have also been demonstrated from low and very low carbohydrate (ketotic) diets, yet adherence can be a challenge long term. ^{55,56,97}
Commercial diet services	Further research is required to establish their efficacy in type 2 diabetes, but remain a popular option and are available on prescription. ⁹⁸
Low fat diets	Historically widely practiced and extensively employed in research studies for weight management in type 2. ¹⁹
Physical activity	Effective as a weight loss strategy when 60 minutes per day is undertaken, but less than this has not been found to be effective on its own. ^{99,100} However physical activity is still recommended in type 2 for a plethora of health benefits. ^{18,19,101}
Very low energy diets (VLED)	Energy from food is usually restricted to a maximum of 800kcal. NICE 2014 guidelines advised VLED should not be routinely recommended to manage obesity; some regions now offer VLED as an option for rapid weight loss to target

	remission of type 2 diabetes, but the current evidence base for diet-induced remission is in relation to TDR. ¹⁰²⁻¹⁰⁴ When followed, VLED should be nutritionally complete, should not be continued for longer than 12 weeks, and must have ongoing clinical support. ¹⁰⁴
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Appendix 5: Standards for Good Diabetes Care in Care Homes^{105,106}

Standard	Description
1	All care homes should have a co-developed policy for good diabetes care from the primary care network to which they belong.
2	A personalised diabetes care plan should be included in the notes of anyone in the care home who is living with diabetes even if the diabetes is not on diabetes medication.
3	Each care home should identify a 'Diabetes Champion' and that person should ensure that at least one member of staff has attended a locally recognised accredited training.
4	All care home staff should have a basic knowledge of diabetes and be competent to take care of a person's needs with diabetes.
5	Care homes should ensure that daily foot checks are being performed by the person living with diabetes or a member of staff.
6	Care homes should keep a fully stocks and in date 'hypo box' containing fast acting glucose to treat hypoglycaemia or "hypos" (low blood sugars). Some nursing homes may choose to have individual 'hypo boxes' for residents with more complex needs. Expiry dates on items and stock in boxes should be regularly checked.
7	Some residents at higher risk of hypoglycaemia may need to have their blood glucose monitored by care home staff. The frequency of monitoring should be clearly documented by care teams in the care plan and should be in line with local policy.
8	There should be a nutrition care plan based on both the resident's MUST score and best practice guidance on nutrition for residents with diabetes. Residents with diabetes should not be recommended to follow a diabetic menu or have nutrition support withheld for glycaemic management. Ideally dietitian input from the wider community and/or diabetes specialist dietetic services should be sought.
9	Care homes should ensure that residents are able to have their annual diabetes reviews as a minimum.
10	Audits should be performed to assess compliance with standards that should be set out in the diabetes policy.
11	Each care home should develop an audit tool to assess the quality and extent of diabetes care within their care homes.

Appendix 6: Pathway for Mental Health Assessment



*Screening tools include the Patient Health Questionnaire (PHQ-2) for Depression or the Diabetes Distress Screening Scale (DDS-2) for diabetes distress. Following a positive screen, then the full Diabetes Distress Screening Scale (DDS-17)/ Problem Areas in Diabetes questionnaire (PAID) or full version of the Patient Health Questionnaire (PHQ-9) should be used to direct appropriate referral and management. These scoring systems are recognised by mental health services and hence help to inform referrals.