NHS
Leicester, Leicestershire and Rutland

DIABETES MODEL OF CARE TOOLKIT

2012–2025

CONTENTS

EXECUTIVE SUMMARY

The Diabetes Model of Care Toolkit for Leicester, Leicestershire and Rutland (LLR) sets out a proven, integrated approach to transforming diabetes services across primary, community, and specialist care. Since 2012, the model has prioritised prevention, structured education (e.g. DESMOND, DAFNE), and proactive management of complications, while strengthening workforce capacity through EDEN training and mentoring. By shifting care closer to home and embedding specialist support in GP practices and community services, the model has improved outcomes, reduced unwarranted variation, and delivered savings of £83 per patient per year – with potential national savings of £276 million. Evidence shows higher uptake of the nine care processes, improved achievement of treatment targets, and greater patient empower through education and digital innovation.

This approach aligns closely with the Fit for the Future: 10 Year Health Plan for England. The LLR model exemplifies the Plan's three radical shifts: moving care from hospital to community, embedding digital tools in both professional practice and patient self-management, and focusing on prevention to reduce avoidable complications. By tackling inequalities, decentralising care, and upskilling local teams, it supports the creation of "neighbourhood health services" envisaged nationally. The Toolkit provides commissioners, providers, and policy leaders with a scalable, evidence-based framework to deliver sustainable, equitable, and person-centred diabetes care – central to the NHS's wider transformation agenda

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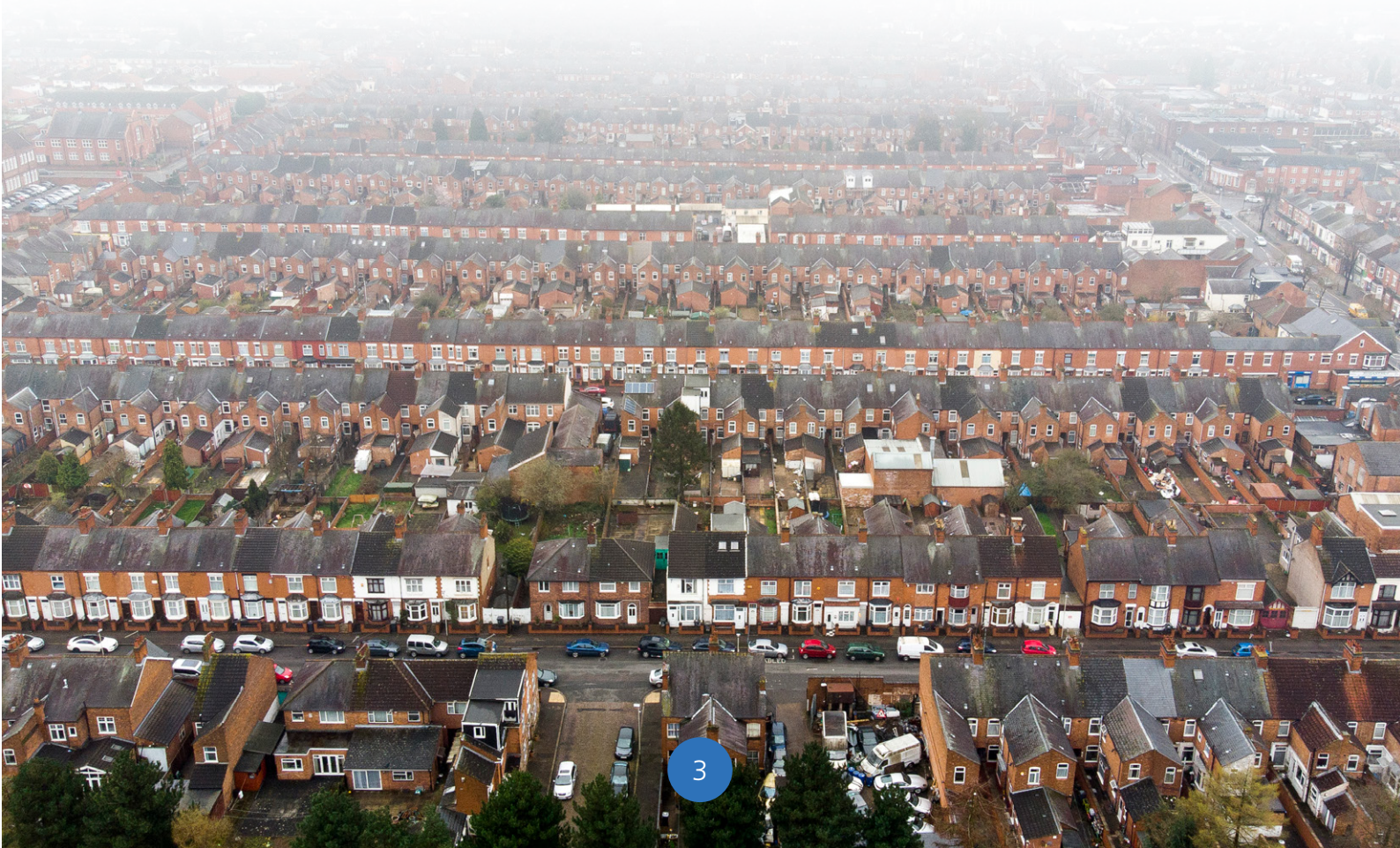


1. Prevention Framework (CVD & Diabetes Complication Risk)

Following diabetes diagnosis

- **Primordial Prevention:** Address systemic risk (poverty, poor access); use Interface Groups, Specialist Subgroups, and public engagement to enhance early intervention.
- **Primary Prevention:** Offer structured education (DESMOND, DAFNE); NHS Health Checks; GP reviews; community DSN support; mentorship to build HCP capacity.
- **Secondary Prevention:** Deliver 8 care processes & 3 treatment targets (HbA1c, BP, cholesterol); enhanced practices achieve 46.56% (T2DM) vs. 36.16% (Core); use CGM, DSN monitoring, and EDEN-led tailored interventions.
- **Tertiary Prevention:** Optimise treatment via MDTs; prioritise frail/high-risk patients via CDSN; manage multimorbidity (CVD, CKD, retinopathy); reduce functional decline through education.
- **Quaternary Prevention:** Avoid overtreatment; enable shared decision-making and personalised care adjustments (PCA); enhanced practices show lower PCA rates; provide psychological support.

2. Specialist to Primary/Community Care – "Left Shifting"

- Decentralise care via Integrated Operational Groups and local leadership.
- Implementation: £25 per patient (QOF); 85% practices accredited by Nov 2024 (covering 87% of diabetes population); 1,315 EDEN attendances (2022–24).
- Clinical Gains: Enhanced practices outperform Core in 8 care processes and targets; 1% T2DM target gain = 800+ optimally managed patients; reduced hospital use; more local care.
- Efficiency: £83 saved per patient/year; £2.19M saved in Leicester; lower CDSN referrals despite higher support demand—showing internal capacity growth.

3. Analogue to Digital Transition

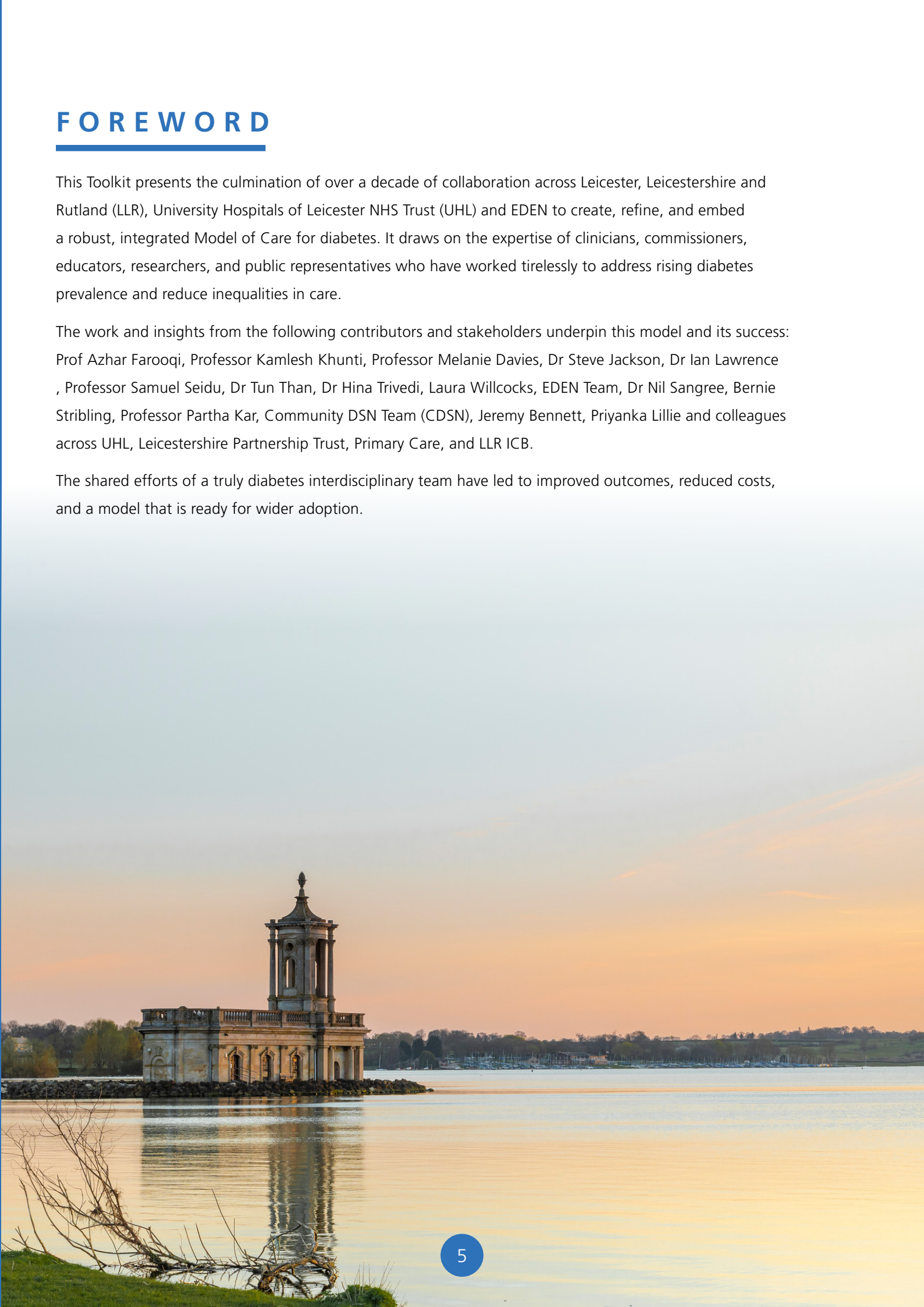
- Professional Tools: EDEN has trained 12,000+ HCPs with 130 modules; virtual mentoring and case discussions widely used.
- Patient Tools: DESMOND yields 0.96% HbA1c drop at 6 months, 0.70% at 12 months; 16.1% increase in structured education referrals (2021–22); widespread CGM, DAFNE, and virtual reviews.
- Inclusion & Equity: Digital access in rural hubs (e.g. Hinckley, Oakham); virtual DSN clinics reduce travel burden; Consultant Connect service supports integration; audit tools and templates enable equitable, high-quality care.

FOREWORD

This Toolkit presents the culmination of over a decade of collaboration across Leicester, Leicestershire and Rutland (LLR), University Hospitals of Leicester NHS Trust (UHL) and EDEN to create, refine, and embed a robust, integrated Model of Care for diabetes. It draws on the expertise of clinicians, commissioners, educators, researchers, and public representatives who have worked tirelessly to address rising diabetes prevalence and reduce inequalities in care.

The work and insights from the following contributors and stakeholders underpin this model and its success: Prof Azhar Farooqi, Professor Kamlesh Khunti, Professor Melanie Davies, Dr Steve Jackson, Dr Ian Lawrence , Professor Samuel Seidu, Dr Tun Than, Dr Hina Trivedi, Laura Willcocks, EDEN Team, Dr Nil Sangree, Bernie Stribling, Professor Partha Kar, Community DSN Team (CDSN), Jeremy Bennett, Priyanka Lillie and colleagues across UHL, Leicestershire Partnership Trust, Primary Care, and LLR ICB.

The shared efforts of a truly diabetes interdisciplinary team have led to improved outcomes, reduced costs, and a model that is ready for wider adoption.



INTRODUCTION

Launched in 2012, the LLR Diabetes Model of Care was developed to tackle fragmented services and address health inequalities in diabetes care. It has evolved into a nationally recognised, integrated care model that connects primary, secondary, and community services.

Supported by transformation funding and a network of stakeholders, this model emphasises proactive management, specialist support, and capacity building within general practice.

Diabetes is a national, regional, and local clinical priority and is a major chronic disease that has a significant impact on mortality, morbidity, and health costs in the UK. It is associated with considerable morbidity and early mortality and complications including cardiovascular disease, stroke, blindness, renal failure, and lower limb amputation.

Improving the management of people with long-term conditions is an important strategy for improving health outcomes and controlling healthcare expenditure. Consequently, this is a key element of NHS policy and diabetes is a clinical priority at all levels due to the risks and complications associated with its progression as a chronic condition.

Adults living with diabetes have an excess risk of a range of complications, including major vascular disease (heart attack and stroke) and microvascular disease (kidney disease, amputation, and retinopathy). A yearly review of the nine care processes (a quality standard for people living with diabetes) should be undertaken every year

Key aims include:

- **Reducing complications**
- **Preventing hospital admissions**
- **Empowering primary care**
- **Delivering personalised, equitable care**

The known impact of diabetes complications is:

1 in 3 amputations occur in people with diabetes. Of these, **8 out of 10** are preventable.

There was a yearly increase of 0.01% in the number of amputations in people with diabetes before the diabetes Enhanced Service was rolled out in LLR, but since it's wider implementation, this has stayed consistent at 0.18% over its 2-year pilot.

Diabetic retinopathy is the **leading cause of sight loss** among the working-age population in the UK.

People with diabetes are **five times more at risk** of cardiovascular disease (CVD) compared to those without diabetes.

The prevalence of chronic kidney disease (CKD) because of diabetes varies from **18% to over 30%** in all people with diabetes, compared to **5-10%** of the general population. In LLR, **22%** of the population living with diabetes are also living with a renal condition.

DIABETES MODEL OF CARE IN LLR (2012–2025)

Over more than a decade, Leicester, Leicestershire, and Rutland (LLR) have led a bold and collaborative transformation of diabetes care. This system-wide approach has focused on integration, innovation, and inclusivity, ensuring that people living with diabetes receive high-quality, consistent, and person-centred care across all settings.

Key Components of the Transformation:

Interface Operational Group: A central leadership team aligning primary, community, and secondary care.

Specialist Subgroups Focused on key areas: T1DM, Foot Care, Pregnancy, Renal, and Education.

Locality-Based Specialist Teams: Community-embedded multidisciplinary teams bridging care settings.

Structured Education: Empowering patients and professionals through targeted learning.

Enhanced Services & Mentorship: Upskilling providers via expanded services and expert mentorship.

Public Engagement: Co-designed care shaped by patient and community voices.

SECTION 1: USING THE LLR DIABETES MODEL OF CARE

1.1 What is the LLR Model of Care

The model consists of a collaborative, locality based model to integrate services for the whole person with diabetes and their multiple core requirements in order to:

Empowered primary care by upskilling the HCPs through EDEN education – including valuable work across Three Treatment Targets (3TT), care homes and more.

Provide targeted specialist input – with expert mentoring and sustainable development from EDEN, specialist mentors and the Community Diabetes Specialist Nursing (CDSN) team.

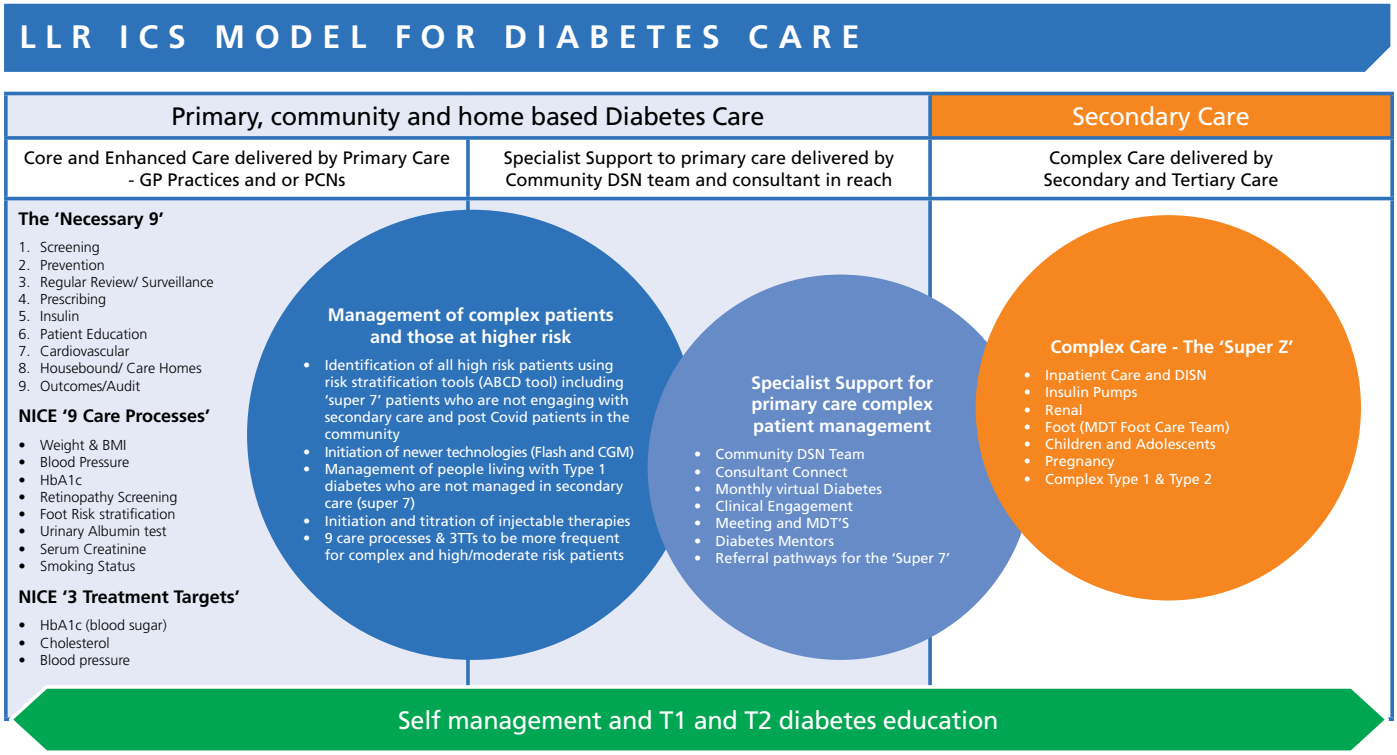
Ensure equity across populations demonstrating collaborative best practice, skilled and safe care.

Assure enhanced user experience from the aligned core service delivery to the enhanced model of care.

1.2 The Components of the Model

1.2.1 Super Seven

The 'Super Seven' refers to a set of complex and enhanced core services delivered in secondary and tertiary care. These services complement the 'Necessary Nine,' which are primarily provided in primary care settings, either as core and enhanced services or with additional specialist support."



This clinical approach is underpinned by the need for planned structured robust education.

1.2.2 Training and Support: EDEN

- EDEN delivers flexible and hybrid education locally, nationally and internationally.
- Across the local system, the approach is a blend of face-to-face, virtual and hybrid education, derived from ongoing user feedback and designed to deliver maximal impact for patient outcomes.
- EDEN has delivered over 130 training modules to more than 12,000 healthcare professionals and is underpinned by clinical, academic and real world evidence and practice.
- The model encompasses the requirement for holistic patient centred care, as opposed to 'siloed' systems of disease. Multiple long term condition management across the whole CRM and broader patient pathway is integral to delivery and implementation.
- This enables transformation and innovative evidence based healthcare delivery, embedded as an integral component of the service delivery in LLR.

1.2.3 Diabetes Mentor Programme

The Diabetes Mentor Programme was designed to support healthcare professionals in delivering confident, high-quality diabetes care through expert guidance, practical tools, and personalised development.

Our mentors worked alongside practices to strengthen service delivery, enhance clinical skills, and embed best practices across the diabetes care pathway.

Mentorship for Accreditation: Step-by-step support to help meet accreditation standards with confidence.

Funded Sessions: Mentors receive up to four funded mentorship sessions per month.

Practice-Level Support: Tailored guidance to help you refine your care model and improve outcomes.

Monthly Case Discussions: Collaborative learning through real-world case reviews and shared insights.

1.2.4 Community DSN Service

- Practice level support
- Competency sign off for practices
- Manage a patient case load
- Monthly meeting
- Referral criteria
- Support complex patients from enhanced practices
- Dedicated helpline

1.2.5 Resources

- Accreditation templates
- Patient tracking tools (SystmOne)
- Decision support (EHR prescribing prompts)
- Monthly virtual drop-ins (1 hour meeting every Thursday of the month)

1.3 Cost Implications and Challenges

- **Financial input:**
  - Practice enhancement: £22.50 per patient
  - £100–150K annual education spend
  - Funded mentorship sessions (4 per month)
  - Funded support for Diabetes Specialist Nurses
- **Cost savings**
  - Improved QOF outcomes and prescribing efficiencies
  - £83 annual saving per patient (Seidu et al., 2021)
  - £2,190,000 savings annually in Leicester City
  - National savings of £276M if scaled

SECTION 2: RESEARCH EVIDENCE

2.1 The Super Six Model of Care

An early intervention launched in 2009 across Portsmouth and South-East Hampshire introduced the Super Six Model of Care, which focused on delivering specialist support for six key categories of diabetes care. This model aimed to streamline services and improve outcomes by concentrating expertise and resources on high-need areas within diabetes management.

Building on this foundation, LLR expanded the model into the Super Seven/Necessary Nine. These adaptations incorporated broader elements of primary care provision, aiming to reduce fragmentation and prevent siloed approaches to diabetes care. The evolution of the model reflects a growing emphasis on integrated, patient-centred care that spans both specialist and generalist services.

2.2 Research Outputs Supporting the Model

- Seidu et al. (2021): Enhanced primary care model reduced cost and improved outcomes. DOI: 10.1016/j.pcd.2020.10.011
- Brady et al. (2021): Effectiveness of the Transformation model, a model of care that integrates diabetes services across primary, secondary and community care: A retrospective study. DOI: 10.1111/dme.14504
- Chatterjee et al (2017): Real-world evaluation of the DESMOND type 2 diabetes education and self-management programme. DOI: 10.1002/pdi.2154
- Seidu et al. (2017): Before-and-after study showed improved HbA1c, BP, and lipids. DOI: 10.1016/j.pcd.2016.09.005
- Seidu et al. (2017): Diabetes Med: Advocated integrated primary care approach. DOI: 10.1111/dme.13348
- Goulder & Kar (2013): Community-based support enhances sustainability. DOI: 10.1136/bmjquality.u201112.w708

SECTION 3: CASE STUDIES AND LOCAL IMPACT

3.1 From City Model to Full LLR Roll-Out (2012–2025)

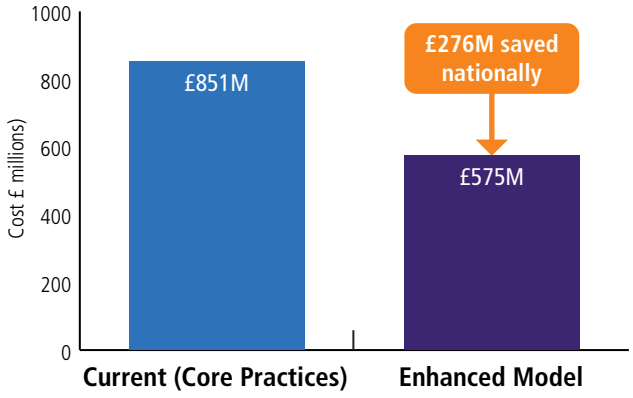
The LLR Diabetes Model of Care originated in 2012–13 as a city-based initiative in Leicester. It was formally commissioned in Leicester City from 2016, making significant shift toward proactive, primary care led diabetes management.

Early evaluations of the model demonstrated:

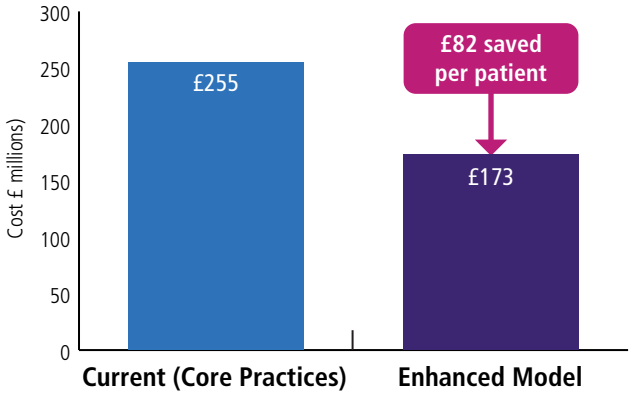
- Significant reductions in non-elective hospital bed days related to type 2 diabetes.
- The average yearly cost of diabetes care was £255 per person in standard GP practices, compared to £173 in practices using the enhanced model of care. This means the enhanced approach saved around £83 per patient each year. If this model were used across all GP practices in the UK, it could save the NHS approximately £276 million annually.
- Between 2016 and 2021, the success of the Leicester model attracted national attention, with 10 other Integrated Care Boards (ICBs) across the UK adapting elements of the approach.

Due to its demonstrated effectiveness, a two-year pilot to expand the Enhanced Service across the entire Leicester, Leicestershire, and Rutland region was launched in September 2022. This initiative marked a pivotal shift from a city-focused model to a system-wide rollout, with the aim of delivering consistent, high-quality diabetes care across both urban and rural populations.

If the Enhanced Model of Diabetes Care Were Delivered Across All UK Practices: Total Annual Diabetes Care Cost



Based on the Leicester Model of Care: Annual Diabetes Care Cost per Person



3.2 2022–2024 Pilot Expansion and Evaluation

The LLR wide pilot launched in 2022 was underpinned by a £1.9 million per annum investment. Participating practices receive £25 per patient on their QOF diabetes register to fund training and service delivery.

A robust accreditation system was introduced to ensure quality and consistency.

To become an Enhanced Provider, practices were required to meet the following minimum criteria:

- A named Lead GP and Lead Nurse/Pharmacist within the Practice, PCN, or Provider (depending on the delivery model) who has completed the mandatory EDEN training modules within the last two years

By November 2024, 108 out of 127 practices (85%) were delivering the Enhanced Service, covering 87% of all people with diabetes in LLR. Practices that opted to not, did not become accredited and received continued support from the Community Diabetes Specialist Nurse (CDSN) service and were encouraged to access EDEN training, helping avoid a two-tiered system. The CDSN allowed referrals to their service from core and enhanced practices, to ensure that care is delivered as close to home as possible and individuals do not need to attend secondary care unless meeting the Super Seven criteria.

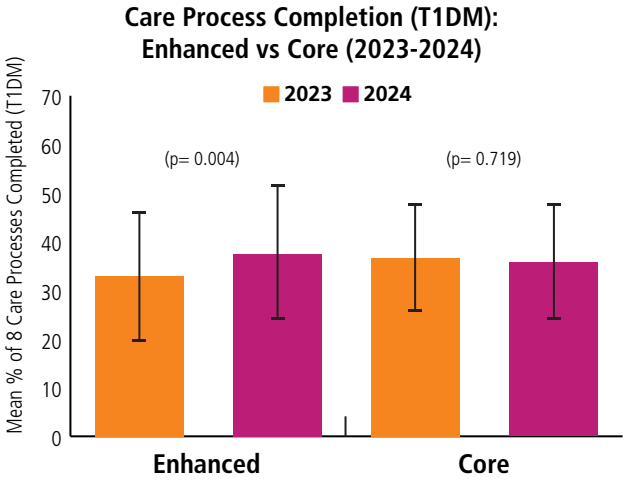
3.3 Clinical Impact: Delivery of the 8 Diabetes Care Processes

Analysis of data from **March 2023 to March 2024** revealed that Enhanced practices consistently outperformed Core practices in delivering the full eight care processes for diabetes:

For Type 1 Diabetes

The **8 Care Processes** within the enhanced group. The mean percentage increased from **33.01% (SD = 12.76)** in 2023 to **37.42% (SD = 13.11)** in 2024. The calculated difference of -4.40 (95% CI = -7.32 to -1.48) was statistically significant (p = 0.004).

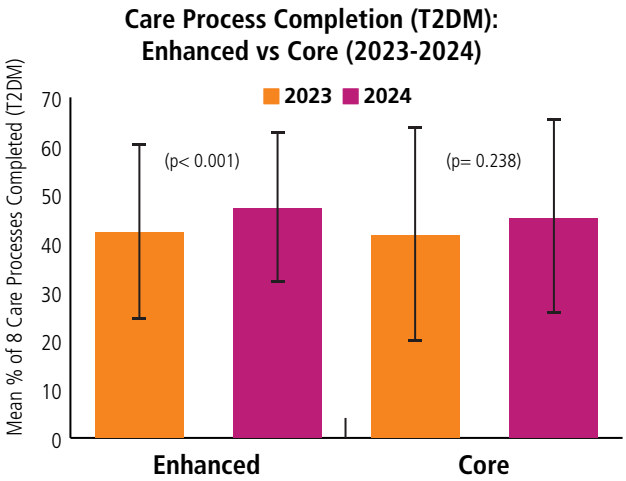
The **8 Care Processes** within the core group experienced a minor decrease, with the mean percentage falling from **36.64% (SD = 10.81)** in 2023 to **35.73% (SD = 11.32)** in 2024. This change was also not statistically significant, with a p-value of **0.719**.



For Type 2 Diabetes

The **8 Care Processes** demonstrated a substantial increase in the percentage mean target, rising from **42.27% (SD = 17.20)** in 2023 to **47.23% (SD = 14.84)** in 2024. This improvement, corresponding to a difference of **-4.96** (95% CI = -7.30 to -2.61), was highly significant (p < 0.001).

For the Core practice the increase was from **41.58% (SD = 20.91)** in 2023 to **45.05% (SD = 19.31)** in 2024, and increase of -3.47[-10.14 to 3.20] p-value 0.283



These gains indicate not only consistency in care but also a progressive improvement linked to team upskilling and structured implementation support.

3.4 Addressing Multimorbidity: The Three Treatment Targets (3TTs)

The model's success extends beyond diabetes metrics. Enhanced practices showed better achievement of the NICE-recommended Three Treatment Targets (HbA1c, BP, cholesterol):

- **+3.5% in T1DM** and **+1% in T2DM** compared to Core practices
- A **1% increase** equates to nearly **800 additional T2DM patients** achieving optimal control
- Estimated lifetime **savings per patient range** from **£414–£1,660**, translating to potential regional savings of **£331,200–£1.3 million**

3.5 Optimising Use of Specialist Resources

Enhanced practices showed responsible use of CDSN support:

- Higher call volume but lower referrals, indicating growing internal capacity
- Calls were largely about complex medication issues
- DSNs reported a **shift from routine support to managing highly complex and frail patients**

This shift reflects better triaging, upskilled primary care, and increased efficiency in specialist service use.

3.5 Care Closer to Home

The Enhanced model enabled more patients to be managed directly in their GP practice, avoiding travel to DSN clinics. While secondary care clinic sessions continue in the community (Market Harborough, Melton, Coalville, Hinckley, Loughborough and Oakham), the patient-centric nature of enhanced care supports sustainability, convenience, and reduced environmental impact.

3.6 Upskilling and Workforce Development

Between **August 2022 and November 2024**, the EDEN programme recorded 1,315 training attendances across LLR. This investment in professional development improved both confidence and competence in delivering diabetes care and has driven the service's measurable quality improvements.

"The upskilling of our staff through EDEN and the support from Diabetes Mentors has made a real difference. Our patients feel that we're finally able to support their diabetes needs fully at the GP level."

- Practice Manager, Enhanced

"Thank you very much for the excellent training today, I feel more confident in being able to keep our patients fully informed of the services available to them."

-Practice Nurse, Enhanced

3.7 Structured Education and Patient Empowerment

A key component of the LLR model was ensuring NICE-compliant, evidence-based Structured Self-Management Education such as DAFNE (Dose Adjustment for Normal Eating) for adults with type 1 diabetes and DESMOND (Diabetes Education and Self-Management for Ongoing and Newly Diagnosed) for adults with type 2 diabetes.

A real-world evaluation of DESMOND in LLR reviewed the outcomes of participants who attended between January 2014 and March 2015 and found that those who attended one of the 244 courses ran during this period, reduced their HbA1c by 0.96% after six-months and 0.70% at 12 months (both statistically significant; $p<0.005$). Plus, attendees feedback that their ability to self-manage had improved.

Enhanced practices showed increased referral rates to such programmes available across LLR. NDA data shows a **16.1% rise in referrals from 2021 to 2022**, reflecting increased awareness and prioritisation of patient empowerment.

3.8 Coding Quality: Personalised Care Adjustments (PCA)

Enhanced practices had lower PCA rates than Core practices, suggesting fewer patients were excluded from care metrics due to avoidable factors. This points to more inclusive, proactive, and patient-centred care.

SECTION 4: EVIDENCE FOR COMMISSIONERS AND HEALTH AND SOCIAL CARE PROVIDERS

4.1 Why Do We Need This Model?

Diabetes is one of the most significant and growing health challenges in the UK, with over 4.3 million people currently living with the condition. It is a major contributor to cardiovascular disease, renal failure, and other chronic complications, placing immense pressure on health and social care systems and accounting for billions of pounds in healthcare expenditure annually.

However, diabetes does not affect everyone equally, and models such as the LLR enhanced service model drive the critical movement towards equitable care that reduces variation and utilises resources carefully to improve financial and patient level outcome.

4.2 What is the Staffing Requirement?

Core components for model success include a skilled competent workforce comprising:

- Community Diabetes Specialist Support Team: Consultant, DSNs, educators, dietitians
- Mentors with diabetes and multiple long term conditions expertise
- Practice champions - a lead GP and nurse/pharmacist
- EDEN education training, mentoring and development embedded within the workforce and strategy.

4.3 How Do Commissioners and Providers Stay Up to Date?

The success of the model derives from the integrated components and the workforce, both aligned within the system.

This includes:

- Monthly operational meetings: Primary and Secondary Care for role integration
- Placing patients and service users at the heart of the delivery
- Regular training and refresher upskilling by EDEN
- Mentorship and deepening of learning
- Participation in research, audit, and service implementation, including NDA/DDG model of care and new service delivery models

SECTION 5: CONTACT AND SUPPORT

For support in adopting the LLR Diabetes Model:

- **EDEN Training Team:** uhl-tr.edenmailbox@nhs.net
- **LLR Diabetes Mentorship Programme:** mentorship@llrdiabetes.org

Appendices:

Access these documents at www.edendiabetes.com/llr-diabetes-toolkit:

A. EDEN Training Modules List

B. Example Accreditation Checklist

C. Diabetes Mentor Job Description

D. Super 7/Necessary 9 Criteria

E. Practice Audit Template

F. Economic Evaluation Summary

G. CDSST Role & Referral Pathway