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Programme	MSc Public Health and Social Care in Practice
Module	Community Care and Management of Longer-term Conditions
Module Code	LCHS7003
Assignment Title	Component 1- Information Booklet of Long-term Condition Management (Diabetes Mellitus Type-1 & 2)
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Introduction

Long-term health conditions (LTCs) have always been a significant challenge for both patients and healthcare workers within the global healthcare systems including the UK. Within the LTCs, Diabetes Mellitus emerges as a highly serious chronic long-term disease that often has long-term harmful impacts on patients’ heart, kidneys, brain and other critical organs (Liu et al., 2022).

The most prevalent endocrine metabolic disease, diabetes mellitus, is distinguished by a lack of insulin in the body from which over 100 million individuals suffer worldwide (Alam et al., 2025). As per Nagesh et al (2020), there are two conventional forms of diabetes mellitus:

Type	Key Characteristics
Type 1 Insulin Dependent Diabetes Mellitus (IDDM)	a localised inflammatory response in and around the islets, which is followed by the targeted death cells that discharge insulin.
Type 2: Non-	Insulin resistance,

Insulin Dependent Diabetes Mellitus (NIDDM)	where the pancreas cells do not adequately utilise insulin (Kaur et al., 2020).
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Some of the key risk factors related to Diabetes Type 1 and 2 is outlined below:

- Genetic Susceptibility
- Obesity and sedentary lifestyle
- Poor diet, particularly high in processed sugars
- Ageing
- Family History (Pillon et al., 2021).

Worldwide, the burden of diabetes and its related health outcomes has significantly grown affecting every one in nine adults. As of 2025, approximately 589 million persons from 20-79 have diabetes of either type or type 2, which is estimated to increase year by year (PR Newswire, 2025).

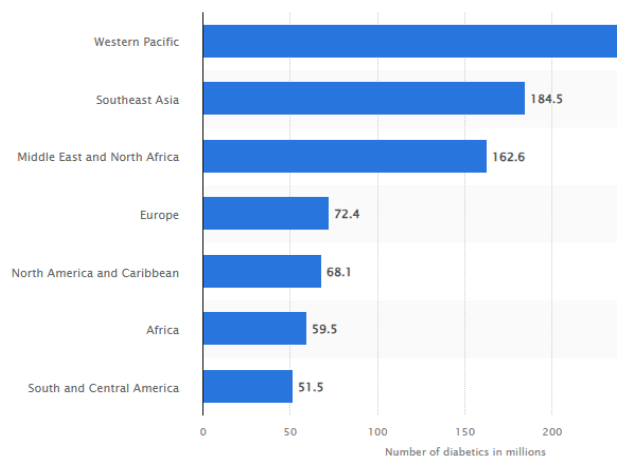


Figure 1: Projected Diabetes Patients by regions

(Source: Minhas, 2025)

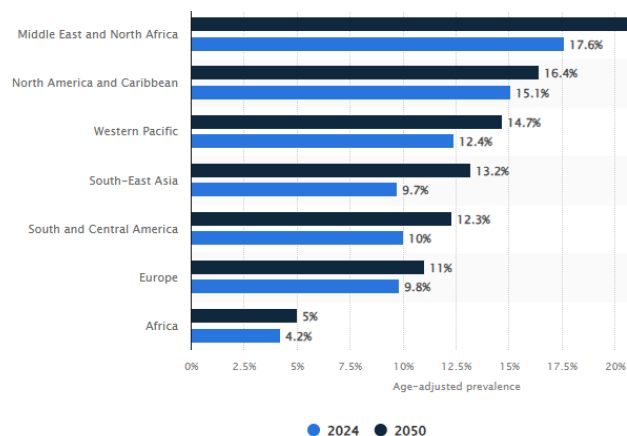


Figure 2: Diabetes Prevalence 2024-2050

(Source: Minhas, 2025a)

According to Statista reports, the number of people with diabetes is expected to rise to 589 globally by 2050, where Western Pacific and Southeast Asia is predicted to have the largest increase in diabetes rates (Minhas, 2025; Minhas, 2025a). In the UK, every one in five adults is presently a victim of diabetes, particularly type 2, which has

affected over 12.2 million people as of 2025 (Gregory, 2025). Therefore, this booklet is being developed with the aim of educating patients and healthcare professionals both worldwide and across the UK in effectively managing their diabetes levels through long-term person-centred care.

Main Body

Epidemiology, Aetiology and Burden of Diabetes Mellitus

Both type 1 and type 2 diabetes represents major long-term health conditions for a significant number of people globally and across the UK, which is even increasing day by day. Epidemiologically, over 800 million adults from 20-79 are dealing with either type 1 or type 2 diabetes (WHO, 2024) whereas, aetiologically, the changing lifestyle, poor diets and shared genetic conditions are the key reasons for this chronic disease to appear (Pillon et al., 2021). In terms of burden, this disease creates substantial detrimental physical, psychological, social and economic burden, which requires coordinated prevention, person-centred care and policy-driven management.

Definition of Longterm Condition in the context of Diabetes

From a healthcare perspective, a long-term condition is something that cannot be cured instantly, but can be managed through lifestyle modifications, consistent treatment and healthcare support (Khunti et al., 2023). In the context of diabetes mellitus, it is also recognised as a major long-term condition requiring lifelong management, continuous monitoring of blood glucose level and person-centred care (Trout et al., 2019). With the presence of two distinct types, both usually contain high blood glucose levels but despite having this similarity, their nature significantly differs as type 1 is unavoidable whereas type 2 can be addressed through lifestyle changes.

Prevalence rate of Diabetes in the UK

Diabetes has become a significant public health concern across the UK due to its rapidly increasing prevalence in terms of health-related complications. Evidence indicates that the prevalence of diabetes is seen to be increasing across the UK as males are more likely to have this condition than females, which is 9.6% versus 7.6% (Davenport, 2024). Compared to those from white, mixed, or other ethnic groups, the prevalence is greater among South Asian

and Black individuals across the UK (15.2% vs 8.0%).

The prevalence of diabetes clearly increases with age, rising from 9.0% in those aged 45 to 54 to 23.8% in those aged 75 and above (Sekher et al., 2025).

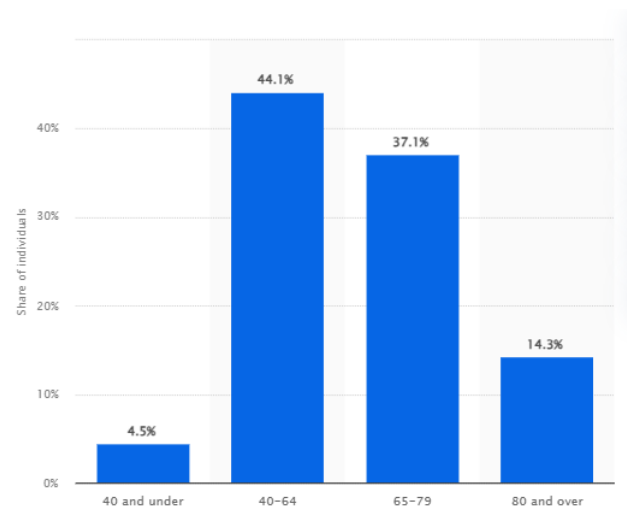


Figure 3: Proportion of Type 2 Diabetes Registrants in England

(Source: Minhas, 2025b)

According to Minhas (2025b), type-2 diabetes is mostly prevalent among persons of 40-64 in the UK, affecting approximately 44.1% of that demographic. Hence, these patterns highlight that there are factors like biological, social and demographic ones, which combinedly influence diabetes among the population of the UK.

Risk Factors

The risk components of diabetes mellitus are multifaceted, which involves detriments like

biological, behavioral and environmental. All the risk factors pertinent to diabetes form 1 and 2 are being evaluated in this section.

Type 1 Diabetes Risk Factors

- Genetic Predisposition
- Autoimmune Response
- Early Life Environmental Exposures

This type of diabetes is generally not curable and can be diagnosed at any age, but mostly prevalent among children and adolescents because this incidence peaks

genetics, environment and immune dysfunction rather than a single point of source highlighting importance of early diagnosis.

Type 2 Diabetes Risk Factors

Unlike type 1, the type 2 diabetes’ risks are related to lifestyle factors, but also contain biological and social determinants, which is usually curable under patient-focused care.

Biologically, key determinants like aging, family history and unnatural weight gain

Biological Factors	Lifestyle Factors	Social Determinants
● Aging ● Obesity ● Family History ● Ethnicity	● Physical Inactivity ● High-Calorie Diets ● Poor Sleep Patterns	● Poverty ● Limited access to healthy food ● Health Inequalities

during adolescence. According to Stene et al (2023), type 1 diabetes results from a combination of environmental and genetic variables as well as autoimmune processes that kill insulin-producing beta cells in the pancreas. However, according to Zorena et al (2022), despite being a genetic predisposition, type 1 diabetes often results from early-life exposures like early introduction to gluten, cow milk and foods with low vitamin D. Therefore, this highlights the multifactorial nature of type 1 diabetes which can stem from shared

(obesity) jointly make people more vulnerable to type-2 diabetes by damaging their glucose metabolism and increasing insulin-resistance (Wondmkun, 2020). When a person is aging, crossing mainly 35, chances of him or her having type-2 diabetes increases, which further accelerates when there is a family history of diabetes (Hao et al., 2022). Therefore, aging alone is not responsible for elevating the risk of diabetes for any middle aged person. Yet, in the opinion of Kolb and Martin (2017) obesity as a result of poor dietary and sedentary

behaviour is another detrimental reason for getting type-2 diabetes, which often works as stronger determinants than genetics and aging. Moreover, ethnicity-related risk factors are seen among people who develop type 2 diabetes specifically. For instance, those of South Asian ancestry are more likely to develop insulin resistance earlier in life for the way their fat is stored in the body especially around the mid-section, called visceral fat (Yaghootkar et al., 2020). Therefore, this type of fat is usually accumulated around vital organs like liver and pancreas, resisting insulin, thereby leading to type-2 diabetes.

Key lifestyle factors like lack of physical activities, consuming high-calorie unprocessed food, frequent smoking and poor sleep all combinedly increase the risk of metabolic dysfunction by causing insulin resistance (Ibrahim, 2025). However, according to Graham and White (2016), the lifestyle behaviour of people is often resulting from economic, environmental or social conditions like poverty, pollution and education level. These factors often create healthcare inequalities, requiring policy-driven prevention. Therefore, when a person does either one or all of the aforementioned activities, they are occasionally forced into

that situation, which ultimately causes type 2 diabetes.

Economic and Social Burden of Diabetes

When people suffer from diabetes of either type 1 or 2, they also experience significant economic and social pressure such as financial strain from medication costs, stigma and strained personal relations (Patel et al., 2023; Ketema Bogale et al., 2023). According to the American Diabetes Association (2018), besides the patients, the healthcare organisations also encounter an increasing cost burden from treating increasing diabetes rates among people. For instance, diabetes cost the UK over £14 billion, with the NHS bearing more than £10 billion of the direct expenses (University of York, 2024). The complete estimated cost structure of the UK regarding diabetes treatment is outlined below.

UK Diabetes Cost Structure (Recent NHS Estimates)

Cost Category	Annual Cost (UK)
Routine Management	£4.4 billion
Indirect Costs	£3.3 billion
Diagnosis and Treatment	4.28 billion (40% of total direct expense)

Total Expense	Direct	£10 billion
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Source (Hex et al., 2024; University of York, 2024)

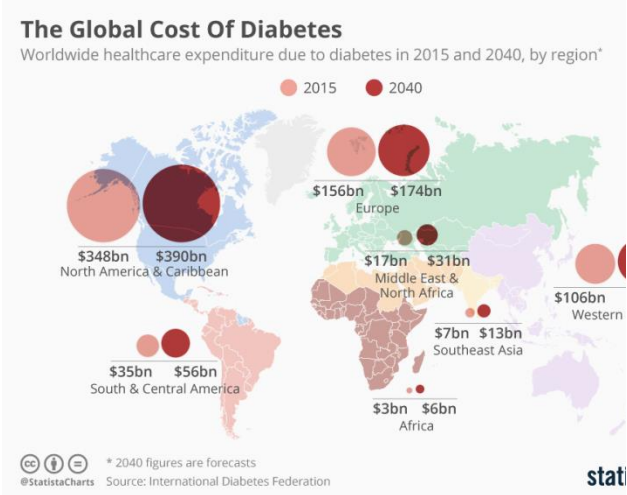


Figure 4: Global Expense of Diabetes

(Source: Armstrong, 2016)

A Statista report indicates that the worldwide expense of diabetes type 1 & 2 can reach up to 803 billion US dollars with North America and the Caribbean accounting for the biggest portion of spending (Armstrong, 2016). Similarly, with the increasing prevalence rate, diabetes is predicted to cost the NHS up to £18 billion by 2035 (Diabetes UK, 2026).

The social burden of diabetes type 1 & 2 is also prevalent worldwide as 77% of affected individuals have been found to experience serious anxiety, 58% experience stigma, while 81% of affected across middle-income countries lack proper care (IDF, 2024; IDF,

2025). Similarly, about 40% of diabetes type 2 patients across the UK are found to be struggling with depression (Diabetes UK, 2026a). Therefore, it is apparent that diabetes is a serious economic and social burden, which is increasing global and national healthcare challenges.

Physical, Psychological and Social implications of Diabetes Mellitus

Both, type 1 and 2 diabetes has been seen to generate tremendous physical, psychological and social consequences for people all over the world.

Physical Implications

- Heart Attack
- Kidney Failure
- Blindness
- Limb amputations

When a person is suffering from diabetes, he/she tends to experience several secondary physical complications, like blindness, kidney damage, heart attack and loss of lower limbs (Melekhovets, 2020; WHO, 2024). Yet, according to Sun et al (2026), preventing these implications became highly complicated across worldwide healthcare continuum, which highlights potential gaps of early detection and long-term coordinated care. For instance, every one in three diabetes type 2 patients in the UK are

experiencing kidney failure due to lack of proper treatment (Kidney Research UK, 2025). Thus, a systematic healthcare limitation is present across the UK and all over the world, diminishing adequate care of diabetes type 1 and 2's physical complications.

Psychological Implications

- Fear of hypoglycemia (Anxiety)
- Depression
- Sleep Disorders

Psychologically, diabetes patients of both type 1 & 2, experience a fear of hypoglycemia, a form of anxiety due to the previous memories of passing out or expensive treatment decisions (Hussain et al., 2025). Consequently, it damages the sleep cycle, reduces the workplace performance and causes diabetes distress.

For instance, Park et al (2024) highlighted approximately 36% of worldwide populations with type 2 diabetes experience diabetes distress.

Social Implications

- Strained Relationships
- Stigma
- Social Isolation

Socially, Khan (2025) showed how diabetes patients socially isolate themselves from others due to a stigma-induced atmosphere, which strain both personal and work-related

relationships. Therefore, it greatly hampers mental comfort and reduces individual productivity.

There are about one in six individuals with type 2 diabetes, and one in four individuals with type-1 diabetes have severe diabetic discomfort across the UK (Diabetes UK, 2026b).

Overall, besides physical complications, psychological and social distresses also jeopardise patient health, by increasing mental illness.

Theories and Models

UK Model: House of Care Model (HoC)

The house of care model is a UK-based healthcare framework developed by the NHS England, which is designed to help UK-based individuals who are suffering from long term conditions like diabetes.



Figure 5: House of Care (HoC) Model

(Source: Reidy et al, 2016)

Following this model, healthcare organisations across the UK embrace care, assist planning, and achieve its obligations to assist the self-management of individuals with numerous long-term diseases (Reidy et al, 2016). Therefore, when it comes to diabetes type 1 and 2, this model is a concrete and established strategy for clinics to help patients learn better self-management.

Standardising Diabetes Care

According to Coulter et al, (2016), HoC employs the metaphor of a house to explain the elements that must be in a place to create coordinated customised care planning for the persons suffering from long-term conditions like diabetes. Following this concept, National Institute for Health and Care Excellence (NICE) has partnered with the British Diabetic Association, to jointly adopt specific clinical guidelines like Real-time continuous glucose monitoring (rtCGM), insulin regimens, and individualised care planning (Diabetes UK, 2026c). This helps them to collaboratively cure type 1 and 2 diabetes across England and Wales .

Patient-Centred Decision-Making

A major strength of HoC lies in its collaborative philosophy, as this method empowers individuals to express their own

needs and priorities to caregivers in terms of adequate care for their conditions through collaborative decision-making (Alliance Scotland, 2026). By utilising this strength, NHS England has partnered with Diabetes UK to start the ‘NHS Type 2 Diabetes Path to Remission Programme’. Under this programme, both the settings individually listen and cure patients' concerns, offer them 3 month diet plans and other lifestyle tips to lose weight and improve blood sugar levels (England NHS, 2026).

Workforce and Resource Constraints

However, according to Coulter et al, (2016), significant implementation challenges arise in integrating HoC into care, which includes resource constraints, lack of workforce training and technological advancements. These challenges are reflected within the UK-based healthcare settings, as the NHS lacks the trained staff and technological treatment tools for diabetes like flash glucose monitoring (Health Awareness, 2026). Despite the drawbacks, effective implementation of HoC through coordinated investment and workforce training can subsequently improve the type 1 and 2 diabetes outcomes.

International Model: Chronic Care Model (CCM)

The CCM is a framework essential for managing chronic diseases among patients by directing improvement of care through the combination of six integrated components (Grudniewicz et al., 2023).

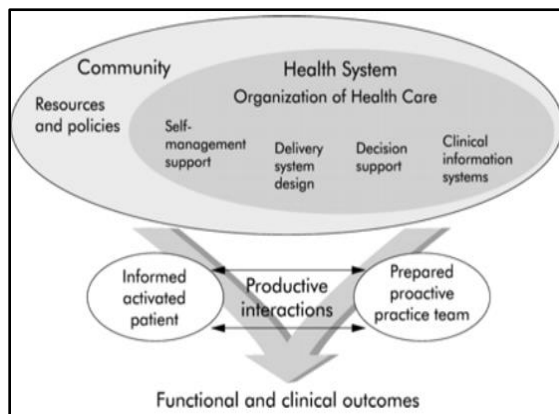


Figure 6: CCM by Wagner

(Source: Adopted from Study Materials)

Self-Management and Decision Support

According to Baptista et al (2016), the CCM helps healthcare providers in enhancing and optimising self-management and decision-support [two of the six interconnected components] through structured and proactive care management. Based on this principle, American Diabetes Association (ADA) promotes Diabetes Self-Management Education and Support (DSMES), offering treatment algorithms and risk-stratification tools to improve health outcomes and decision-making of type-2 diabetes patients (ADA, 2026).

Delivery System Design and Clinical Information Systems

These two elements within the CCM framework facilitates team-based care through robust data infrastructure, proactive follow-up and electronic health monitoring, which fosters innovation (Grudniewicz et al., 2023). Considering this idea, globally health care organisations support glycaemic management by using multidisciplinary team-based approaches like lifestyle counselling, complication screening while using integrated electronic registries (Bizimana Rukundo, 2025). This enhances patients' quality of life while mitigating complications from diabetes type 1 and 2.

Community and Health System Organisation

Lastly, these components of CCM model help healthcare organisations strengthen prevention of chronic illness among patients by emphasising community resource and service access, mobilisation, governance and policy alignment (Longhini et al., 2022). This principle is followed by the worldwide healthcare sector including the International Diabetes Federation who support national capacity building of clinics in proactively treating type-2 diabetes through clinical practice recommendations on diagnosis, glycaemic targets and complication

screening (IDF, 2025). All these combinedly improve the health outcomes of type-2 diabetes patients worldwide.

UK Policies and Strategic Frameworks

Numerous UK policies and frameworks focus on managing and preventing diabetes, which are outlined below.

Key National Strategies

- Integrated Care Systems (ICS): design framework
- NHS Long Term Plan

ICS: design framework

In the UK, the system for providing diabetes care for both type 1 and 2 is often fragmented with the involvement of numerous providers in primary, community and specialist services, which creates complexity (Tan et al., 2021). To refine the fragmented diabetes care services, ICS framework has been introduced in 2021. Under this framework, NHS collaborates with local healthcare authorities for enhancing diabetes patients' health and well-being, assisting them in leading more self-reliant lives, while reducing health disparities (NHS England, 2021).

NHS Long Term Plan

The long-awaited release of the NHS Long Term Plan in January 2019 offered new opportunities of treating diabetes through

integrated pathways, multidisciplinary teams and wider access to technologies such as Flash Libre glucose monitoring (Practice Nursing, 2019). With these prioritised areas, the prevention and health education for type-2 diabetes became simpler to UK-based healthcare organisations. Although issues like workforce shortages and regional inequalities are present, still this policy is allowing clinics to improve treatment quality and outcomes of type 2 diabetes patients all over Europe (England NHS, 2026a).

Management and Evidence-based Treatments

Type 1 Diabetes Management

- Insulin Injection
- Continuous Glucose Monitoring
- Structured Education Programmes

Worldwide healthcare organisations like NHS and NICE have centred their management of type-1 diabetes around lifelong insulin replacement through daily multiple injections and insulin pumps to replicate physiologic basal insulin production (Medtronic, 2026).

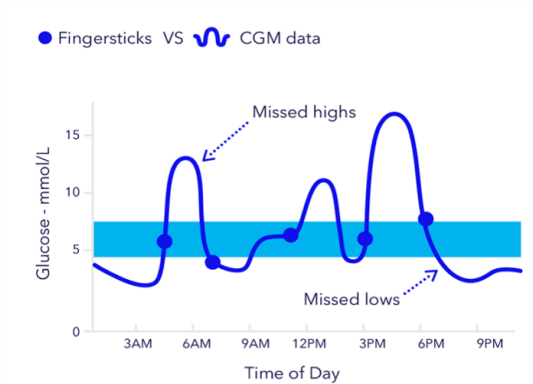


Figure 7: Frequency of daily insulin injections

(Source: Medtronic, 2026)

This helps type 1 diabetes patients to maintain stable blood sugar levels throughout the day and night. Besides daily injections, Continuous Glucose Monitoring (CGM) is another effective approach that allows clinics to track glucose levels in real-time, which reduces the risk of hypoglycaemia and improves HbA1c outcomes of type-1 diabetes patients (Dicembrini et al., 2021). Although the equitable access of these services are inconsistent worldwide particularly across lower-to-middle income countries, still joint education programmes like Diabetes UK-endorsed DAFNE is educating type 1 diabetes patients for better self-management (Litchfield et al., 2023).

Type 2 Diabetes Management

- Lifestyle Modification
- Oral Medicine (e.g., metformin)

- Combination therapy
- Insulin therapy if required

In order to manage type-2 diabetes, healthcare settings worldwide significantly prioritise life-style modifications, which includes weight reduction, dietary control and physical activities of patients (Patel et al., 2024).

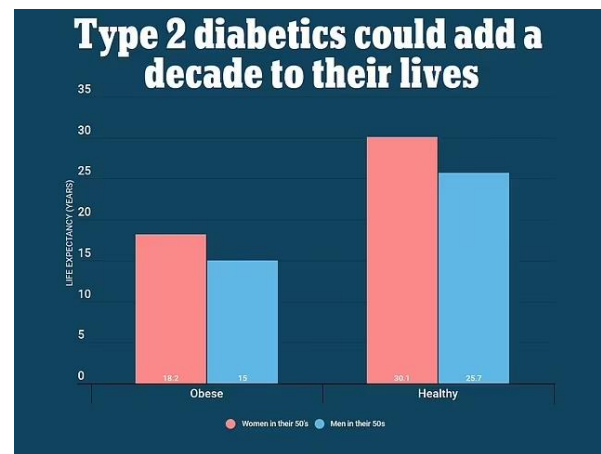


Figure 8: Lifestyle modifications improves life expectancy

(Source: Andrews, 2022)

All the lifestyle-related changes help in inducing remission in early stages and increase life expectancy of type-2 diabetes patients (Andrews, 2022). When these precautions failed to affect the patients, clinicians usually started first-line pharmacotherapy by giving metformin as oral medication, which improves insulin sensitivity and cardiovascular outcomes (Bailey, 2024). However, glycaemic control within type-2 diabetes patients often

deteriorates, which healthcare providers manage through combination therapy or insulin initiation therapy. This lowers the risk of organ damage and prevents microvascular complications (Poonoosamy et al., 2023). Although the combination therapy increases cost burden over patients, it is advantageous for long-term health benefits.

Future Directions and Potential Solutions

To reduce diabetes, burden the below suggested solutions can deliberately help global health organisations.

Strengthen Prevention: Strengthening the prevention of diabetes mellitus, particularly type-2 is fundamental by utilising risk screening, obesity control and community-based lifestyle intervention, which can lower the burden of worldwide diabetes rates (Shirvani et al., 2021). Although these initiatives can encounter structural barriers such as limited economic and policy enforcement, these can be addressed through equitable resource allocation using local partnership (Saleheen and Barela, 2025).

Digital Health Innovations: Besides the collaborative approaches, worldwide health organisations should consistently invest in health innovations, such as telemedicine,

wearable glucose monitoring and AI-driven decision-making tools to improve clinical oversight and health outcomes of both type 1 and 2 diabetes patients (Lucky et al., 2025). Yet, data privacy issues can occur due to increasing cyber-attacks, which can be mitigated through establishing robust cyber security frameworks.

Conclusion

In summary, the booklet clearly highlights diabetes type 1 and 2 as a serious long-term condition for people all over the world, which require proactive preventive measures and ongoing self-management assistance. Driven by the complex biological, behavioural and social determinants, this illness creates significant pressure over both patients and clinicians. Even though the house of care model and chronic care model deliberately supports renowned health organisations like NHS and NICE to work collaboratively and address diabetes still gaps persist in patient empowerment and coordinated care delivery. To bridge the gaps and lower the burdens, the organisations should strengthen early prevention and consider digital innovations.

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