

Student Name: Mojisola Abatti

ID: 2515877

Lecturers name: Mohammed Aliyu

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Introduction

Type 1 diabetes is an autoimmune condition where the pancreas' insulin-producing beta cells are destroyed and insulin is no longer made, meaning that people need insulin injections or infusions for life (National Institute for Health and Care Excellence, 2022). It is caused by a combination of an inherited genetic risk and an environmental trigger, unlike type 2 diabetes which is caused by diet, body weight, and lifestyle (Diabetes UK, 2025). The four Ts are used to promote the warning signs in the United Kingdom, which include toilet, thirst, tiredness and thinner, often with blurred vision and, if diagnosis is delayed, the medical emergency of diabetic ketoacidosis. In 2025, some 9.5 million people globally were living with the condition, 513,000 new cases were diagnosed and 174,000 people died prematurely (Ogle et al., 2025). In the United Kingdom some 376,000 of the 4.7 million people diagnosed with diabetes have type 1 (Diabetes UK, 2025).

Approaches Used to Measure and Monitor the Disease

Disease in a community is measured through three indicators, namely incidence, prevalence and mortality, and each answers a different question. Incidence measures new cases that are occurring in a time interval and reveals the rising or declining trend of the problem, for example, 513,000 cases were newly diagnosed globally in 2025. Prevalence is the total number of all cases, and thus reflects the demand on services: 9.5 million people worldwide and approximately 376,000 in the United Kingdom. Mortality records deaths, with 174,000 premature deaths in the same year (Ogle et al., 2025; Diabetes UK, 2025). Compulsory national clinical audit is the key mechanism for its production in the United Kingdom. The National Diabetes Audit collects data from GP practices and diabetes specialist services across England and Wales on processes of care and targets for diabetes treatment that allow for benchmarking of quality between services (NHS England, 2025). In 2024/25, 35,801 children and young people in England, Wales and Jersey were receiving specialist diabetes care which is a 29 per cent rise over 10 years (Royal College of Paediatrics and Child Health, 2026).

Furthermore, this type of audit is effective because it is close to full coverage for specialist services, but it only counts those already in the system, meaning that undiagnosed or disengaged people are not included. In countries where there are no national registries, incidence and prevalence are modelled instead. The International Diabetes Federation T1D Index combines registry data, mortality estimates and demographic modelling to produce global figures (Ogle et al., 2025; International Diabetes Federation, 2025). This is pragmatic,

but estimates for countries with no registries are fraught with uncertainty and global comparisons should be treated with caution.

Monitoring is also employed to check fairness not only in total but by deprivation too as audits report by deprivation and it is important that this is watched if services are to be planned and funded fairly. Glycated haemoglobin is still the primary indicator of control for the individual and 79 per cent of children in 2023/24 used continuous glucose monitoring (Royal College of Paediatrics and Child Health, 2025). Screening for autoantibodies is a third and emerging approach (Quinn et al., 2026).

How the Disease is Controlled

Control is described through prevention, protection and promotion. Primary prevention, which stops a disease occurring, is not yet possible because the causes are not behavioural. As such, it focuses on early diagnosis and minimising complications, with the key to both being life-long insulin replacement tailored to the individual's diet (National Institute for Health and Care Excellence, 2022).

Continuous glucose monitoring is recommended for all adults with type 1 diabetes, and hybrid closed loop systems (which connect a sensor to an insulin pump via an algorithm) are recommended for adults with glucose levels above target or who experience disabling hypoglycaemia despite optimal management, and for all children and young people (National Institute for Health and Care Excellence, 2022, 2023). NHS England has agreed a five-year rollout, where they will fund 75 per cent of the incremental cost and integrated care boards will be required to show fair access (NHS England, 2024). This has a measurable impact with the national median glycated haemoglobin (HbA1c) for children dropping to its lowest level in 2024/25 (Royal College of Paediatrics and Child Health, 2026).

Other measures are used every day. Insulin is supplied free in the United Kingdom through prescription charge exemption, which removes cost as a barrier to treatment. People are taught to count carbohydrate, to recognise and treat low glucose and to adjust their own doses, and annual checks of the eyes, kidneys, feet, and blood pressure detect complications early enough to treat. Protection is provided by access to a safe supply of insulin and by school, workplace, and driving regulations that ensure safety of persons with diabetes. Promotion is from awareness campaigns that educate parents, teachers, and health staff on the four Ts, as 22 per cent of children were already seriously ill with diabetic ketoacidosis at the time of diagnosis in 2024/25 (Royal College of Paediatrics and Child Health, 2026).

Consequences of the Illness for People in the Community

The consequences extend well beyond blood glucose. Diabetic ketoacidosis and severe hypoglycaemia are life threatening and result in emergency admissions, and over time retinopathy, nephropathy, neuropathy, and cardiovascular disease impair function and shorten life. Complications are the main drivers of the economic burden, with diabetes costing the NHS an estimated £10.7 billion a year, 60 per cent of which is due to complications (Diabetes UK, 2025). The psychological burden should also be taken into account. In a study of 832 adults with type 1 diabetes, 38.3 per cent participants had clinically significant diabetes distress and 27.8 per cent had depression symptoms (AlOzairi et al., 2024). This is important both ethically and practically, since distress decreases participation in self-management, which in turn decreases the physical outcomes that are measured for services.

Consequences are not equally shared, and this is where community level analysis is necessary. The mean glycated haemoglobin (HbA1C) for children in the most deprived quintile in England and Wales was 66.6 mmol/mol, compared with 60.0 mmol/mol in the least deprived quintile, and the mean for Black children was 70.8 mmol/mol, compared with 63.1 mmol/mol for White children, with lower uptake of glucose monitoring technology in the same groups (Royal College of Paediatrics and Child Health, 2025). These gaps have been slightly reduced in 2024/25 but remain (Royal College of Paediatrics and Child Health, 2026). It also affects everyday life, including school, work, driving, family relationships, and carers of children with type 1 diabetes have a constant supervisory burden. Inequality is not just local, it is also global, as in 2025, a considerable proportion of the 174,000 premature deaths were due to late diagnosis or interrupted access to insulin, and survival is heavily dependent on where a person lives (Ogle et al., 2025).

Health and Social Care Support Services Required

A coordinated multidisciplinary team is required to meet these needs, not any one service. The specialist diabetes team comprising of a consultant, diabetes specialist nurses, dietitian, and psychologist) adjust insulin, offer structured education and technology support, and the primary care team conducts the annual review and the recall systems that keep people engaged with the services. The surveillance arm of the program involves retinal screening, podiatry, and renal monitoring for early detection of complications.

Several practical steps follow for professionals. First, psychological provision should be integrated into diabetes teams and not referred out, as distress is common as described above. Second, services should audit technology uptake by ethnicity and deprivation and proactively offer, as passive offers will replicate the inequalities found in national audit. Thirdly,

schools are required to have individual healthcare plans and trained staff, as set out in section 100 of the Children and Families Act 2014, and employers must make reasonable adjustments under the Equality Act 2010. Fourth, transition to adult services should be planned for and not administrative as early adult disengagement is a known risk factor. Lastly, primary care and urgent care providers must be continually reminded of the four Ts, as over 20% of children continue to arrive in ketoacidosis and a quick capillary glucose test for any child with these symptoms is a cheap and easy way to prevent a preventable emergency.

Social care and community services are important for older people, where hypoglycaemia is a major risk of falling and where there may be domiciliary carers who administer insulin. Voluntary sector peer support complements clinical support because it can reach where clinical appointments cannot, addressing the isolation that people often feel, and training domiciliary staff in insulin administration and hypoglycaemia recognition enables people to stay safely at home.

Conclusion

Type 1 diabetes is a chronic autoimmune disease that is estimated to affect 9.5 million people globally and approximately 376,000 people in the United Kingdom, and the number of people with the disease is increasing. This report has showed that measurement can be done at two levels: national audit and modelling describe populations, while glycated haemoglobin and continuous glucose monitoring describe individuals, and that each has limitations that should dampen the confidence in the numbers. Today, control is achieved through insulin, structured education and rapidly evolving technology, and the median glycated haemoglobin levels in children are declining. However, the outcomes are socially patterned, with deprivation and ethnicity being strongly associated with poorer outcomes. The focus of services should therefore not be simply on further uptake of technology, but on the intentional addressing of unequal access to technology, for a treatment that benefits only those who are already benefiting from good treatment will further widen the very gaps that national audit is designed to reveal.

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