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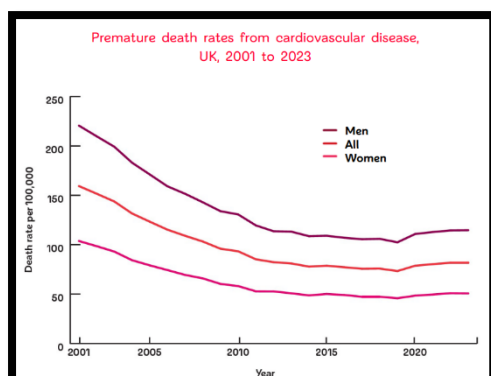
Blog 1: Cardiovascular Disease (CVD) and an Existing NHS-Approved Intervention

Introduction

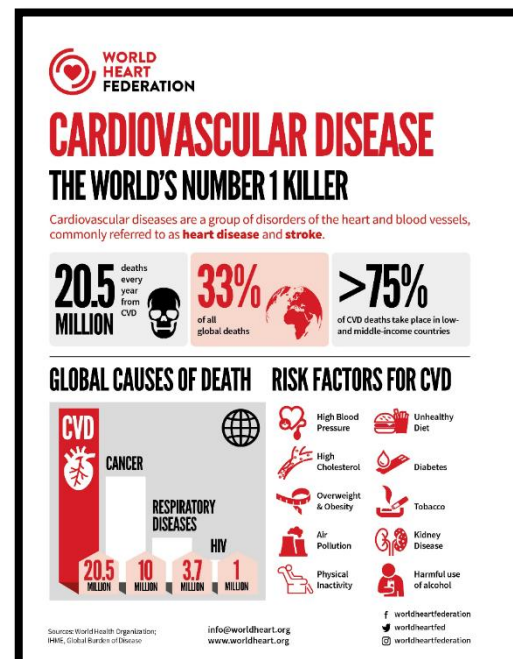
Cardiovascular Disease (CVD) is a big health concern in the world that affects millions of individuals worldwide and results in death. CVD is a widely spread disease that is related to the heart and blood vessels (Tada, Takamura and Kawashiri, 2022). It leads to millions of deaths every year, mainly from stroke and heart attacks. It does not only affect the health of the people but also places a major economic burden in terms of the long-term treatment, hospitalisation, and loss of productivity.

Chosen Health Problem

According to the World Health Organization (2025), in 2022, globally, around 19.8 million people died because of CVD. It represents around 32% of global deaths. Early diagnosis and frequent follow-up are hence essential to minimise mortality and enhance life. According to the British Heart Foundation (2025) in the United Kingdom (UK), almost 7.6 million people have CVD, of whom almost 4 million were male and 3.6 million were female.



Death Rates in the UK
(BHF, 2025)



Cardiovascular Disease Infographic

(World Heart Federation [WHF], 2025)

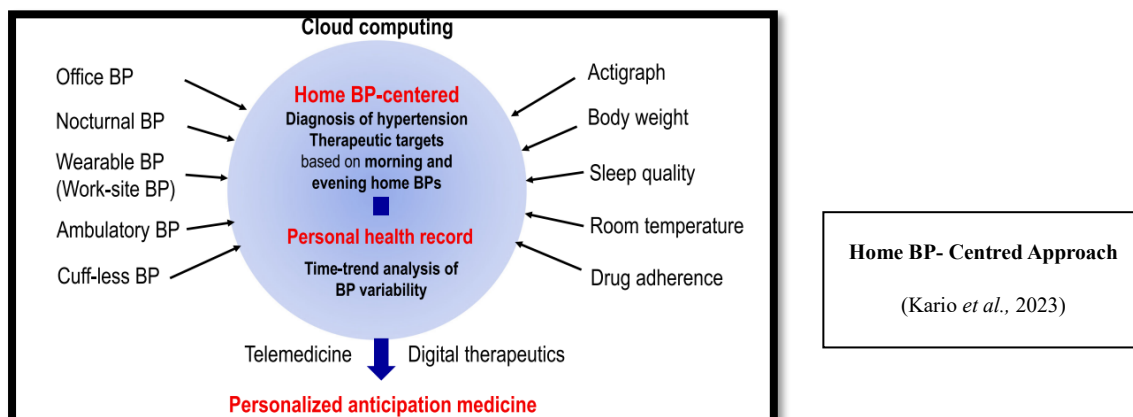
Compared to global statistics, the UK has better care access. Still, it faces challenges like lifestyle-related risks and an ageing population. However, there are still difficulties, such as lifestyle-related risks, ageing population, unequal access of healthcare.

Chosen NHS Digital Health Intervention and Use of Technology

According to the England National Health Service (2025), Home Blood Pressure Monitoring (HBPM) is a technology that helps individuals to check their blood pressure (BP) at home. It has similar technology to ambulatory blood pressure monitoring (ABPM) (Kario, 2021).

Evaluation of Digital Health Intervention

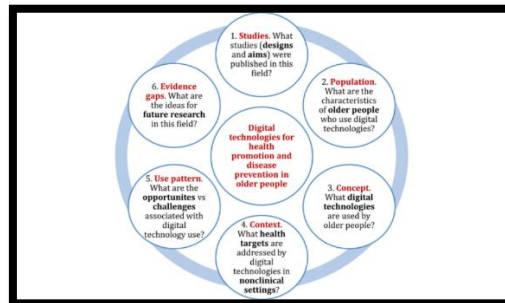
Recent digital technologies allow HBPM to gather and analyse data over time. It includes physical activities and environmental factors (Kario *et al.*, 2023). This system also helps to identify patterns and possible risks at an early stage. In a study published in PubMed Central in 2025, it was found that 42.3% of people who performed self-monitoring of blood pressure (SMBP) monitored their blood pressure daily, and 57.7% monitored their blood pressure at least once a week (Giang *et al.* 2025). Most of them (80.2) used digital devices.



High blood pressure (BP) has an impact on about 10% of pregnancies globally, and nearly 50% of these females develop pre-eclampsia. Blood pressure self-monitoring permits pregnant women to make numerous measurements, providing an improved estimation of the underlying blood pressure (Mary and Owen, 2020).

The Use of Digital Technology in Promoting Health

Digital tools in the healthcare industry help in health promotion as well as help to detect diseases early (De Santis *et al.*, 2023). Tools like HBPM help in promoting health awareness and encourage people about healthcare by personalising the care system.



Digital Technologies for Health Promotion

(De Santis *et al.*, 2023)

Advantages and Disadvantages of the Intervention

Advantages: The interventions, like HBPM, improve access to care, especially for older people (De Santis *et al.*, 2023). It also supports early detection of risk and saves time by reducing clinical visits.

Disadvantages: Digital systems like HBPM also pose risks, such as data privacy and data security (Parati *et al.* 2023). Some people also face challenges in data sharing and device setup.

Solutions

To further improve the HBPM system, there is a need for training where users can easily understand its usage. Also, making the device accessible and affordable helps to reduce inequalities and overall improve outcomes.

Conclusion

HBPM is an important tool to manage the worldwide CVD issue. In the aspect of digital health, HBPM shows how technology can help to mitigate diseases and improve public health. Through digital technology, HBPM enables patients to be in control of their health resulting in improved outcomes and savings in the cost of healthcare.

Reference List

Blog 1

British Heart Foundation [BHF] (2025) *UK Cardiovascular Disease Factsheet*. Available at: <https://www.bhf.org.uk/-/media/files/for-professionals/research/heart-statistics/bhf-cvd-statistics-uk-factsheet.pdf> (Accessed: 11 October 2025).

De Santis, K.K., Mergenthal, L., Christianson, L., Busskamp, A., Vonstein, C. and Zeeb, H. (2023) 'Digital technologies for health promotion and disease prevention in older people: scoping review', *Journal of medical Internet research*, 25, p.e43542. Available at: <https://doi.org/10.2196/43542>

England National Health Service [NHS] (2025) *Home blood pressure monitoring*. Available at: <https://www.england.nhs.uk/ourwork/clinical-policy/cvd/home-blood-pressure-monitoring/> (Accessed: 11 October 2025).

Giang, N.H., Lan, N.T.P., Anh, L.T.K., Plancikova, D., Rusnakova, V., Thang, N.T. and Koot, J.A. (2025) 'Factors influencing adoption of self-monitoring of blood pressure among hypertensive patients in primary healthcare in Vietnam: a cross-sectional facility-based study.' *BMC Primary Care*, 26(1), p.180. <https://link.springer.com/article/10.1186/s12875-025-02871-5>

Kario, K. (2021) 'Home blood pressure monitoring: current status and new developments', *American journal of hypertension*, 34(8), pp.783-794. Available at: <https://doi.org/10.1093/ajh/hpab017>

Kario, K., Tomitani, N., Wang, T.D., Park, S., Li, Y., Shin, J., Tsoi, K., Chen, C.H., Cheng, H.M., Siddique, S. and Turana, Y. (2023) 'Home blood pressure-centered approach—from digital health to medical practice: HOPE Asia Network consensus statement 2023', *Hypertension Research*, 46(12), pp.2561-2574. Available at: <https://doi.org/10.1038/s41440-023-01397-6>

Mary, N. and Owen, P. (2020) *Home Blood Pressure and Urinalysis Monitoring. V3*. Available at: <https://www.perinatalnetwork.nhs.scot/wp-content/uploads/2024/06/2024-06-26-HomeMonitoringStaffGuidance-full.pdf> (Accessed: 30 October 2025).

Parati, G., Stergiou, G.S., Bilo, G., Kollias, A., Pengo, M., Ochoa, J.E., Agarwal, R., Asayama, K., Asmar, R., Burnier, M. and De La Sierra, A. (2021) 'Home blood pressure monitoring: methodology, clinical relevance and practical application: a 2021 position paper by the Working Group on Blood Pressure Monitoring and Cardiovascular Variability of the European Society of Hypertension.' *Journal of Hypertension*, 39(9), pp.1742-1767.

https://journals.lww.com/jhypertension/fulltext/2021/09000/Home_blood_pressure_monitoring_methodology..3.aspx

Tada, H., Takamura, M. and Kawashiri, M.A. (2022) 'The effect of diet on cardiovascular disease, heart disease, and blood vessels.' *Nutrients*, 14(2), p.246.

<https://doi.org/10.3390/nu14020246>

Townsend, N., Kazakiewicz, D., Lucy Wright, F., Timmis, A., Huculeci, R., Torbica, A., Gale, C.P., Achenbach, S., Weidinger, F. and Vardas, P. (2022) 'Epidemiology of cardiovascular disease in Europe', *Nature Reviews Cardiology*, 19(2), pp.133-143.

Available at: <https://doi.org/10.1038/s41569-021-00607-3>

World Health Organization [WHO] (2025) *Cardiovascular diseases (CVDs)*. Available at: [https://www.who.int/news-room/fact-sheets/detail/cardiovascular-diseases-\(cvds\)](https://www.who.int/news-room/fact-sheets/detail/cardiovascular-diseases-(cvds)) (Accessed: 11 October 2025).

World Heart Federation [WHF] (2025) *Cardiovascular Disease Infographic*. Available at: <https://world-heart-federation.org/resource/cardiovascular-disease-infographic/> (Accessed: 11 October 2025).

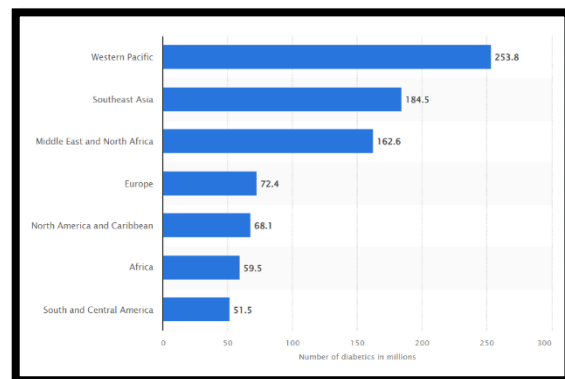
Blog 2: Type 2 diabetes (T2D) and a New Intervention

Introduction

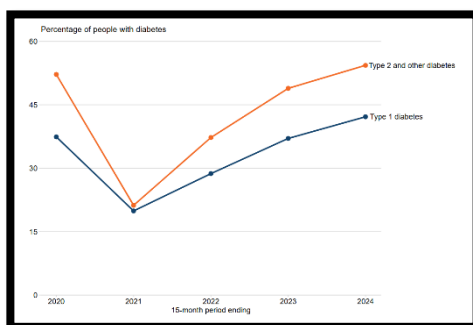
Type 2 diabetes (T2D) is now a growing issue worldwide and affects millions of people (Reed, Bain and Kanamarlapudi, 2021). This blog includes an overview of T2D, current world and UK statistics and introduces a new mobile application named **“Glucobloom”** to help and support diabetes management. T2D is a heterogeneous disease and can affect the kidneys, heart, eyes and nerves (Jwad and Al-Fatlawi, 2022).

Chosen Health Problem

This type of diabetes is commonly seen in older adults. In addition, now obesity issues in young adults are also resulting in an increase in T2D cases (Mayo Clinic, 2025). Worldwide, the number of diabetic people is increasing, and it is estimated that it will increase in all regions until 2050 (Elflein, 2025). According to the World Health Organization (2024), from 1990 to 2022, the number of people with diabetes increased from 200 million to 830 million. According to the Government of the UK (2025), in England, almost 7.0% of people aged 17 had T2D in March 2024, which is an increase from last year, 6.8% in 2023.



The Number of Diabetes Cases Worldwide
(Elflein, 2025)



Percentage of People with Diabetes
(Gov. UK, 2025)

In the world, many countries are struggling with access to diabetes care. Although the UK has better service with the NHS and education, the number of people with diabetes is increasing.

Consequences of Not Addressing T2D

Unless T2D is controlled, it may cause severe health issues including kidney failure, heart diseases, neuropathy and loss of vision. Further, uncontrolled diabetes leads to

higher expenditures of healthcare and low productivity because of absenteeism caused by illness. The occurrence of complications and the financial load will keep increasing without preventive solutions and digital health interventions.

Gluco Bloom - a Digital Health Intervention and Use of Technology

According to the England National Health Service (2025), the **Healthier You programme** aims to help people prevent T2D through both online and offline methods. **Gluco Bloom** is a new online mobile application which will give individuals Artificial Intelligence (AI) -based alerts, personalised plans, including a meal plan with cultural food swaps.

Evaluation of Digital Health Intervention

For effective use of digital tools, people need to engage with those interventions regularly (Perski and Short, 2021). This new system will help individuals to learn and change their habits with a healthy plan.

The Use of Digital Technology in Promoting Health

There is a growth in mobile application usage for delivering interventions to manage disease and promote health (Iribarren *et al.*, 2021). They offer flexibility, privacy, and real-time feedback.

Advantages and Disadvantages of the Gluco Bloom

Advantages: Provide personalised support and help people to manage their health (Jimenez *et al.* 2023).

Disadvantages: Privacy and data security will be a concern for using AI-powered digital technology (Abolaji and Akinwande, 2024).

Solutions

To improve access to the **Gluco Bloom** applications, there is a need for strong data protection, and it also needs to be promoted in clinics.

Conclusion

Digital health interventions, such as **Gluco Bloom**, can help people by giving support for managing health and improving quality of life. Together with NHS programmes,

these interventions can be used to prevent T2D and enhance the quality of life. These digital tools need to be maximised with the help of continuous improvements, user support, and data security.

Reference List

Blog 2

Abolaji, E.O. and Akinwande, O.T. (2024) 'AI powered privacy protection: A survey of current state and future directions.' *World Journal of Advanced Research and Reviews*, 23(3), pp.2687-2696. [https://www.researchgate.net/profile/Oladayo-Akinwande-](https://www.researchgate.net/profile/Oladayo-Akinwande-3/publication/384463234_AI_powered_privacy_protection_A_survey_of_current_state_and_future_directions/links/66fbacbf9e6e82486ffc3b47/AI-powered-privacy-protection-A-survey-of-current-state-and-future-directions.pdf)

[3/publication/384463234_AI_powered_privacy_protection_A_survey_of_current_state_and_future_directions/links/66fbacbf9e6e82486ffc3b47/AI-powered-privacy-protection-A-survey-of-current-state-and-future-directions.pdf](https://www.researchgate.net/profile/Oladayo-Akinwande-3/publication/384463234_AI_powered_privacy_protection_A_survey_of_current_state_and_future_directions/links/66fbacbf9e6e82486ffc3b47/AI-powered-privacy-protection-A-survey-of-current-state-and-future-directions.pdf)

Elflein, J. (2025) *Projected number of diabetics worldwide in 2050, by region (in millions)*. Available at: https://www.statista.com/statistics/241804/projected-number-of-diabetics-worldwide-by-region/?srsltid=AfmBOoreNKIPWTxKhAONFcEdyqYKj_xJsJisk75g2K356t24DjqykEPP (Accessed: 14 October 2025).

England National Health Service [England NHS] (2025) *NHS Diabetes Prevention Programme (NHS DPP)*. Available at: <https://www.england.nhs.uk/diabetes/diabetes-prevention/> (Accessed: 14 October 2025).

Government of the UK [Gov.UK] (2025) *Diabetes profile: statistical commentary, March 2025*. Available at: <https://www.gov.uk/government/statistics/diabetes-profile-update-march-2025/diabetes-profile-statistical-commentary-march-2025> (Accessed: 14 October 2025).

Iribarren, S.J., Akande, T.O., Kamp, K.J., Barry, D., Kader, Y.G. and Suelzer, E. (2021) 'Effectiveness of mobile apps to promote health and manage disease: systematic review and meta-analysis of randomized controlled trials', *JMIR mHealth and uHealth*, 9(1), p.e21563. Available at: <https://doi.org/10.2196/21563>

Jimenez, J., Del Rio, A., Berman, A.N. and Grande, M. (2023, July) 'Personalizing digital health: adapting health technology systems to meet the needs of different older populations.' In *Healthcare* (Vol. 11, No. 15, p. 2140). MDPI. <https://doi.org/10.3390/healthcare11152140>

Jwad, S.M. and Al-Fatlawi, H.Y. (2022) 'Types of diabetes and their effect on the immune system.' *J Adv Pharm Pract*, 4(1), pp.21-30.

https://www.researchgate.net/profile/Drsaher-Jawd-2/publication/361379433_Types_of_Diabetes_and_their_Effect_on_the_Immune_System/links/62acf4d923f3283e3af0849d/Types-of-Diabetes-and-their-Effect-on-the-Immune-System.pdf

Mayo Clinic (2025) *Type 2 diabetes*. Available at: <https://www.mayoclinic.org/diseases-conditions/type-2-diabetes/symptoms-causes/syc-20351193> (Accessed: 14 October 2025).

Perski, O. and Short, C.E. (2021) 'Acceptability of digital health interventions: embracing the complexity', *Translational behavioral medicine*, 11(7), pp.1473-1480. Available at: <https://doi.org/10.1093/tbm/ibab048>

Reed, J., Bain, S. and Kanamarlapudi, V. (2021) 'A review of current trends with type 2 diabetes epidemiology, aetiology, pathogenesis, treatments and future perspectives.' *Diabetes, Metabolic Syndrome and Obesity*, pp.3567-3602. <https://doi.org/10.2147/DMSO.S319895>

Suzuki, K., Hatzikotoulas, K., Southam, L., Taylor, H.J., Yin, X., Lorenz, K.M., Mandla, R., Huerta-Chagoya, A., Melloni, G.E., Kanoni, S. and Rayner, N.W. (2024) 'Genetic drivers of heterogeneity in type 2 diabetes pathophysiology', *Nature*, 627(8003), pp.347-357. Available at: <https://doi.org/10.1038/s41586-024-07019-6>

World Health Organization [WHO] (2024) *Diabetes*. Available at: <https://www.who.int/news-room/fact-sheets/detail/diabetes> (Accessed: 14 October 2025).