



Student Name: Pratham Ravindrakumar Luhar

Student ID: 2426580

Lecturer Name: Dr. Ping Wu

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**Assignment Title: Digital Health Promotion: A Critical Analysis of AI
Technologies and Designed Interventions in Public Health**

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Blog 1: AI in Cybersecurity for NHS Digital Health Promotion

Public Health Concern: Cybersecurity Threats in NHS

A growing public health concern, which has been significantly showcased in the NHS, is digital health adoption and security breaches. This challenge has been increasing rapidly in the growing market. According to a report, approximately 30 million users who access its digital services through an NHS app by 2023 are completely reliant on significant digital platforms (NHS England, 2026). Significantly, this cybersecurity breach is an incident not only disturbing these services but also compromising patient data that is quite sensitive to the delayed treatments. It also directly impacts the overall health outcomes of the patients. The significant implications of this challenge are a reduction in patient engagement with digital health interventions, high cost of healthcare, inequalities, and loss of trust and reliance on the healthcare department.

The AI oversight gap

New global research from IBM and Ponemon Institute reveals how AI is greatly outpacing security and governance in favor of do-it-now adoption. The findings show that ungoverned AI systems are more likely to be breached and more costly when they are.

4.4M

The global average cost of a data breach, in USD, a 9% decrease over last year—driven by faster identification and containment.

97%

Share of organizations that reported an AI-related security incident and lacked proper AI access controls.

63%

Share of organizations that lacked AI governance policies to manage AI or prevent the proliferation of shadow AI.

1.9M

Cost savings, in USD, from extensive use of AI in security, compared to organizations that didn't use these solutions.

Figure 1: AI in Healthcare

(Source: IBM, 2026)

Digital Technology: AI in Cybersecurity

The most significant tool that helps in enhancing security within the system of NHS Digital is artificial intelligence. These tools help in detecting unauthorised access, preventing unusual patterns and also responding to automated threats. This not only helps in protecting the digital health, promotion and platforms, but also helps in enhancing consultation on an online basis, vaccination, booking and monitoring the system remotely (Imam *et al.*, 2025).

Evidence and Impact

As stated by IBM in its report in 2025, it was seen that the global data breach cost around \$4.4 million; on the other hand, using AI helps in saving up to \$1.9 million. This adoption of AI technology helps in faster reduction, detection and active response (IBM, 2026). According to the report, the organisation showcases 97% AI related security incidents which were under

proper and active control. It also highlighted the 63% of the covenants lack a policy, which was a significant AI oversight gap.

Critical Discussion: Advantages and Disadvantages

According to the overall critical evaluation, it could be stated that AI not only helps in improving efficiency but also provides real-time detection of threats. It also helps and maintains resilience within the system, supporting digital help promotion continuously. Moreover, it also helps me overcome challenges by implementing High cost, a rhythm bias and a lack of governance. This showcases the risk of shadow AI. Moreover, exclusion of digital technology is a major issue that most of the UK households face, by 7% that lack internet access, whereas on the other hand, 10 million UK users lack digital skills. (NHS England, 2026)

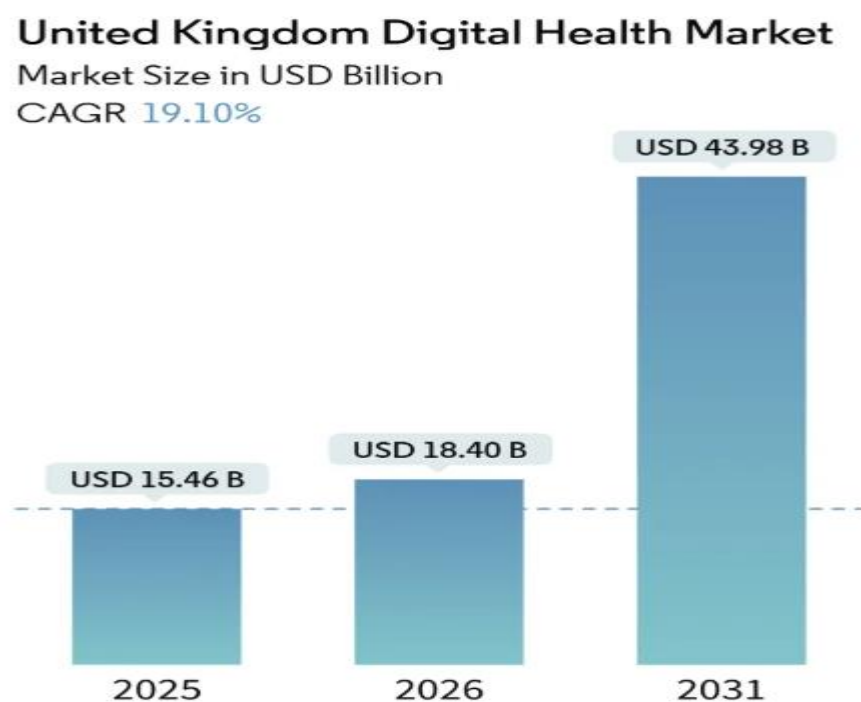


Figure 2: UK digital helathcare market

(Source: Mordor Inetelligence, 2026)

Consequences and Complications

The consequences and complications of the cybersecurity breaches result in severe service disruption, the broadening of health inequalities and harm to the patient. Therefore, overreliance on the AI tools not only increases governance ability but also poses a threat by welcoming breaches.

Recommendations

It is recommended that the NHS should focus on implementing AI, the governance framework, robbery, enhancing and improving digital literacy and providing inclusive access.

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Blog 2: Designed Technology – “HealthGuard AI App”

Public Health Concern: Lifestyle Diseases in the UK

Public health concerns in the UK are exposed by severe chronic conditions, which include cardiovascular diseases and obesity. This criminal is a significant factor and a major issue in the UK. According to a report by OECD, the UK has a significantly higher rate of obesity by 29%, at 29%, compared to an average of 19%, whereas 22% of adults engage in sufficient physical activity (OECD, 2025). This process is a threat to their health by contributing towards mortality rates of 156 per 100,000 population, which represent an effective health promotion strategy.

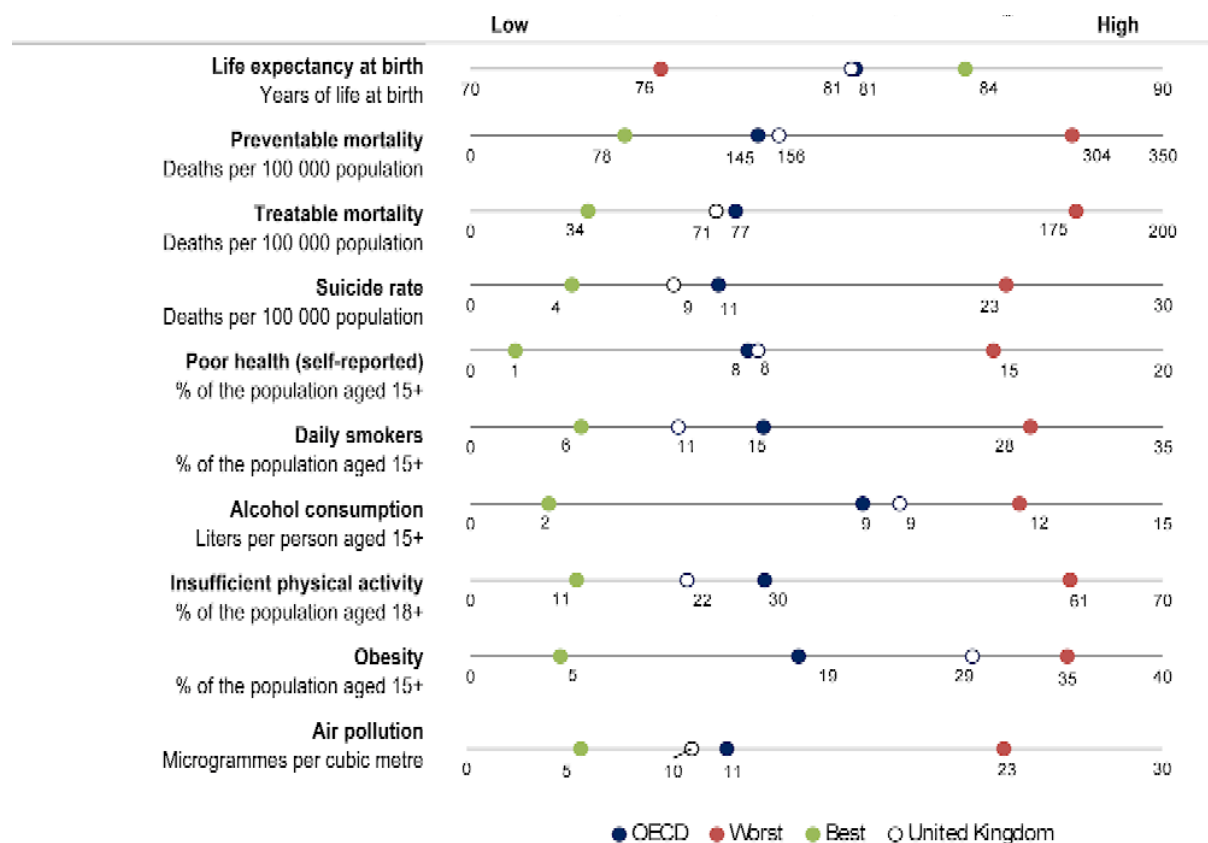


Figure 1: Health risk factors in UK

(OECD, 2025)

Designed Technology: HealthGuard AI App

The app proposed is a guard AI app, which is a personalised health platform integrating digital that allows AI, technology, and behavioural change theory. It also helps in collecting real-time data based on diet, sleep, and physical activity, which provides personalised recommendations to help in assessing risk by providing alerts on time.

Application in Health Promotion

The application of the app within the health promotion is that it promotes behaviour change, also helps in setting goals, gamification and reminders. It not only helps in managing tools but also provides digital interventions at the time of mental health management and chronic disease (Main *et al.*, 2025). Therefore, if the NHS system integrates this app and allows the professionals in the healthcare system to monitor the patient through this, progress could be remotely enhanced and also help in preventing care delivery.

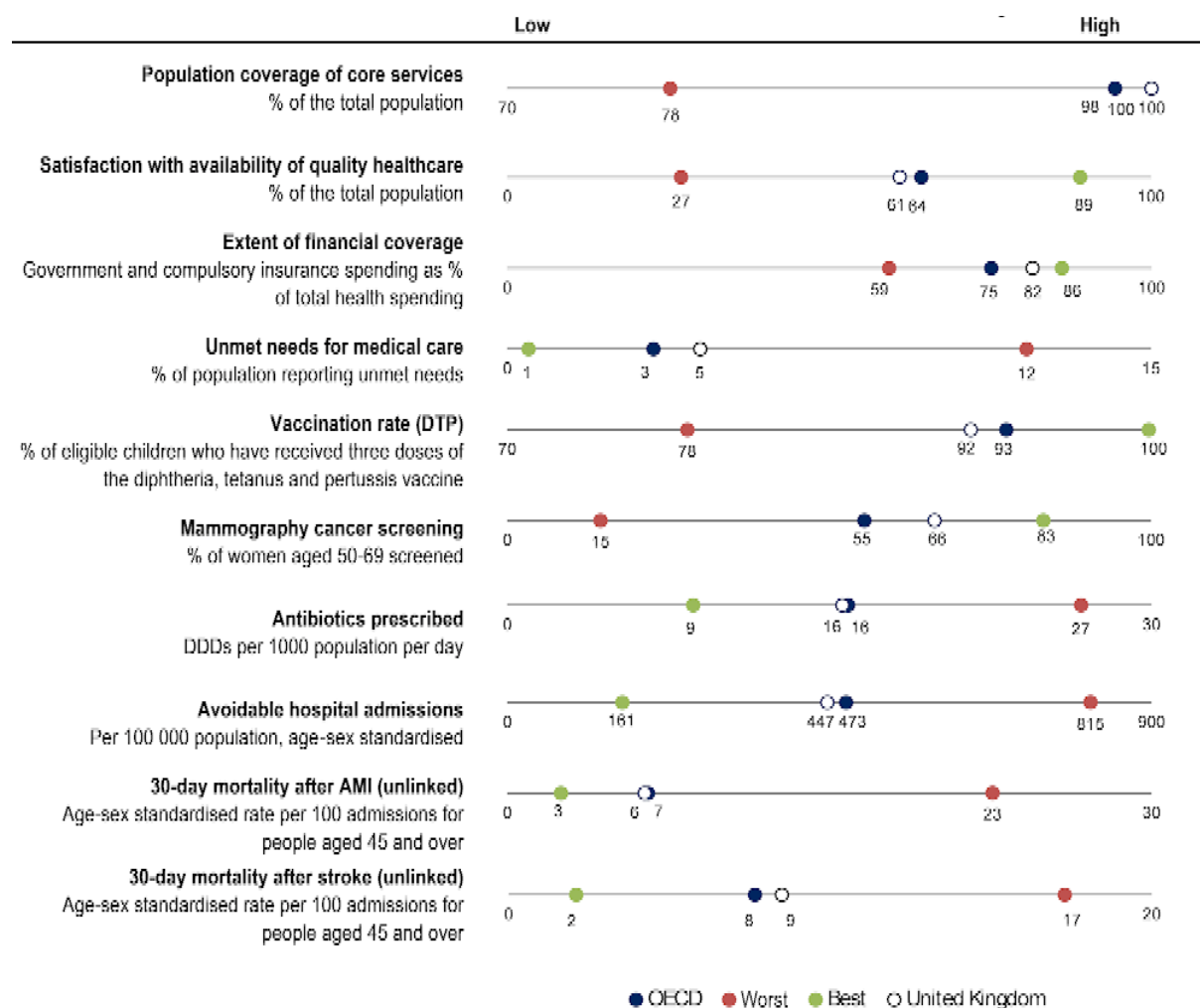


Figure 2: Access to care and quality of care

(OECD, 2025)

Expected Impact

The most expected impact is that digital health intervention may not only improve personalised patient engagement, but also provide self-reliant, self-management behaviour (Gudka *et al.*, 2025). Moreover, it could be stated that these features are very important within our health apps that could not only improve the outcome but also adhere to multiple trials (Valentine *et al.*, 2025).

Critical Discussion: Advantages and Limitations

The evaluation showcases that the app not only provides personalised care, but it is cost-effective, highly scalable, and also aligns with the digital transformation within the NHS and its goal (Schofield, 2025). The key challenges faced by the NHS are exclusion from digital technology, privacy concerns, and high Reliance on the automated system. Old age, people and the groups who are disadvantaged may struggle in accessing these technologies more effectively and efficiently.\

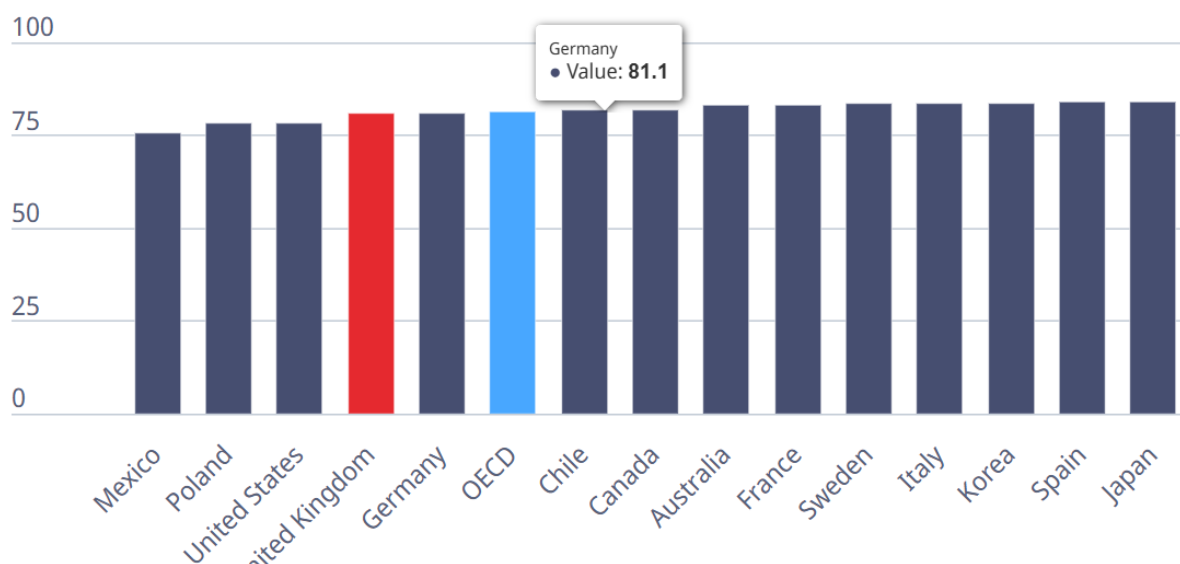


Figure 3: UK health indicators

(Source: OECD, 2025)

Implications and Recommendations

Digital tools are at risk, and health inequalities are broad if inclusive design is not implemented. Therefore, employing Yousuf-friendly interfaces providing digital literacy, programs and offline accessibility is very important. Therefore, inbuilt collaboration techniques within the NHS may not only provide trust but also help in regulating processes by equating implementation programmes.

United Kingdom Digital Health Market: Market Share by Technology, 2025

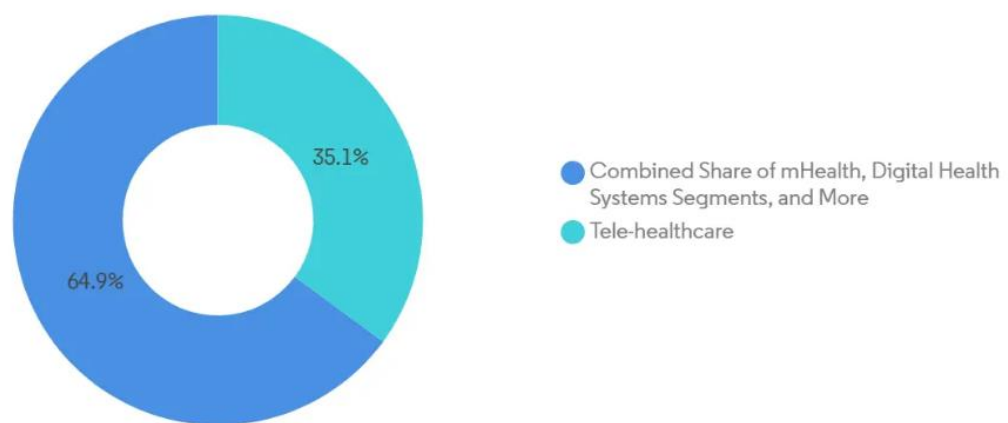


Figure 4: UK digital helathcare market

(Source: Mordor Intelligence, 2026)

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