

GP-AI Gatekeeper – iUK Q4e2 – Your Idea and Innovation (600 Words Final B)

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Innovate UK Smart grants: November 2024

The GP-AI Project for Wes Streeting 2025 #1

Application number: 10152480

[Question 4. Your idea and innovation](#)

The Specific Need or Challenge:

The NHS faces an unprecedented **waitlist of 7.7 million patients**, exacerbated by **administrative inefficiencies, misdiagnoses, and communication errors**. Over **thirty months of covert testing**, we gathered critical insights into these systemic issues, providing an **evidence-based understanding** of the sector.

  GP-AI Gatekeeper is an Agile **Domain Driven Design** crafted in **Modern Software Engineering** applying **TDD** and **Continuous Delivery** for scale.

If enhanced by **NHS branding**, **Sienna AI's technology** has the potential to **disrupt private healthcare** and establish a **global monopoly**. In tandem, its applications can span **all levels of government**, including **HMRC, DWP, and Justice**, but the **ageing population** makes the NHS the most urgent priority.

The public and NHS staff benefit immediately. In the long term, **lowering waitlists, reforming healthcare**, and boosting the **UK economy** are achievable goals. For example, enabling **2% of the population** to re-enter the workforce could generate **+/-£20 billion** in GDP.

Work Already Done:

The system is built on the **S-Web CMS**, developed since **2002**, and integrates **world-class innovations: Nudge CRM-AI, TBS-CC OKRs (2017), and ALL-COMMs (2023)**. Together, these form **Sienna AI**. Individually, it offers new solutions in existing areas, but **collectively, it is a totally new approach**.

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The GP-AI Gatekeeper 16-Stage Design

- 1. The Perfect 24/7 Receptionist**
The **GP-AI Gatekeeper** transforms the receptionist role into a seamless, **human-like conversational AI** that replaces or complements human operators. It enhances efficiency without sacrificing **empathy**, crafting a **400-word summary** for the doctor.
- 2. AI Decision-Tree Logic**
Employs **game-changing hierarchical questioning** and decision-tree logic to uncover critical details patients might not naturally convey.
- 3. Probabilistic Diagnostic Reasoning**
Uses **state-of-the-art probabilistic reasoning** to suggest preliminary diagnoses, **prioritise urgent cases**, and offer advice in simple cases.
- 4. Visual Assistance Videos and Training (Basic)**
Provides **instructional videos** on tasks like **COVID swabs**, physiotherapy exercises, and resuscitation techniques.

5. **Eliminates Administrator Error**
AI eliminates human documentation errors, reducing negligence and the **waitlist**. It opens the door to scale **S-Web 6VC-CMS**, **Nudge CRM-AI** and **TBS-CC-OKRs** toward a fully automated NHS.
6. **Error-Free Communication**
Voice-to-text and language errors were challenges, but the simple idea of **reading back the memo** to the patient to ensure accuracy solved them.
7. **Unlimited Discussion Time**
Patients are transferred to **The Good Doctor app for complex cases**, allowing unlimited in-depth conversations.
8. **Cross-Referencing Medical Records and Prescriptions (Basic)**
With **patient permission**,   Gatekeeper **cross-references medical histories** and prescription records for better accuracy.
9. **Holistic Health Checks and Advice**
The system provides tailored **wellness advice** and **health checks** based on patient histories and conversations.
10. **Eliminate Medical Record Fraud**
Addresses the NHS's **biggest systemic issue** by ensuring accurate records, reducing cascading **misdiagnoses**.
11. **GP-AI Psych Re-Evaluations and Therapy**
Identifies **overmedication** and misdiagnoses caused by **criminal marketing**, reevaluates diagnoses and provides **cognitive-behavioural therapy**.
12. **Specialist Insights**
Delivers **specialist-level opinions pre-consultation**, reducing waiting lists and improving patient outcomes.
13. **Deep Dive Diagnostic Solutions (Basic)**
Performs **multi-symptom keyword searches** across millions of specialists' medical opinions to suggest treatments.
14. **Continuous Learning (Basic)**
Improves future diagnoses by **learning from every patient interaction**.
15. **Advanced Deep Learning Diagnostics (Future Concept)**
Extends Stage 12 by applying **deep learning** to vast datasets for precision diagnostics.
16. **Immediate Results of Medical Scans (Future Concept)**
Delivers **scan results instantly**, providing actionable insights before patients put their shoes on!

Equality, Diversity, and Inclusion

Based on **behavioural science**,   GP-AI Gatekeeper tackles **misogyny**, **racial bias**, and **discrimination** in healthcare. It provides **multilingual services** and **vocal solutions** for individuals with **limited mobility**, ensuring inclusivity for all patients.

The platform enhances **public safety** by addressing **mental health challenges** and supporting those who struggle to communicate with doctors and may be improperly medicated. It expands opportunities for **tech-savvy millennials**, empowering them to pursue **meaningful NHS careers**.