Health Mission Hackathon Concepts

The ideas and concepts presented in this document were developed as part of a Health Mission hackathon ran by the Royal College of Art (RCA) with their 80 service design students. They worked on how health and care services could better meet the needs of Londoners at risk of digital exclusion.

Almost all the ideas and concepts presented here are in their early stages of development. They would need more research, testing and development before being put into practice. We developed them to spark a conversation about what's possible now and in the future.

Loti

SUMMARY SLIDE FOR EACH CONCEPT GENERATED IN THE HACKATHON AND SOME CURRENT RCA VENTURES

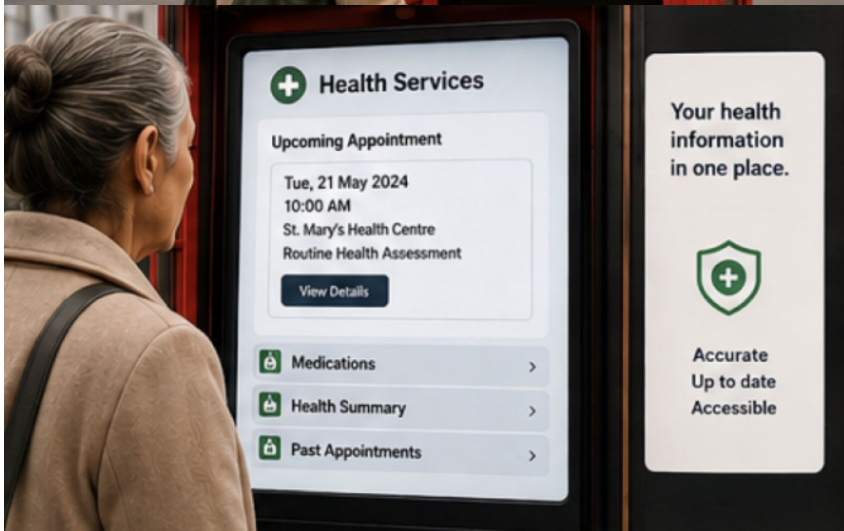
ACCESS PREVENT SUPPORT

CARE LINK: Keeping the ‘overlooked’ people stay in the health system

In a city where access to healthcare is shaped by digital records and AI risk scores, this service allows trusted community advocates to verify that people are engaging with care, helping them remain eligible for support even without a strong digital presence

CARE LINK Health Access Points are self-service kiosks installed in libraries, day centres, retailers even repurposed phone booths across London, where people can use an AI-enabled hotline to access health information, check appointments, update records, and connect with services without needing a smartphone or internet access, ensuring vulnerable residents are not overlooked by automated systems and remain connected to care.





ACCESS PREVENT SUPPORT

Millions of Londoners Can’t Access Healthcare

Introducing Amplify, your multi-lingual healthcare advocate that navigates the NHS system, removing language and vision barriers, so more people can receive the care they need.

Hello · Cześć · Hola · Bună · Olá · Helo · Ciao · مرحبا · নমস্কার · नमस्ते · 你好



Amplify

A multi-lingual healthcare advocate

- Understands 6,000+ languages
- Voice-first, hands-free
- Free to use
- Connected to the NHS

NHS Works with the NHS App
A connected NHS login service

ACCESS PREVENT SUPPORT

COMMON GROUND

Stabilizing health, securing housing and keeping men connected.







Common Ground is a two-sided service ecosystem that intercepts vulnerable, isolated men using low-barrier, humorous peer outreach to build trust, paired with a minimalist NHS digital dashboard that monitors their well-being and coordinates immediate support.

The Service: Strategically Use dry, automotive-inspired humour to bypass clinical stigma, directing men to a trusted peer advocate for a casual conversation that safely connects them to supported housing and healthcare.

The Product: Intervention around collecting, connecting and sharing data (soft-tech) as a form of interface (information service) for NHS

ACCESS PREVENT SUPPORT



BONDHU *(Friend in Bengali)*

A Voice Assistant for Healthcare Access: Breaking the Digital Wall Effect

"Jahanara, your blood sugar reading looks a little high today. That can happen. Shall I let your care coordinator know, or would you like to talk about it first?"

Voice-First Interface

- Hands-free, screen-free access
- Works without internet (SMS capable)
- Converses in patient's mother tongue

Healthcare Management

- Books NHS appointments
- Tracks medication schedules and side effects
- Retrieves and reads lab results aloud

Medication Safety

- Audio reminders for medications
- Distinguishes between pills by touch+voice
- Alerts family if doses are missed

Community & Connection

- Connects to local support hubs
- Enables peer support with other patients
- Reduces isolation through social prompts

ACCESS PREVENT SUPPORT

Belong — Your Health Companion

An NHS-supported companion that listens in your language, understands your needs, and connects you to the care you deserve.

Face Recognition Access

Secure and effortless access using face recognition.

No passwords. No forms. Just one look.

Voice First

Speak naturally in your own language.

BELONG listens, understands and adapts.

NHS-Supported & Secure

Built with strong privacy, consent and NHS standards.

Your data. Your choice. Your trust.



Personal Companion

Customised voice, language, personality and interaction style that feels familiar.

Designed for comfort, built on trust.

Care Connection

Turns conversations into clear symptom notes.

Translated into English for healthcare professionals and shared with family when needed.

BELONG adapts to you — not the other way around.

In your language
Speak how you feel most comfortable.

In your way
Simple, voice-led, and easy to use.

In trusted hands
Supported by the NHS. Built for everyone.

For your wellbeing
Better communication. Better care. Better life.

ACCESS PREVENT TREAT SUPPORT

Linko is an AI-powered social prescribing ecosystem that helps people overcome social isolation by reducing the emotional barriers between opportunity and participation. By transforming overwhelming choices into personalised, achievable next steps, LINKO supports individuals, empowers link workers, and helps communities identify unmet social needs before they become crises.

NHS | Social Prescribing | Link Worker | Linko



In 2035, the challenge is no longer connecting people to support.
The challenge is helping people act in a world overflowing with possibilities

Overflowing AI Choices

- AI Recommendation
- Decision Fatigue
- One Next Step
- Actionable Guidance

One meaningful step, not endless choices

One Action Today

- Achievable Goals
- Small Steps
- Behaviour Change

One achievable action, every day

NHS Link Worker Support

- Social Prescribing
- Link Worker Support
- Between Appointments
- Continuous Engagement

Supporting social prescribing beyond appointments

Community Connector

- Social Inclusion
- Volunteering
- Mentoring
- Local Opportunities

Connecting people to their local community

Social

Enhanced community engagement and stronger local networks

Cultural

More diverse and inclusive social connections

Ethical

From individual responsibility to shared responsibility

Economic

Lower healthcare costs and reduced productivity loss from isolation



- **Navi:** a decentralized, self-learning AI "Guide" helps build communities with shared lived experiences structure and scale their peer-to-peer support.
- Bridges the gap between cold technology and human vulnerability by connecting recent migrants like Elena with mentors who have walked in her shoes.
- Instead of navigating a sterile digital portal alone, Elena receives guidance from growing self learning guide, especially on health and housing, social services, education and employment,.

PREVENT SUPPORT

NAVI

You are not *alone* here.

Navi guides immigrants from their first scary days to independence, meaningful work, and eventually becoming a guide for others. A full support ecosystem — powered by human connection and AI.

Start Your Journey → See how it works

Free to join · No paperwork · In your language

PREVENT SUPPORT

CAREMESH: from reactive healthcare to proactive community care



AI Companion
Daily support in your language.

A wearable device with multiple sensors, featuring voice assistant in your native language.



Care Pair
Practical and emotional support from family.

We coordinate care and share updates directly with the primary caregiver.



Community Circles
Belonging, friendship, and prevention of loneliness.

We connect you seamlessly to your local community care center.

TREAT SUPPORT

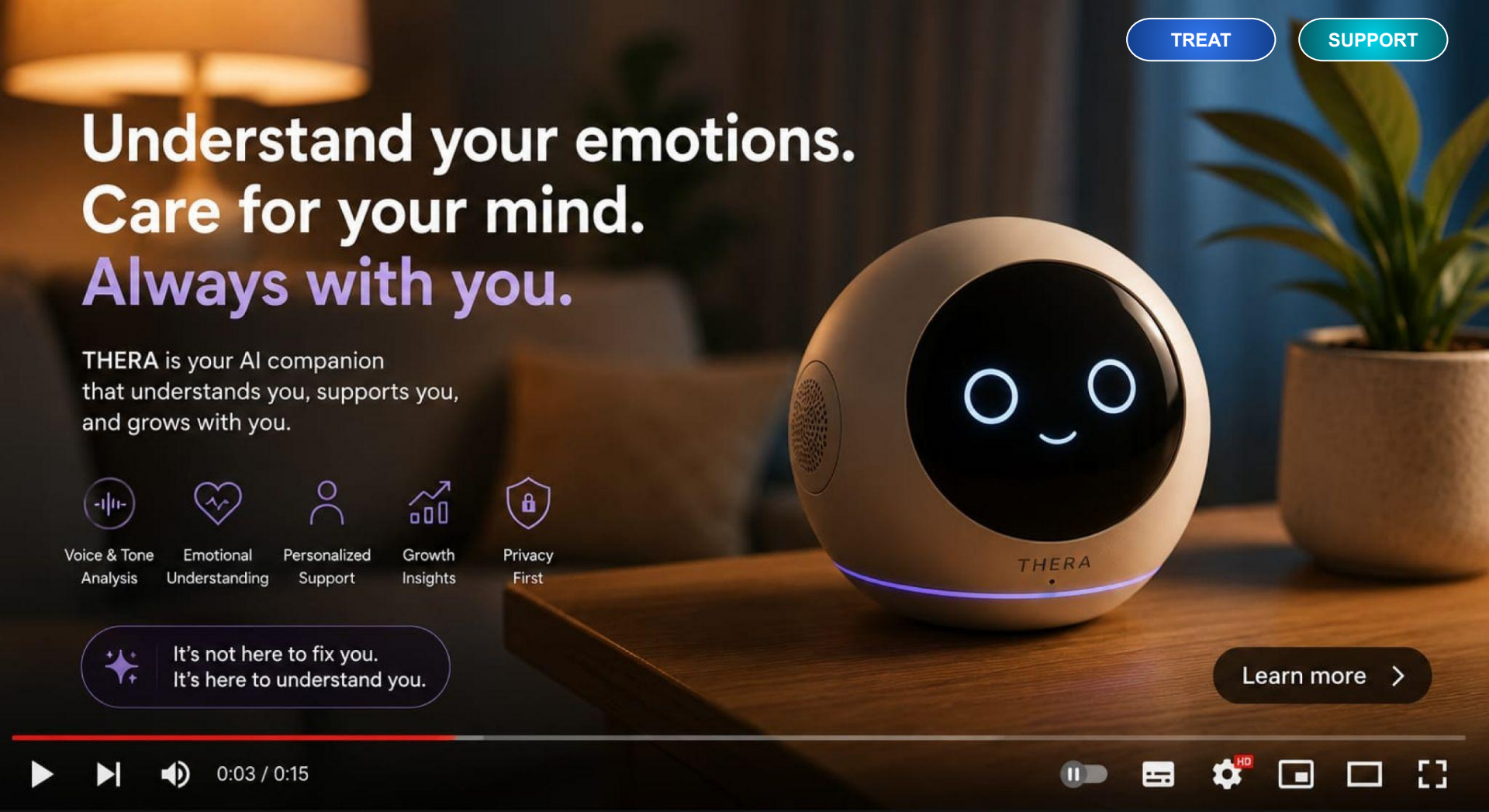
YOUR HALO

Halo helps mothers communicate what words can't: reimagining antenatal care for 2035, language-free, trust building, preventative maternity support



A soft wearable system that combines:

- Physiological monitoring (wearables + optional home ultrasound inputs)
- Gesture + touch-based communication
- A personal pregnancy "language"
- Digital companion that maps readings over time


TREAT
SUPPORT
Understand your emotions.
Care for your mind.
Always with you.
THERA is your AI companion
that understands you, supports you,
and grows with you.
Voice & Tone Analysis
Emotional Understanding
Personalized Support
Growth Insights
Privacy First
It's not here to fix you.
It's here to understand you.
THERA
Learn more
0:03 / 0:15



PREVENT SUPPORT

Dotplot is a handheld device for women who at risk of breast cancer to identify changes in breast tissue density over time. Paired with an app, it guides users through monthly self-checks and alerts them to abnormal changes.

By addressing the confusion and guesswork associated with self-checks, providing customized guidance, and offering objective monitoring, Dotplot aims to revolutionize the way women approach and understand their breast health.

Dotplot ensures you can reach your healthcare provider in time.

- Dotplot compares the current month's reading to the baseline created with the first scan. It keeps an eye out for any abnormal changes.
- It is able to generate a report that highlights any concerning changes to easily communicate with the a healthcare professional.



TREAT SUPPORT

KnitRegen Ltd is a wearable MedTech company that has developed a patented device, 'The PowerBead', focused on restoring movement and building strength in muscles.

The device has the ability to excite and inhibit muscle activity, thereby strengthening weakened muscles and/or inhibiting overactive muscles; delivering long-term changes to muscle activity in a small wearable that can be worn discreetly alongside daily activities.

Developed from the minds of material scientists, professors of neuroscience and seasoned clinicians, KnitRegen offers a new future of muscle training and recovery.

Complementary to Physiotherapy

Restore Movement & Strength

Targeted Therapy

TREAT SUPPORT



CUE: a non-invasive, wearable, medical device that improves movement and quality of life of those with Parkinson's.

The CUE Device utilises pulsed cueing and high-frequency focused vibrotactile stimulation to alleviate symptoms including slowness, stiffness, rigidity, freezing of gait, and more. This results in improved quality of life for you.

Developed by a team of designers, engineers, and clinicians, the CUE Device offers a novel, non-invasive approach to improving quality of life for people with Parkinson's, with the simple push of a button.

With over 3,000 people using CUE Device day to day, pilot tests have seen users with Parkinson's improve their MDS-UPDRS scores by an average of 7.8 points, which is considered clinically significant.

Improves movement

Utilising non-invasive, focused vibrotactile stimulation and cueing to improve movement.

Medication reminders

A wearable, discreet and adjustable medication reminder and recording system.

Non-invasive

The CUE1 is worn via an adhesive patch, requiring no invasive surgery and making it quick to set up.

Discreet

The CUE1 can be worn discreetly under garments or shown off as an accessory.

Easy to use

The CUE1 is simple by design and is controlled with one large, tactile button.

Symptom tracking

Track symptoms, progression and quality-of-life measures with the CUE1 app.

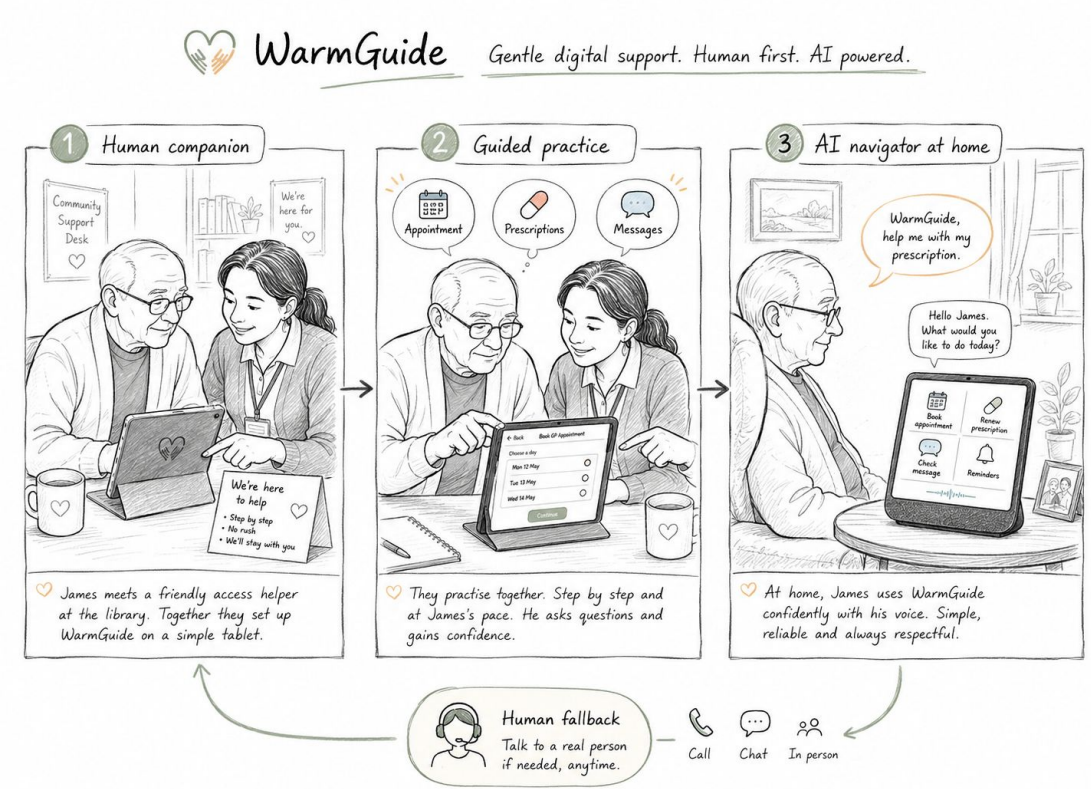
SUPPORT

WarmGuide

From human companionship to trusted AI navigation with a human touch

WarmGuide helps digitally excluded older adults build trust with digital services through the same human companion first, then gradually transitions them to a safe AI Navigator for everyday health and civic tasks at home. A single Health Visitor or Physician overseas and acts as a central hub for up to 20 local elderly patients, each having a dedicated AI Navigator for personallised daily support - thereby extending the reach of NHS staff



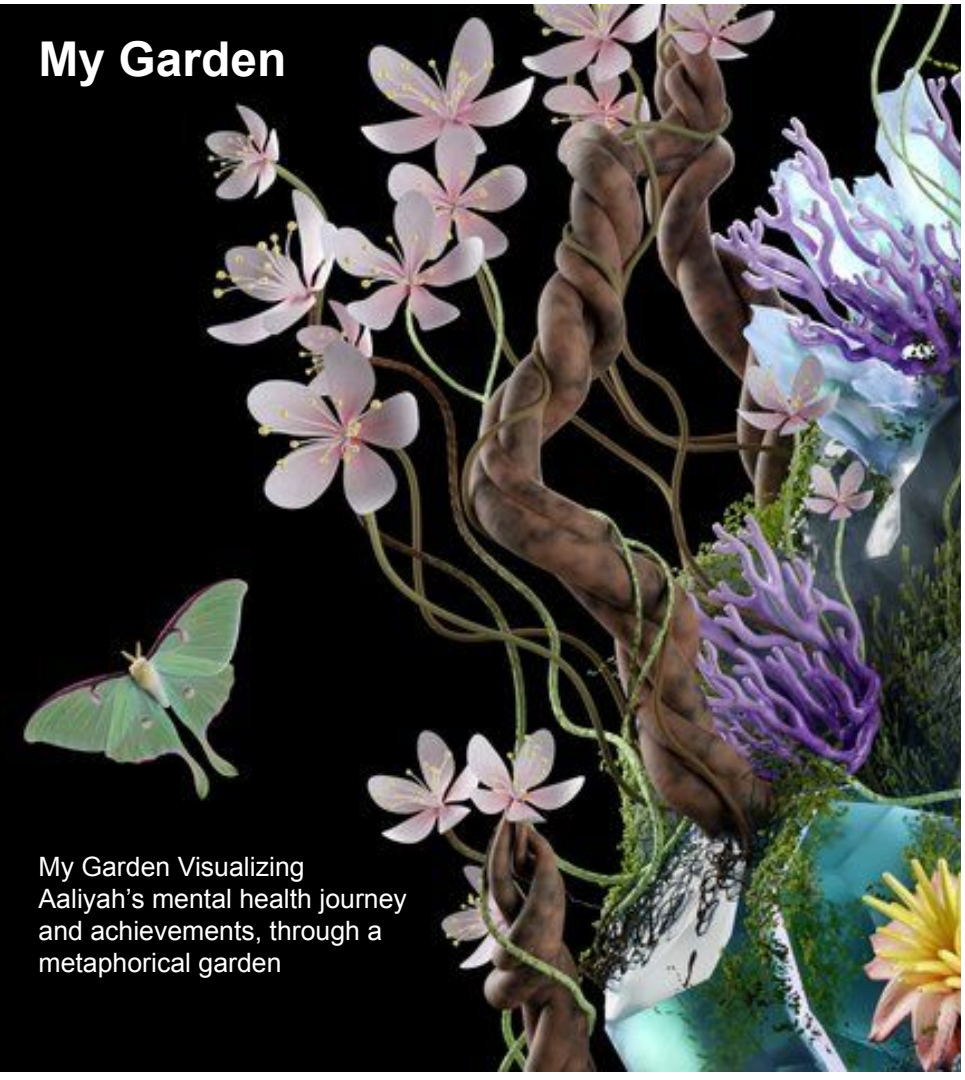




KnowMeCare

Every carer already knows you — before they knock.

My Garden



My Garden Visualizing Aaliyah's mental health journey and achievements, through a metaphorical garden

My Garden helps Aaliyah to gently uncover the root causes of her stress, enabling her path towards achievable milestones, and offering encouraging nudges to recognise her progress.

As each personal victory blooms, it contributes to a shared community garden, where Aaliyah can **discover** others on the same journey, **grow** alongside them, and together co-create a living, supportive space of **collective healing and growth**.

- Integrates- social, health
- NHS Appointments
- Creative ways to express how you feel - draw, describe, move
- Agency in choosing the what and how
- Therapist and Family Portals, to facilitate data visibility from those who care
- Privacy - sharing details only to those you trust

Inspired by Orbital Bloom - Image by Ameera Kawash, RCA

SUPPORT

GLOW BOX

Smart pill box: by using colour, lighting, it helps identify the type of medication they need to take, and notify their family members or carers whether the patient took pills or not. It sends notice when there is last 3 days worth pills left, alerts message go to pill stop to refill. Automated dispensers in pharmacies and dispensaries can reload the Glow Box.



Features

- Tactile & Color-Coded Interface
- Ambient Light Notification
- Automated Family Sync
- Predictive Refill Logic
- Direct "Pill Stop" Linkage

Benefits

- Independence & Dignity
- Peace of Mind for Families
- Error-Free Medication
- Proactive Compliance
- Seamless Refill Experience

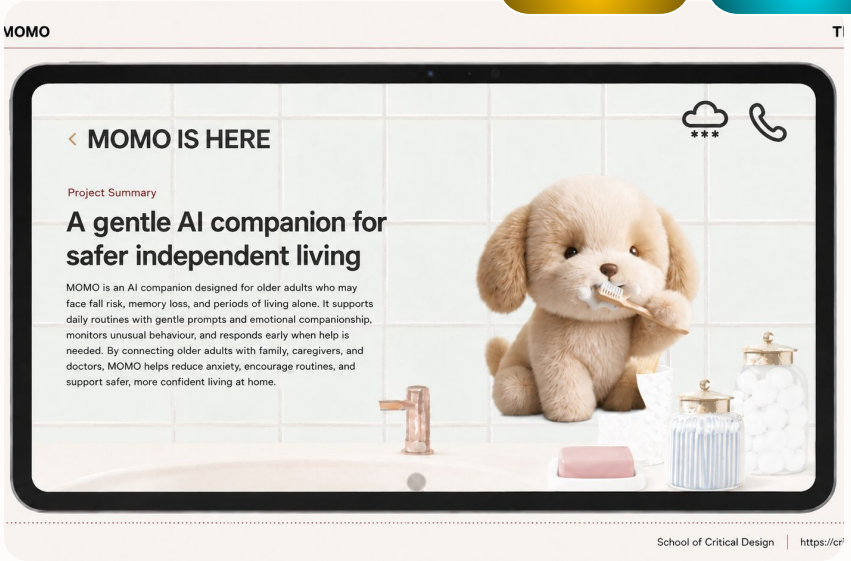
PREVENT SUPPORT

MOMO IS HERE

Project Summary

A gentle AI companion for safer independent living

MOMO is an AI companion designed for older adults who may face fall risk, memory loss, and periods of living alone. It supports daily routines with gentle prompts and emotional companionship, monitors unusual behaviour, and responds early when help is needed.



Fall Prevention

Detects risk and alerts early to prevent accidents.

Medication

Timely reminders to take medications and attend clinic.

Health Monitoring

Tracks activity, sleep patterns, and daily habits.

Emotional Support

Reduces loneliness and provides comfort for better living.

SOFIAA, an AI companion to support women through the menopause

AI-POWERED

Your Personal SOFIAA AI Companion

Ask questions about menopause, nutrition or exercise in plain English. SOFIAA AI gives you simple, safe, actionable answers — available any time, day or night.

Instant Answers
Get support on menopause, fitness and diet, 24/7 — no waiting rooms.

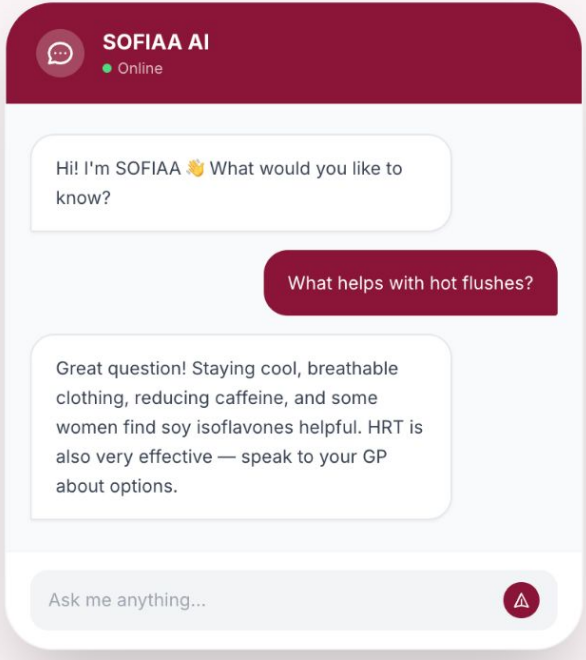
Safety First
Built with medical guardrails. Always advises professional care when needed.

Compassionate & Private
Ask anything — no judgement. Your conversations are private and confidential.

Trained on SOFIAA Research
Powered by Azure AI, trained specifically on midlife women's health data.

Chat with SOFIAA AI

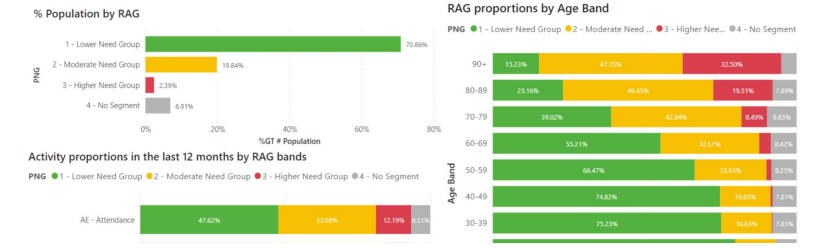
Full Chat Experience ↗

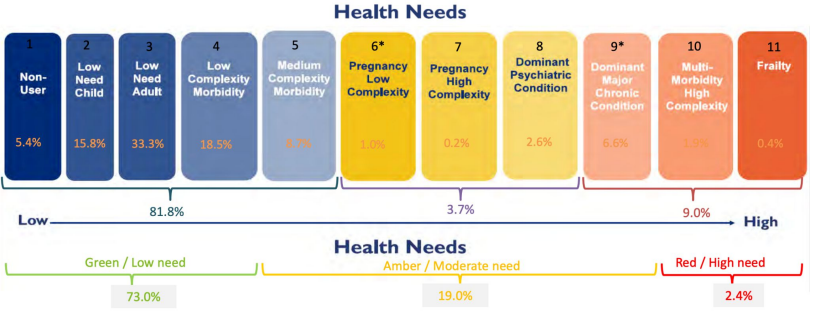


PREVENT SUPPORT

PRACTITIONERS







Stratifyer: an AI enabled system that could enable GPs to identify those at most risk in their community. It analyses A&E, social services, benefits, housing and known health data, and flags those at risk of an imminent health crisis.

Stratifyer could integrate with GP appointment system to allocate more GP time for those in most need and at greatest risk.

Special focus would be given to those with multiple comorbidities or those who rarely present or are registered at GP practices and are identified at highest risk.

More Front Doors: Stratifyer should offers outreach to pharmacies, VCS organisations and other agencies including Housing, Adult Social Care, Job Centres to refer high risk individuals to GPs and specialist Clinics.

Based on Graphnet and John Hopkins ACG System but drawing on cross-agency data sources

ACCESS PREVENT SUPPORT



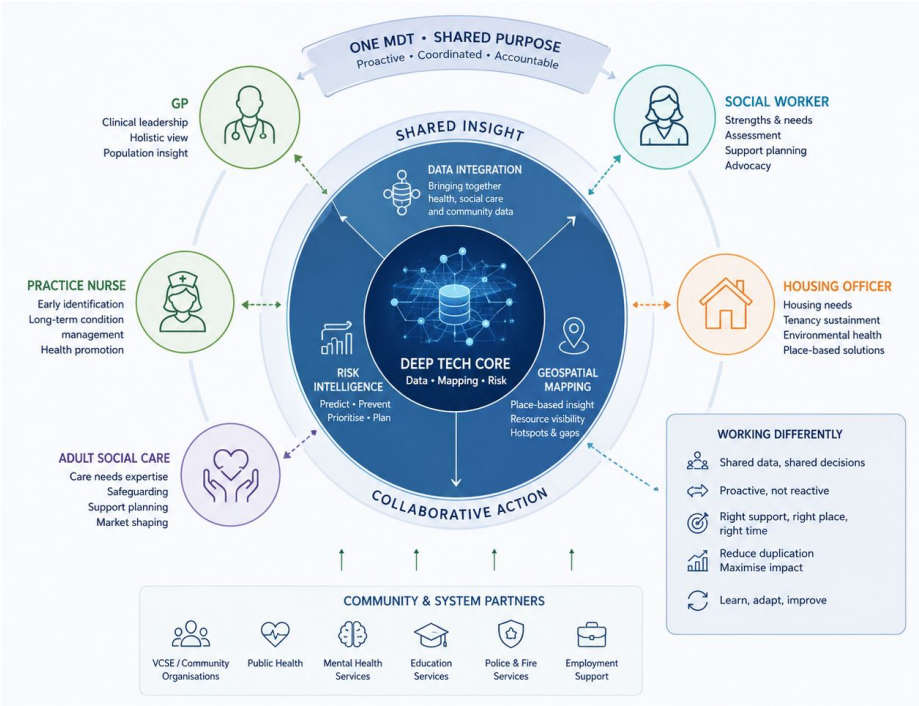
Community navigator: has conducted detailed community asset mapping and matched best points of contact for harder to reach users.

Convened by LOTI and realised through a collaboration of organisations including UK mapping expertise, risk stratification / big health data and generative AI to map most effective pathways for low-medium risk by user type.

Community navigator would also support key nodes in the neighbourhood with preventative messaging and nudges to join up points of access via the most appropriate healthcare touchpoints for them e.g. pharmacist.

End to end service monitoring feeds back the effectiveness of messaging, access points and user type for continual improvement.

PREVENT SUPPORT



Dynamic MDT 3.0: brings together new actors from beyond the healthcare landscape and is powered by a deep tech core.

Following a small scale, hyper focussed, single postcode prototype, LOTI has convened and catalysed MDT 3.0 to scale across multiple neighbourhood settings in London.

Combining the best of deep tech and the human touch, it enables in-the-round view of users at an individual level but taking account of the wider neighbourhood settings.

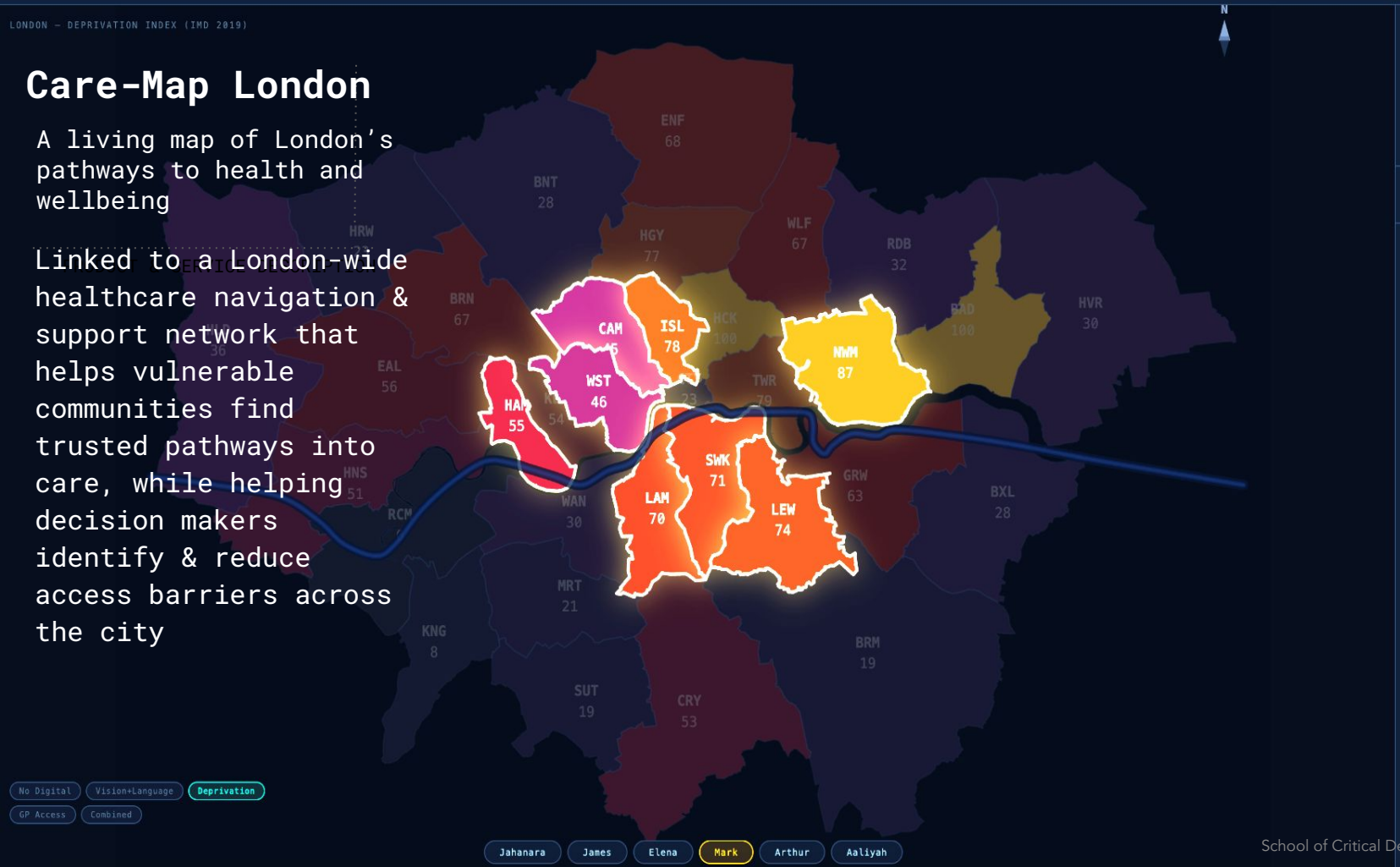
Crucially it takes in new actors that might have been overlooked if seen as a purely health focus, e.g. housing officers, adult social care workers and other key neighbourhood stakeholders to accomplish better health outcomes for locals.

LONDON — DEPRIVATION INDEX (IMD 2019)

Care-Map London

A living map of London's pathways to health and wellbeing

Linked to a London-wide healthcare navigation & support network that helps vulnerable communities find trusted pathways into care, while helping decision makers identify & reduce access barriers across the city



75%

ACCESS FAILURE SCORE

4 steps blocked · 3 high-risk

Homeless, chronic kidney disease, chronic illness

PATHWAY BARRIERS

App Access	Digital	BLOCKED
Engagement	Digital	BLOCKED
Referral	Systemic	BLOCKED
Follow-up	Structural	BLOCKED
Awareness	Structural	High
Identity / Login	Identity	High
Trust	Trust	High

No Digital | Vision+Language | Deprivation | GP Access | Combined

Jahanara | James | Elena | Mark | Arthur | Aaliyah

POLYCARE

PolyCare is an AI-supported clinical intelligence layer for patients with multiple long-term conditions.

It listens during NHS consultations, creates structured notes, compares new concerns against the patient's longitudinal record, and flags clinically relevant interactions between diseases, medications, side effects and unresolved symptoms,

- Instead of treating each condition in isolation, it helps clinicians see the patient as a connected health ecosystem.
- At population level, anonymised patterns can reveal under-researched overlaps between conditions and treatments, generating new research questions for safer multimorbidity care.
- Cross-Silo Clinical Linkage Engine: Automatically connects medications prescribed by separate specialists (e.g., GP blood pressure changes colliding with a pain specialist's sedating prescription).

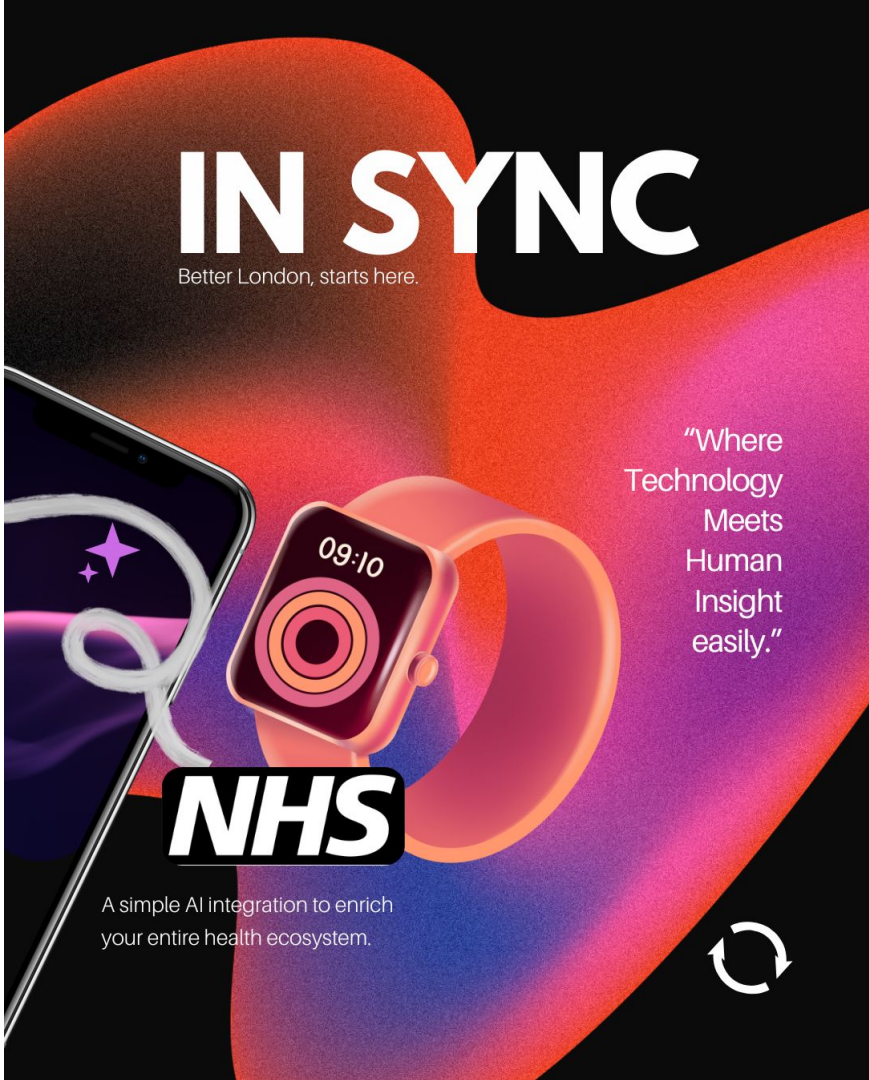


IN SYNCH:

In Synch is an AI integrated system that bridges the gap of carers awareness by providing a platform for them to upload and interact with patient data digitally as well as real time update of patients current health state via digital touchpoints in the ecosystem.

In the future James can upload his daily routines/data after surgery so his carers can view and update his data

Avoiding repeating the personal information conditions as well as promoting efficiency



ECHO

Translating Health Across Different Care Contexts

Echo helps older adults with learning disabilities communicate health changes across care contexts. By translating behavioural changes into meaningful information, Echo helps carers and healthcare professionals understand health concerns earlier.

1. Behaviour-to-Health Translation

Echo translates Arthur's routines, movements and behaviours into meaningful health information when verbal communication becomes difficult.

2. Shared Understanding Across Care

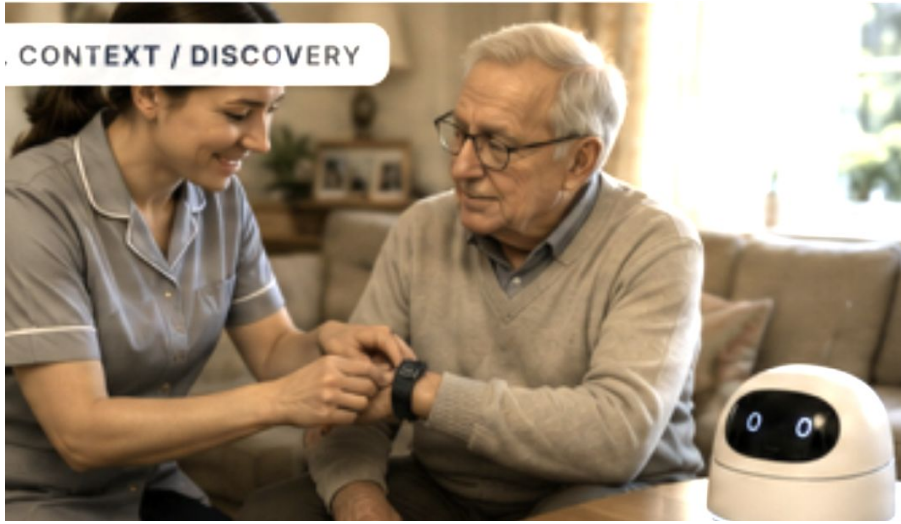
Echo helps carers, 111 operators, ambulance staff and hospitals understand the same health situation within their own professional context.

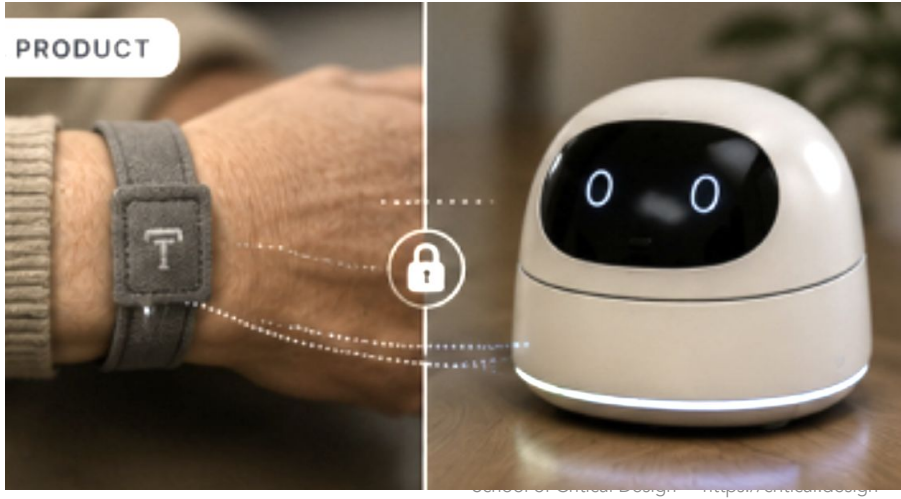
3. Information Transfer Without Loss

Echo preserves critical context during handovers, preventing important behavioural or emotional signals from being lost between services.

4. Human-in-the-loop Decision Support

Echo supports carers and professionals with recommendations and summaries, while keeping human judgement, consent and trust central to care.





CITY INFRASTRUCTURE FOR HEALTHY LIVING

AI READABLE LONDON

Making London websites, NHS resources, and other digital assets AI accessible for citizen benefit.

Huge amounts of Data and Services that could help citizens navigate their lives, is hidden behind logins, different departments, difficult to understand, various formats. AI READABLE LONDON allows AI Agents to access this information and interface with service for the benefit of Londoners.



MCP access to all NHS data, scheduling, services.

Shared protocols and security across NHS, Councils, and private tools.

Agent agnostic, allowing citizen inference rather than embedded inference and the cost that comes with that.

Tool-ification of NHS Services “How do we better help AI access this system?”

Benefits, features, key touch points, etc...

COOL CORRIDORS

Walking & Cycling in Shade across all of London

Moving around london is essential for labor, health, schooling, and education. Cool Corridors is a LOTI + TFL initiative to match the journey with safe, shade covered walking and cycling paths.



Journey Maps + Shade Maps + Tree Health Maps across all of London

Tree planting, mycelium support systems, Parks, and higher risk building with sprinklers and misters

Sensor and actuator network operating dynamically and providing, temperature, humidity and water updates

Removing dark surfaces and tarmac with light colored reflective pavers and cool surfaces.

Benefits, features, key touch points, etc...

LONDON PUBLIC WATER

London buys back water system ownership from private companies

20% of London water is lost to leaks before reaching the tap. Sewage is discharged directly into the Thames and other waterways. Water security is essential for London Health in the future. Using AV vehicle sensors to detect leaks



BENEFITS / FEATURES

MIsting Stations for Cooling across the city

Live Leak Detection across the city from CCTV, Citizen Reporting, and Self-driving car video feeds.

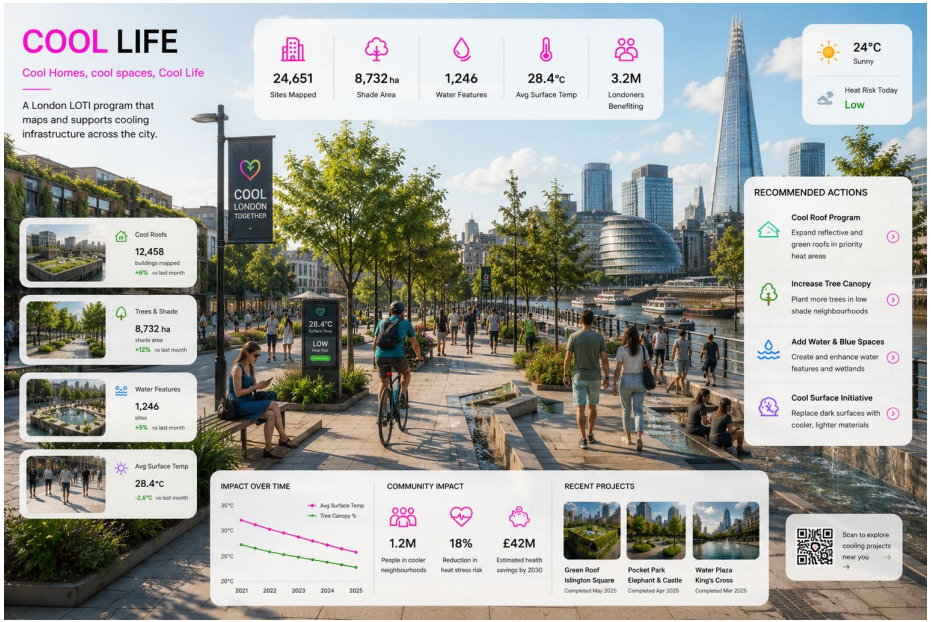
Water Dashboard of rain, water use, water use through the city sites. Rates and other data. Projection of days and months ahead.

Hydration of citizens measurements and calculated by algorithms.

COOL LIFE

Cool Homes, cool spaces, Cool Life

London infrastructure is not designed for the climate that we now find ourselves in. **Cool Life** is a London LOTI program that maps and supports cooling infrastructure across the city.



BENEFITS / FEATURES

Cool roofs (white or reflective roofs or green Roofs) +

Replace dark surfaces with cooler ones

Add much more water to the urban landscape using Blue/Green infrastructure

Plant a lot more trees and Create More Shade

LIVE LONDON MAPS

Dashcams + Selfdriving car data is used to improve understanding of London needs

London has a huge amount of life video data, and data on Londoners, but self-driving videos and Live London Maps use self-driving car data and partnerships with automotive companies to map the health of london using vehicle sensors to support multiple services.



BENEFITS / FEATURES

Broken Windows theory, mapping of maintenance and rubbish needs

Heart rates, HRV, Stress, walking, mood, face ID all data taken from the street.

Hot spots, areas of risk identified and interventions deployed

Laws to protect privacy, and avoid corporate misuse of this data, ensuring public benefit

LONDON EATS

Food security for London

Heat stress, floods and extreme weather conditions are creating real risks for food system collapse. When this happens London will quickly be throw into chaos.



BENEFITS / FEATURES

Planting food trees and foraging options around London.

Encourage gardening in gardens.

Make emergency food storage accessible and affordable

Digital Distribution plans and interfaces for emergency meals. 2 week, 3 months.

London makes deals with other countries for emergency food and insurance.

CATEGORISATION OF CONCEPTS

SERVICE PROPOSITIONS BY CATEGORY

VOICE

AMPLIFY
A multi-lingual healthcare advocate

MOMO
A gentle AI companion for safer independent living

BELONG
A Voice Assistant for Healthcare Access, multi-lingual

BONDHU
A Voice Assistant for Healthcare Access

THERA
AI companion with physical interface

ECHO
AI voice assistant helps older adults with learning disabilities communicate health changes across care contexts

POINTS OF ACCESS

WARMGUIDE
Human support for AI onboarding and services for older digitally excluded

CLINK
Repurposed phone booths across London serve as Health Access Points for “overlooked” people

DATA SHARING

CARE MAP
City wide multi-data source health delivery support

CAREMESH
Proactive community delivered care, from AI assistance to care assistants to community care circles.

KNOWMECARE
Pre-care patient diagnostics and tracking, for preemptive visits

POLYCARE
AI-supported clinical intelligence layer for patients with multiple long-term conditions

IN SYNC
Multi-source personal data sync supporting health & NHS care delivery

STRATIFYER
Risk Stratification and Flagging for GPs and others with dynamic appointment scheduling dependent on potential complexity

COMMUNITY

DHEALER
Community led pharmaceutical distribution

COMMON GROUND
Service ecosystem supporting isolated men to stable health and secure housing

NAVI
AI guide building communities of shared lived experience for immigrants.

LINKO
AI powered social prescribing ecosystem

DEVICES

GLOW BOX
Smart pillbox with automated pharmacy connections

HALO
Antenatal care with a soft wearable for preventative and proactive monitoring

MY GARDEN
Visualizing Mental health journeys

DOTPLOT
Handheld home mammography

RESILIENCE

COOL LIFE
Mapping London for Safer Walking & Cycling in Shade across all of London

Mapping housing, schools and infrastructure to protect the most vulnerable from hyper and hypothermia

LONDON EATS
Ensuring London’s food resilience

ENABLING PLATFORMS

AI READABLE LONDON
Making London websites, NHS resources, and other digital assets AI accessible for citizen benefit.

MODAL VOICE PLATFORM
Voice platform and routing capability for health and care services

LIVE LONDON MAPS
Dashcams + Self Driving car data is used to improve understanding of London needs working with TFL