Visiba

Smarter software. Better healthcare.

Redesigning the front door to healthcare with AI: Inspiration from NHS London

Who are we?

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GRUMPY
SPRO

Smarter software. Better healthcare.

2014

First Swedish Healthcare Partner

Launch in Norway

Probalistic Graphical Model creation

Industry Award for innovation

Key role in delivering digital healthcare during the pandemic

7 million patients processed

100,000 medical inputs

Launch in UK

Chosen partner of NHS England for AI Triage Deployment in NHS 111

2024

Launch in Finland

Visiba Triage
Powered by Red Robin

NHS 111 Smart Triage Service

*"Improve the **durability** and efficiency of front door NHS services, **safely reducing interactions** where value is not added"*

Dr James Ray

National Clinical Advisor for Urgent Care

NHS England

Shaun Crinion

Deputy Head of Urgent Care

NHS England, London

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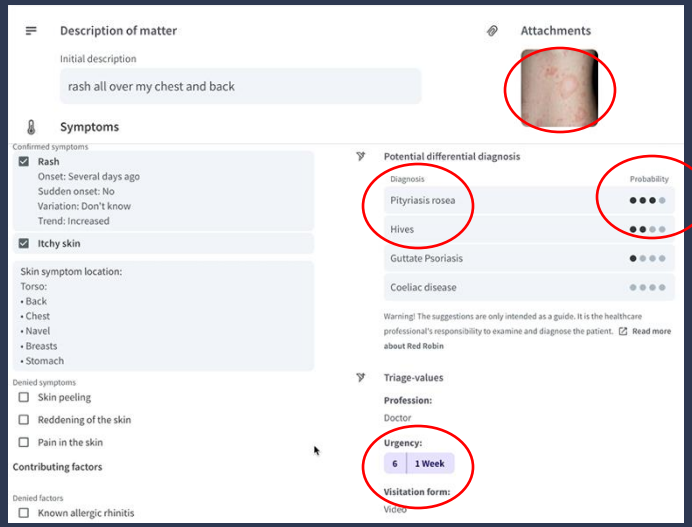

Visiba Triage
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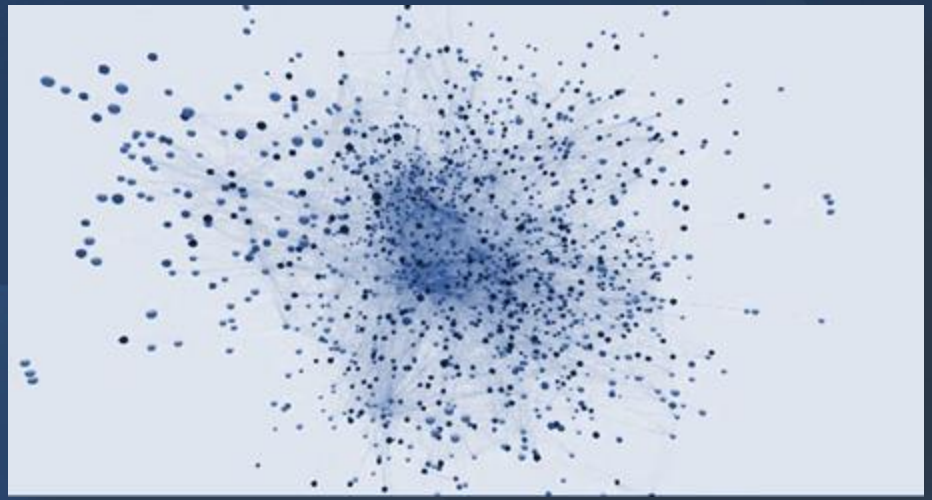
Visiba Triage : Clinical decision support tool



- Trained by >100,000 real world cases
- Continually monitored and revalidated by clinician input
- 3.2% disagreement with model by 111 clinicians, used to retrain model
- Medical Device (Class I, Class IIA pending)

Evidence base

Paper	***AI-driven Triage in Emergency Care: A Double-Edged Sword?***	**Safety and Efficacy of AI in Autonomous Triage: A Multi-Center Study**	**Meta-analysis: Autonomous AI in Healthcare: A Safety Assessment in Triage Systems**	**Evaluating the Safety of AI in Autonomous Emergency Triage: A Retrospective Cohort Study**	**Artificial Intelligence and Autonomous Decision-Making in Healthcare: Ethical and Safety Concerns**	**Meta-analysis: The role of artificial intelligence in emergency department triage**
Author & year	Liu et al. (2022)	Chen et al. (2021)	Harrison et al. (2023)	Nguyen et al. (2023)	Rao et al. (2022)	Wright, A and Sohn. (2023)
Journal	The Lancet Digital Health	Journal of Medical Systems	BMC Medical Informatics and Decision Making.	European Journal of Emergency Medicine.	Journal of Medical Ethics.	*Journal of Emergency Medicine*, 2023.
Conclusion	Autonomous AI decision-making in triage shows promise but poses risks that necessitate human oversight.	AI is not yet reliable for fully autonomous decision-making in complex medical scenarios.	Autonomous AI in triage requires stringent safeguards, as current systems are prone to errors in complex cases.	Autonomous AI decision-making in triage increases the risk of errors; human oversight remains essential for patient safety.	The safety of fully autonomous AI in triage is questionable, and ethical concerns about accountability and transparency remain unresolved.	The paper concludes that AI shows promise but must be integrated cautiously, with human oversight remaining crucial.

Systematic review and meta-analysis has consistently shown AI triage tools are not yet safe to deploy to act autonomously

Therefore, we take a **clinician-in-the-loop** stance.

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NHS 111 Smart Triage Service

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Whole System Impact Report : Reviewing the Impact of the NHS 111 Smart Triage Service on Clinical Outcomes

Context

The NHS 111 Smart Triage Service is an AI-driven digital front door used to improve system resilience, enhance patient experience and support clinical decision making within integrated urgent care. The service is powered by medical device, Visiba Triage, and is delivered in partnership with NHS England, London Central & West Unscheduled Care Collaborative and Visiba.

Innovation

The NHS 111 Smart Triage Service generates a clinical summary for clinicians to review before speaking to the caller, which presents clinicians with:

- A prioritisation score indicating the urgency of the case
- Differential diagnoses and associated probabilities
- Clinical history including images/videos, input by the patient and analysed by the AI model

Impact on Clinical Decision Making

To understand the impact the clinical summary had on clinical decision making, we analysed 790 patient assessments conducted with the Smart Triage Service's clinical summary, benchmarked against a control group in the same time period.

This analysis showed that when clinicians used the Smart Triage Service's clinical summary, there was a significant reduction in onward referral to NHS services and a significant increase in case closure within the Clinical Assessment Service (CAS).

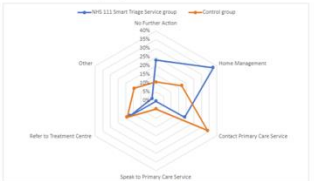

Figure 1 : Summary of assessment outcomes for NHS 111 Smart Triage Service users vs a control group from the same cohort and time period

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…a Triage is designed to aid clinicians, providing more information to …n a clinician reviews a patient, they take into account the clinical …and consult with the patient as needed to make an informed decision

…ce were surveyed, to understand how this impacted their decision …4.1/5 average rating, when asked how strongly the clinical summary …g. GP & Clinical Director, Dr Laura Geddes, commented:

…healthcare has been well received by our clinicians. We have …ability to support, empower and deliver the best care for our

…rd impact of enhancing triage at the front door of NHS services :

	Urgent Treatment Centre	*Primary Care*	*Home Management*
	- 6%	- 35%	+ 35%

…NHS 111 Smart Triage Service significantly reduces the likelihood of …urther NHS touchpoints that may not be necessary and improving …expanding the delivery of Smart Triage Services to broader case …nt safety being our primary focus.

…y 2024

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Service Evaluation : NHS 111 Smart Triage Service

Introduction

NHS England's London team oversees the care of over 8 million people. London's Integrated Urgent Care (IUC) services direct over 1,000,000 calls each year, a number increasing year-on-year against a background of an increasing Primary and Secondary Care backlog and fiscal pressure.

IUC pathways are traditionally labour-intensive, with an average call handling time of 19 minutes at the first line of assessment. Challenges with workforce mean that between 5-35% of calls to 111 services are abandoned by the patient, before a call handler/health advisor answers. Of those that reach a call handler/health advisor, a high proportion are then assigned a high-intensity pathway (such as ambulance deployment, emergency department redirection, or urgent clinical call back). This model of IUC services presents a significant challenge for an ageing and growing population.

Aims

The 111 Smart Triage Service, delivered using Visiba Triage (AI-enabled triage technology), was introduced with NHS 111 and Clinical Assessment Service provider London Central and West Unscheduled Care Collaborative (LCW UCC) with the following project aims:

- Offer patients immediate placement of the patient's case in the IUC pathway, removing telephone waiting times for NHS 111 altogether
- Remove call handler resource from the first line of assessment where possible, unlocking resource for patients who are unable to complete the AI-enabled triage
- Reduce clinical time per case
- Reduce inappropriate clinical touchpoints
- Unlock call handling resource to manage complex calls where an AI cannot currently analyse complex context. Examples include; safeguarding, palliative care patients and those with an Urgent Care Plan with healthcare needs.

The project aims were mapped against the NICE Evidence Standards Framework for Digital Health Technologies (DHT), which outlines a clear list of expected standards and the forms of necessary evidence to meet them.

This evaluation aims to collect real world data from the implementation of Visiba Triage. We studied the performance of the technology across the first three months of adoption from January to March 2024.

1

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…with or without a prescription, keeping …ts. Where a clinician did not have the …t the need for further assessment. This

…Service. Patients rated the Smart

…and differential diagnoses was …odel. Clinician feedback showed …come.

…ul digital channel shift in a cohort …call handler/health advisor for a …aiting time for telephone support.

…, with an average feedback score

…ecision making. Clinicians actively …ce monitoring. In the first three …ment with the AI's assessment in …e where appropriate.

…d within the 111 service without …ten as the control group. When …en at scale, the savings made in …ely be significant.

…early evidence to support Visiba …patient assessment, triage, and …ctivity whilst addressing local key

…rvice, data is continuously collected …e episode. The pathway is described

…exclusion criteria (patients under five …heir call & applies natural language …t Triage Service …e link to the NHS 111 Smart Triage …riage tool, including taking a picture …send the case to the CAS team with …ated by the NHS 111 Smart Triage

…symptom …e patient) and performed by the AI …se an appropriate management plan. …ously collected. The control group …art Triage Service but chose not to

…his was a 21.8% uptake in all eligible …fore requiring no call handler/health

…ed to aid clinicians, providing more …clinician reviews a patient case, …Visiba Triage, and consult with the …linical management plan.

…ess relate to the impact on clinical …11 Smart Triage Service clinical …urther assessment. In these cases,

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Service evaluation

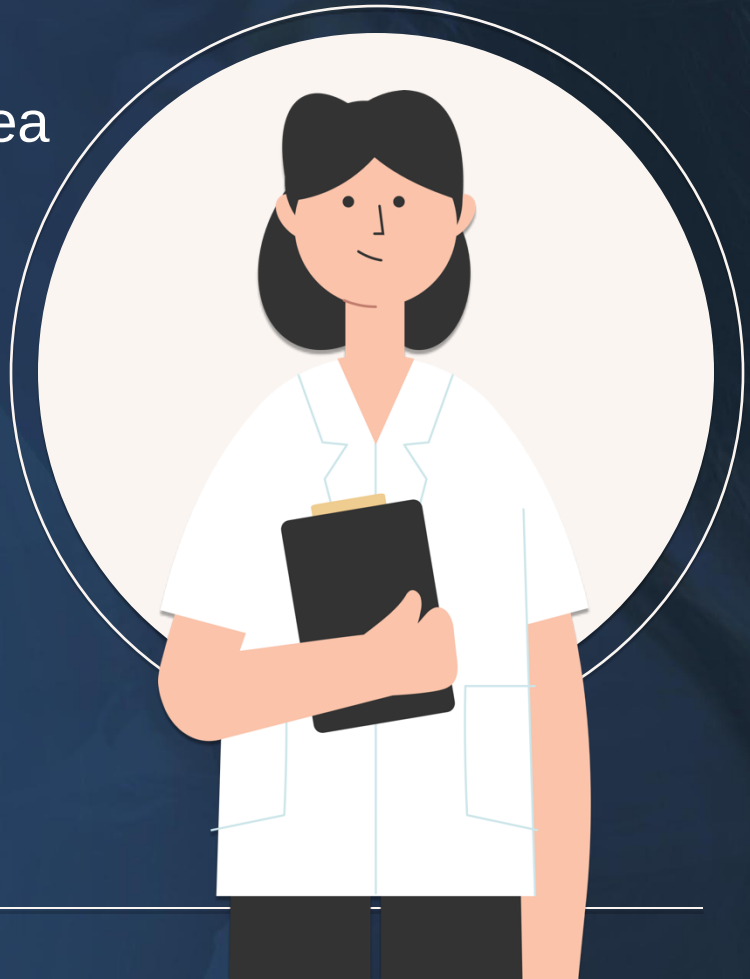
Provider	Cost of 111 service provision	>20% channel shift to non-HA pathway
	Call abandonment & wait time KPIs	0 second wait time for non-HA pathway
	CAS activity	Increased productivity (cases/hour)
System level (ICB)	Acute pathway usage	33% reduction in ED referrals from CAS
	Case closure within CAS	35% increase in no onward assessment
	Cost of 111 services	£2m/pa reduction on 111 activity (NCL ICB)

*NHS England Smart Triage Service. Jan-July 2024

Other stuff we do in the same area

- AI triage at the healthcare center to prioritize incoming patient cases for a more plannable work day, safer care for the patient and more efficient use of staff

- AI in care-to-care-flows where assistant nurses connect to nurses with the help of AI to simplify prioritization and standardised processes



Want to know more?

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