

# AI Enabled Consultations – Panel Members



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CEO eConsult



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## AI enabled consultations

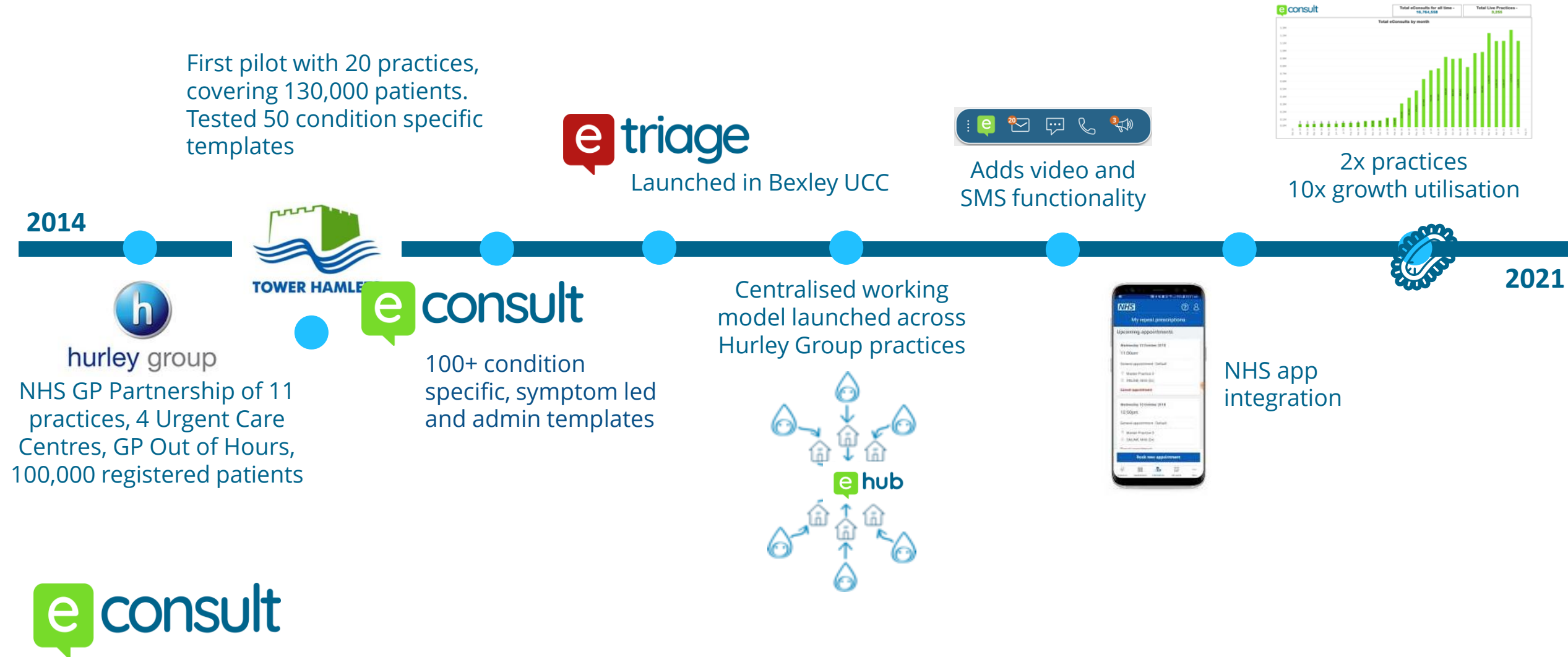
16<sup>th</sup> March 2022

Dr Murray Ellender FRCGP MRCEM – CEO and co-founder eConsult

Sunny Dosanjh – Healthcare Data & AI Lead, Deloitte

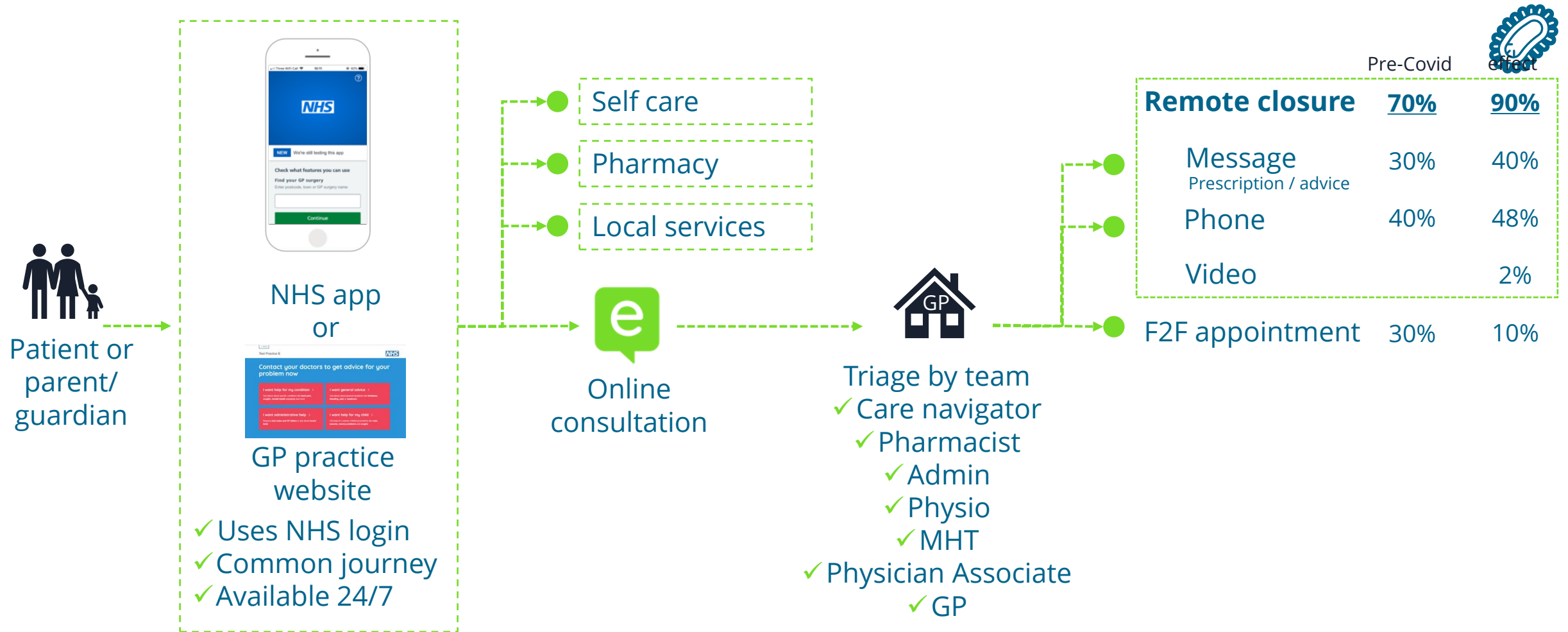


# Founded in one practice in the NHS in 2014, eConsult is now live in over 3,300 GP practices across the UK



# Patient flow through eConsult

1.2m online consultations/month and >22m processed to date



# Remote management – structured online consultation

Patients complete full and **structured histories**: mix of binary questions, confidence scoring, integrated questionnaires, photo uploads, free-text boxes and multiple choice questions.

- **90% managed remotely**
- **Improves access**, but does not open the flood gates to **high volumes** of **low quality, high risk** submissions.
- **Safety: red flag questions** identify and intercept patients presenting urgent symptoms



Alex test practice econsult

You may want to check the patient's personal details against their record.

Online consultation request for  
Daffy Duck (Male, Age 34)  
Depression

Submitted on 22-06-2020 at 11:24:36  
eConsult reference number for this request: 7CE97FA9

Contact phone: 01273200300  
Patient's date of birth: 02-02-1986

Contact email: patient-daffy@gmail.com  
Patient's address: 18 Test Street, London, NW1 1JK

**RESPONSE NEEDED BY:**  
6:30PM on Tuesday, 23rd of June. A same day response is best.

**SEND DAFFY A MESSAGE:**  
Click here or go to <https://alextest.webgp.com/pcm/TRYLVPDKHY> and enter this consultation PIN: JY5QHS  
This link will expire on Thursday, 9th July.

**PHQ-9**  
19 Moderately severe depression

**IDEAS, CONCERNS AND EXPECTATIONS:**

Before we ask you detailed questions about your condition, please tell us what you would like to achieve from this consultation?	I want to feel happier
Is there any particular treatment you would like to request?	Don't know
Would you like help from a particular GP? If the doctor that you requested is not available, another doctor at the practice will contact you	No

**CLINICAL QUESTIONS:**

Have you seen your GP about depression or symptoms related to depression in the past?	No
Please tell us how long you have felt like this for?	1-3 months
On a scale of one to ten, how severe would you say your low mood is at present?	7

**PHQ-9**  
19 Over the last two weeks, how often have you been bothered by any of the following problems?

# Focus on Clinical Safety



11 years experience in online consultation  
22 million+ eConsults submitted across  
3,300+ practices



- **Unique, dynamic red-flag** system to identify and redirect patients with urgent symptoms
- 100,000+ patients red flagged out of practice every month



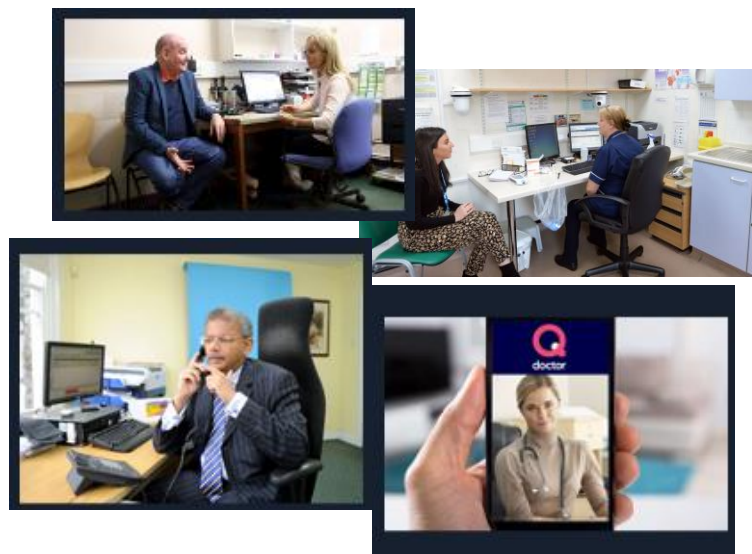
# Synchronous....

vs.

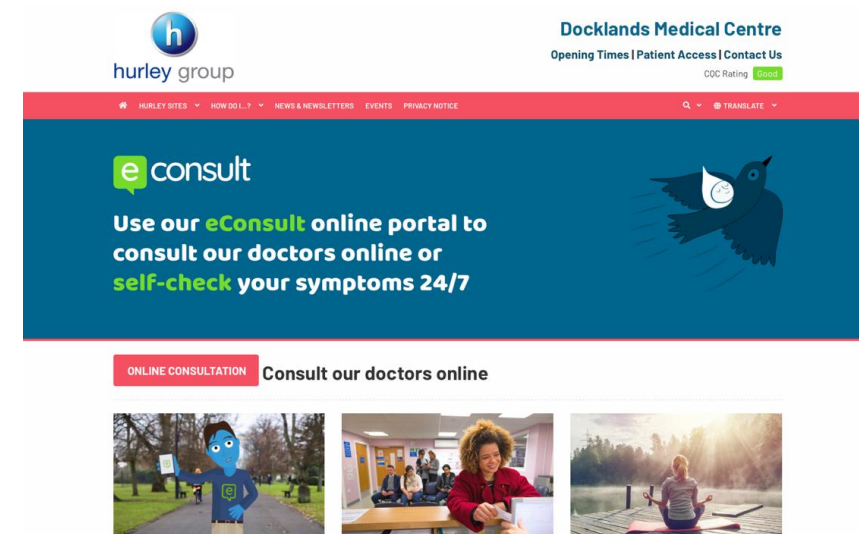
# ...asynchronous

Still accounts for most journeys

On the rise... and will only grow.....



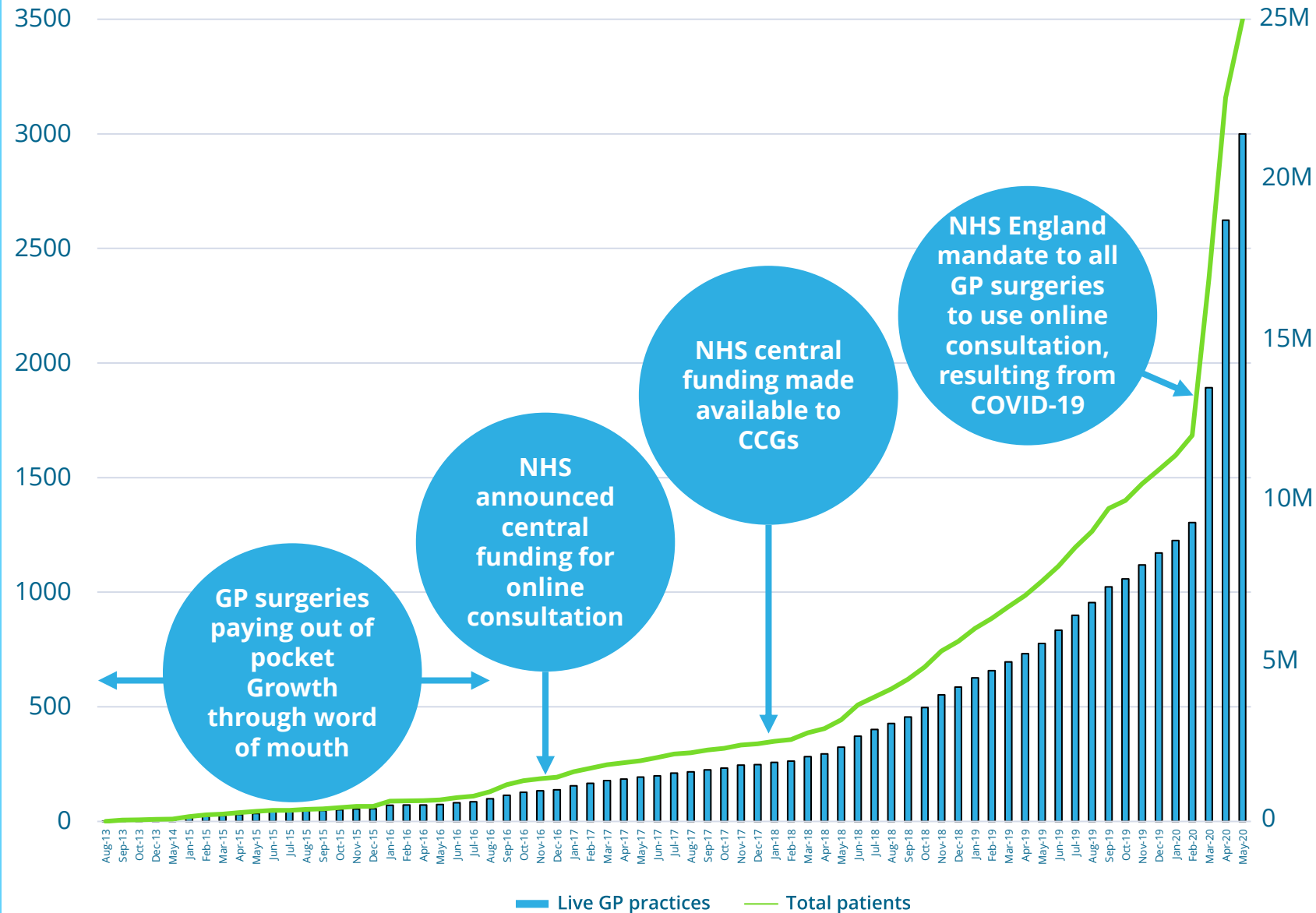
300m per year in GP  
20m per year in UEC  
120m per year in out-patients



1.2m per month in our practices  
That's 10% of the 12m/month  
The only way is up 🚀

# The eConsult journey in primary care

Today, over 40% of  
UK GP surgeries use  
eConsult – market  
leaders in digital  
triage



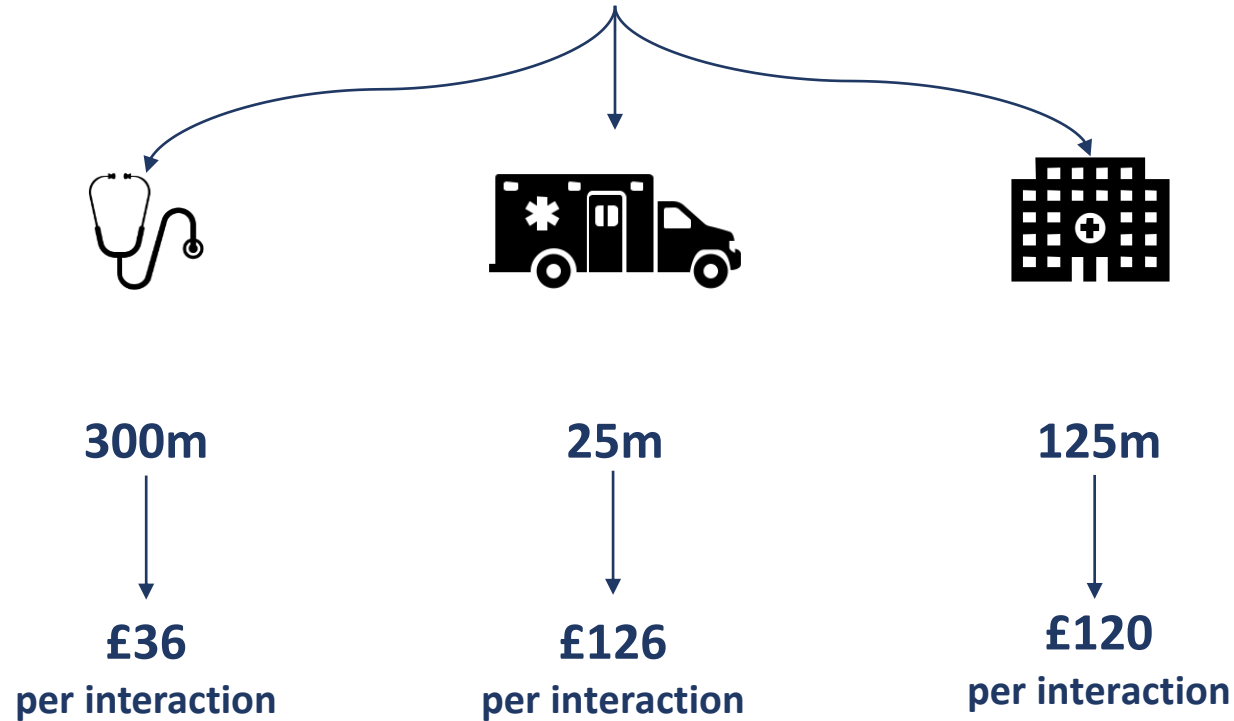


Poor quality and disconnected  
triage costs the NHS

£3.25bn

per annum

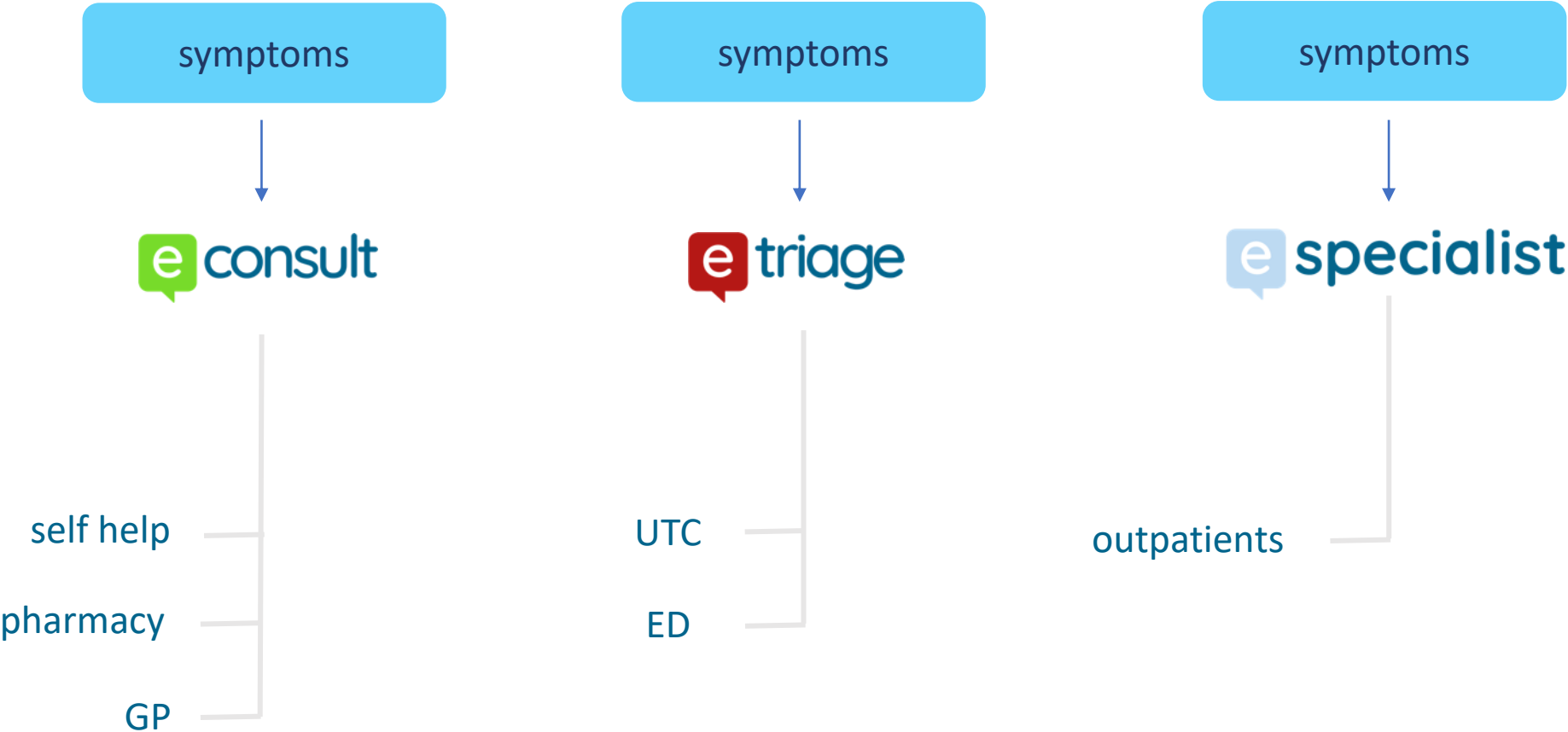
**450m** patient appointments every year



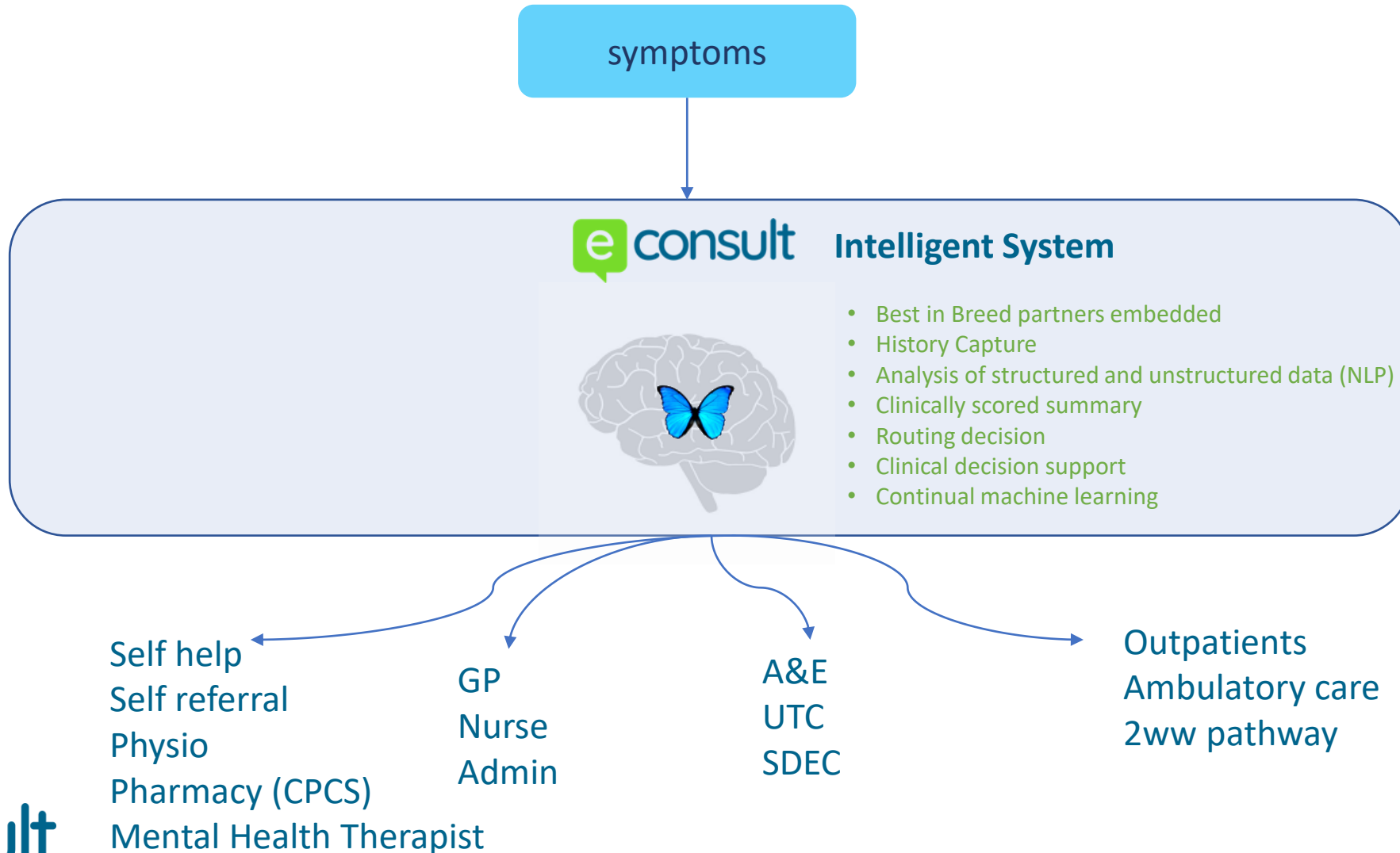
still **>90%** delivered face to face, due to ineffective triage

**eConsult is the UK's leading clinically led  
digital triage platform and we are on a  
mission  
to reimagine healthcare...**

# Operating Platform.....from 3 entry points covering 3 doors



.....to 1 patient centric O.S to all doors, available from home



# Strategic alliances

## Primary



ACCELERATED  
ACCESS  
COLLABORATIVE



## Urgent and Emergency



**NHS**  
Homerton  
University Hospital  
NHS Foundation Trust

**NHS**  
Western Sussex Hospitals  
NHS Foundation Trust

## Specialist

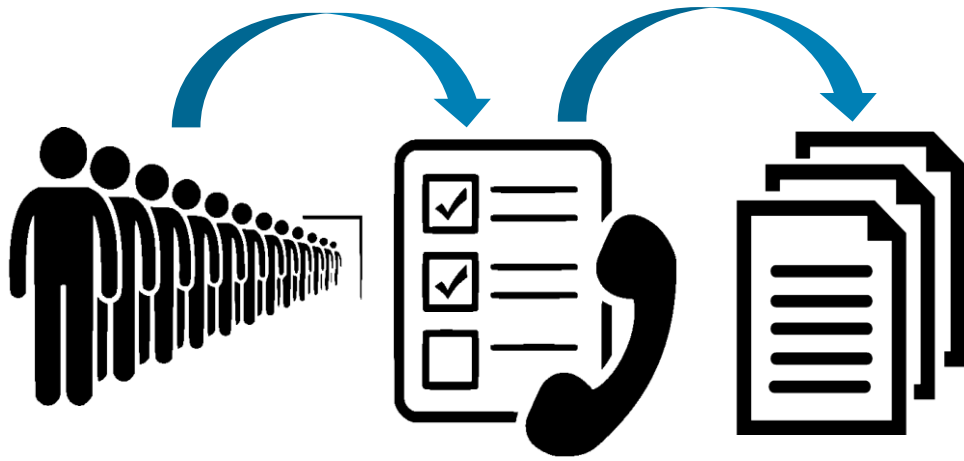
**NHS**  
England

**NHS**  
Mid and  
South Essex  
NHS Foundation Trust



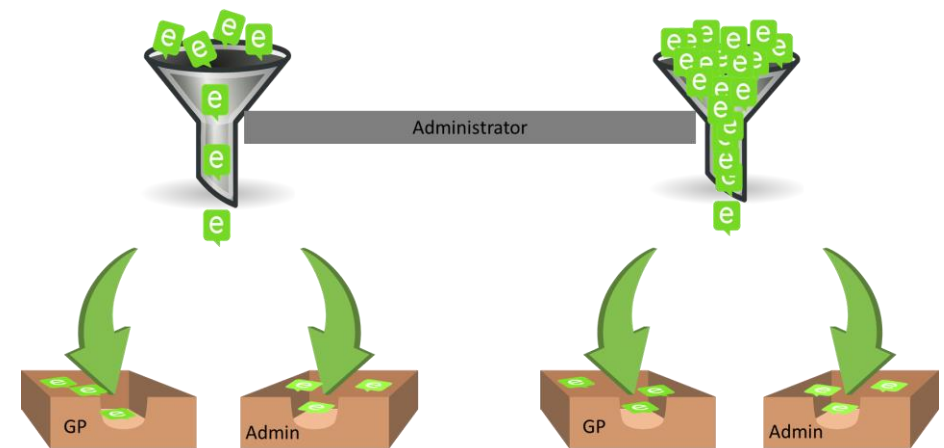
# What problem do we need to solve?

## The 'volume' problem



- **10X growth** from 2019 to 2020
- **1M** eConsults per month
- **0.5 WTE** admin staff required per practice and **0.5WTE** clinical staff

## The 'filter' problem



- eConsults need to be triaged **accurately** and at **speed** to avoid delays in care
- eConsults could be triaged to **many different roles**, including the new primary care roles



# How are we solving that problem?

## eHub – A smart inbox



AI powered triage engine



Uses ML to learn and evolve



Individualised workload view

The screenshot displays the eHub smart inbox interface. On the left, a list of patient cases is shown, including Mary Jones (F, 67) with Depression and Breathing problems, and Francesca-Angelica Agathangelou (Female, 67) with Depression. The main panel shows the detailed view of Francesca-Angelica Agathangelou's case, including her symptoms, clinical questions, and health history. The right sidebar contains a Signpost section with fields for Role, Urgency, Mode, Team, and Status, and a Logbook section with a list of activities.

Reference ID: 71639BEE Submitted: 11-01-2022, 07:59

Francesca-Angelica Agathangelou (Female, 67)  
Submitted by Frank Agathangelou (Husband)

**Depression** GAD7 14 Moderate Anxiety PHQ-9 9 Mild Depression

A response is expected by 18:30 on Friday 13th January. A same day response is best.

☒ View All (63) ☐ Free text (6) ☐ Flagged answers (3) ☐ Images (2)

**Ideas, concerns & expectations**

☒ Please tell us in a few words how we can help. My back is sore and I need to see the GP and get some treatment - I can't move...

☒ Please tell us what you have tried. I've taken diazepam but it's not working.

**Clinical questions**

☒ Please describe your symptoms. Pain in my spine, hurts to sit.

☒ How did you injure your back? Twisting

**Health history & QOF questions**

☒ Multiple choice question (non-flagged) Answer

☒ Multiple choice question (non-flagged) Answer 1

☒ Multiple choice question (non-flagged) Answer 2

**Signpost**

Discard changes Save changes

Role Empty...  
Urgency Empty...  
Mode Empty...  
Team Clinical  
Status Waiting

☐ Patient matched in clinical system  
☐ Manually saved to clinical record

**Logbook**

Show: All Activity Comments

NL Leave a comment...

AI AI updated the Team None > Clinical 12/01/21, 08:00  
AI AI identified the patient in EMIS 12/01/21, 08:00

# How does it work?



## eConsult Submission

- Patient submits and eConsult
- eConsult pushed to the cloud via an API to the AI triage engine

*I've been having a **burning sensation** for 2 days when I pee and have been **going more often**. I **don't feel hot** or have fever symptoms. I've had **uits** before, please can I have **antibiotics**?*



## AI Engine

- Core symptom dictionary
- Negation detector
- Spell checker (ML trained)

*Conditions = [ 'burning sensation', 'frequency' ]  
Negated Conditions = [ 'fever' ]  
'antibiotics' corrected to 'antibiotics'  
Diseases = [ 'utis' ]  
Frequency + burning sensation + antibiotics = UTIS*



## Clinical condition mapping

Condition	First	Second
UTI	Pharmacist	PA
Contraception	PA	Nurse
Back problem	FC Physio	PA

- eConsult ref: j3909f3d
- Assignment: Pharmacist
- Condition : UTI



## User interface

- AI triage decision pushed to the eHub user interface via API
- Re-distribution data feeds back to cloud database
- Write direct to electronic patient records
- ML algorithm evolves based on outcome data

# What are the benefits?



**Free up 0.5 WTE GP Time** - Reducing time spent per eConsult and GP clinicians only seeing relevant eConsults.



**Freeing up to 0.5 WTE admin staff** Automated distribution of all eConsults, ability to redirect and less than 1% sent to admin where GP review required.



**Prioritise your focus:** Immediately visible list of presenting complaints and risk flags to help you focus on those with more urgent needs first.



**Plan ahead:** Management dashboard using AI to predict (3 month+) day-to-day demand and real-time ability to react on the day.

# Coming Soon...

## Appt channel



Predicts whether an appointment should be delivered via F2F/Telephone/Video etc.

## Appt time



Predicts potential complexity and therefore length of time to close eConsult.

## Auto Referral



Identify and refer patients that need secondary care input.



Any questions....?

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**NHS<sup>x</sup>**  
AI Award 2021

 Digital Health.  
London | ACCELERATOR

FOR HEALTHCARE LEADERS  
**HSJ** 2017  
AWARDS  
Partnered  
with  
de Poel health+care  
**WINNER**

the**bmj**awards  
FINALIST 2018

 **PATIENT SAFETY**  
AWARDS  
2018 Winner  
Information Technology

**SBRI**  
HEALTHCARE  
Award 2021