

AI Enabled Consultations – Panel Members



Dr Murray Ellender
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AI enabled consultations

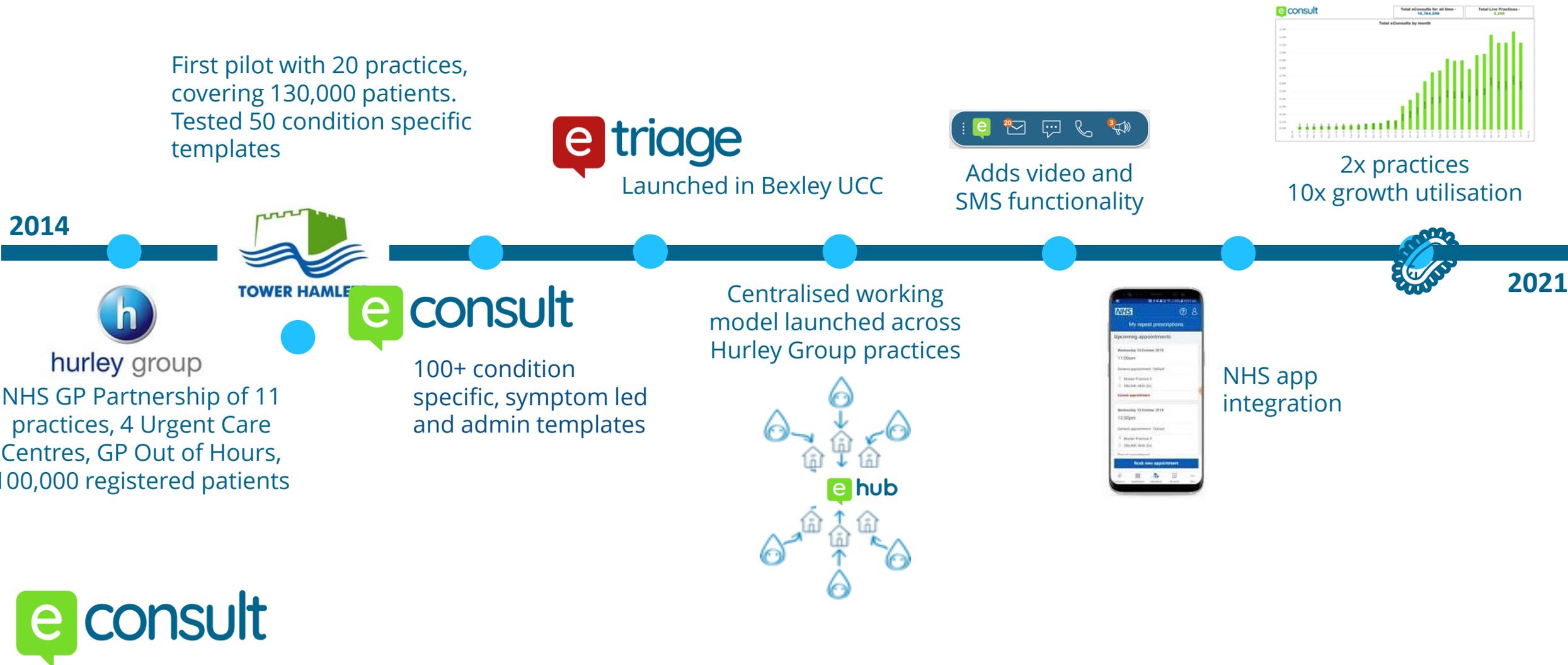
16th March 2022

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

Sunny Dosanjh – Healthcare Data & AI Lead, Deloitte

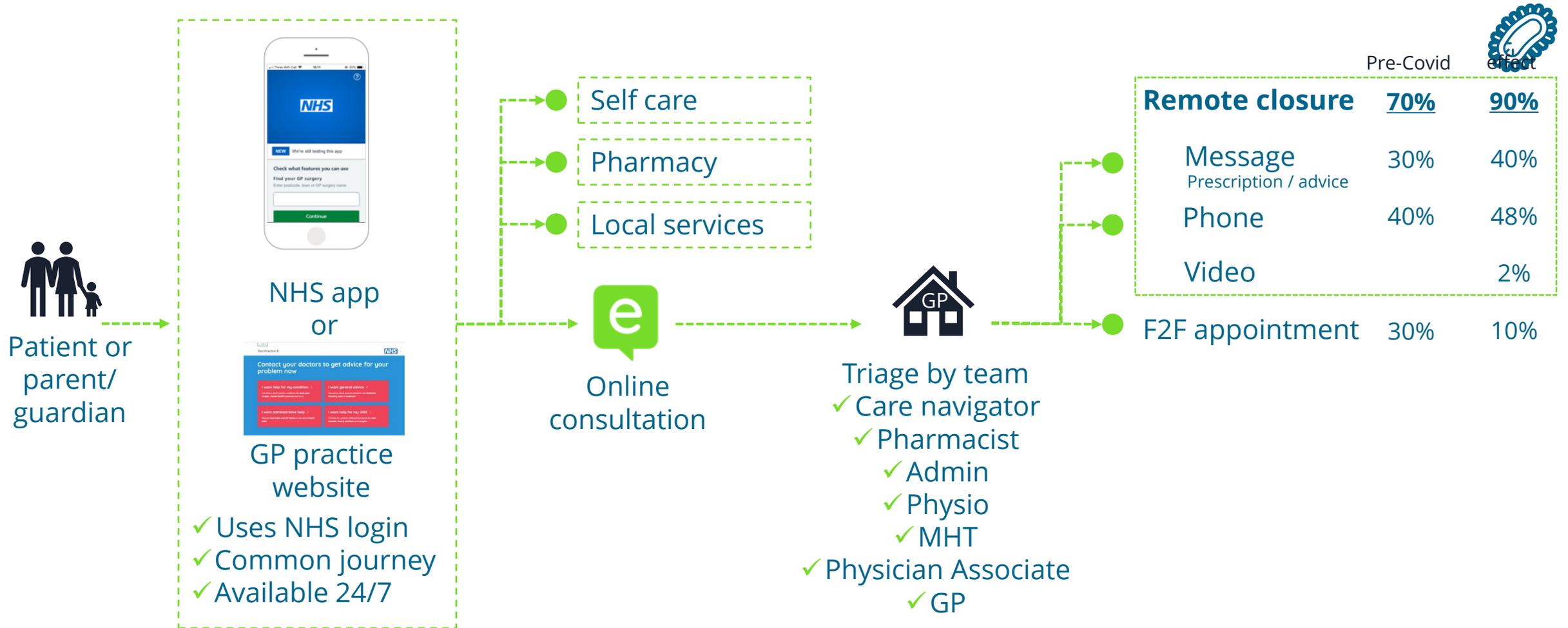


Founded in one practice in the NHS in 2014, eConsult is now live in over 3,300 GP practices across the UK



Patient flow through eConsult

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



Patient or parent/guardian

NHS app or GP practice website

- ✓ Uses NHS login
- ✓ Common journey
- ✓ Available 24/7

- Self care
- Pharmacy
- Local services

Online consultation

- GP
- Triage by team
- ✓ Care navigator
 - ✓ Pharmacist
 - ✓ Admin
 - ✓ Physio
 - ✓ MHT
 - ✓ Physician Associate
 - ✓ GP

Remote closure

Remote closure	Pre-Covid	effect
Message Prescription / advice	30%	40%
Phone	40%	48%
Video		2%
F2F appointment	30%	10%

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 

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 would you 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

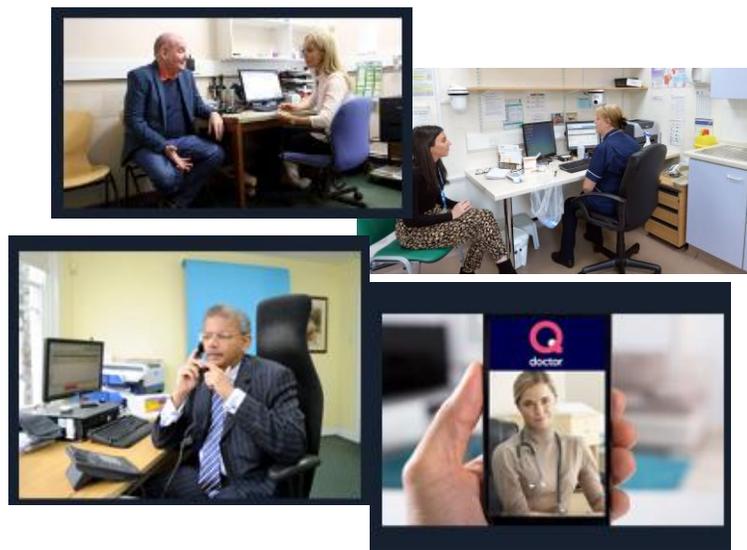
Synchronous....

vs.

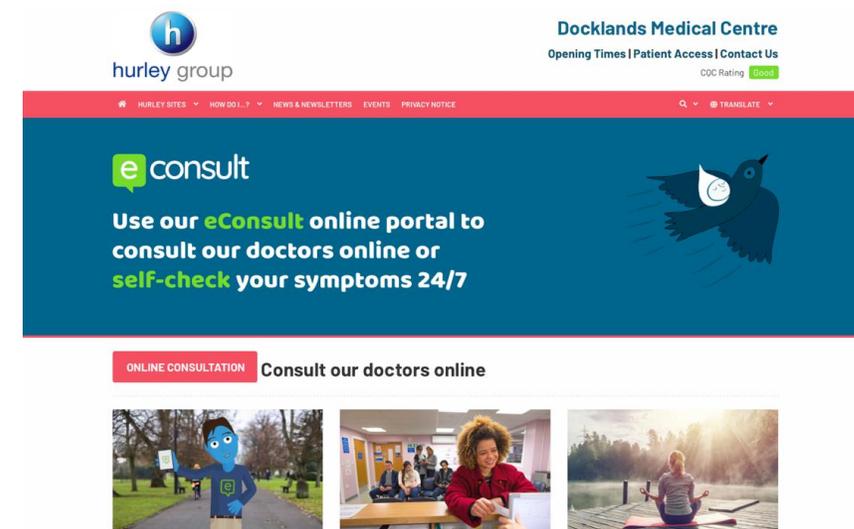
...asynchronous

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

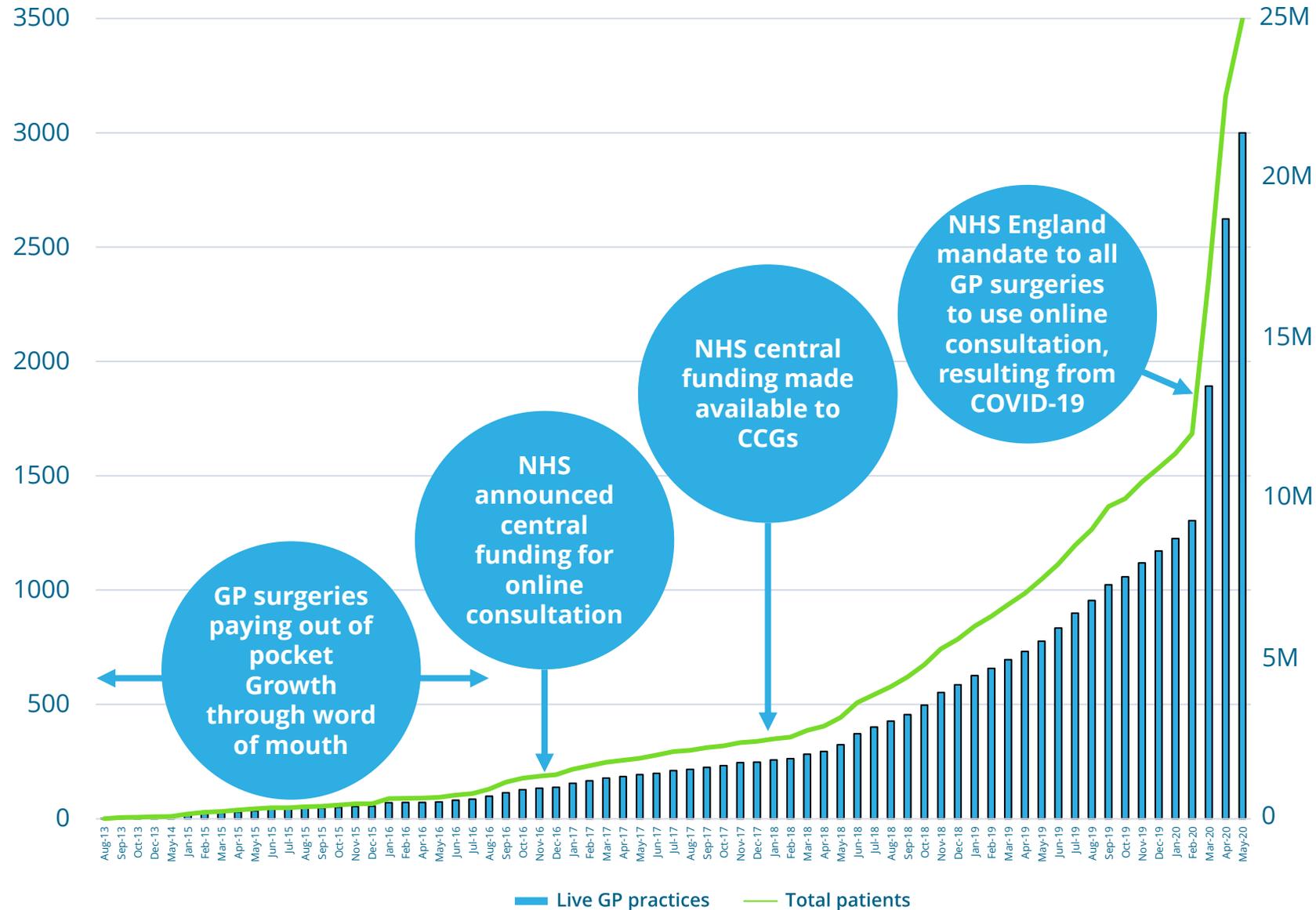


1.2m per month in our practices
That's 10% of the 12m/month
The only way is up 🚀



The eConsult journey in primary care

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

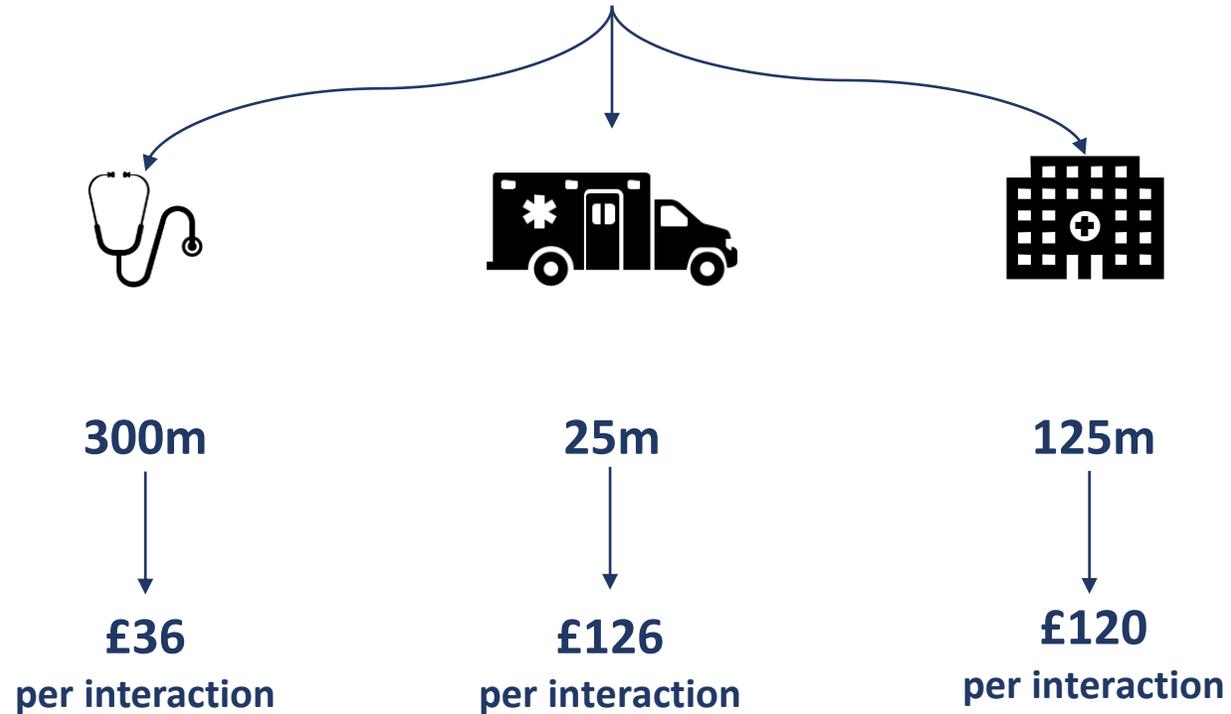


Poor quality and disconnected
triage costs the NHS

£3.25bn

per annum

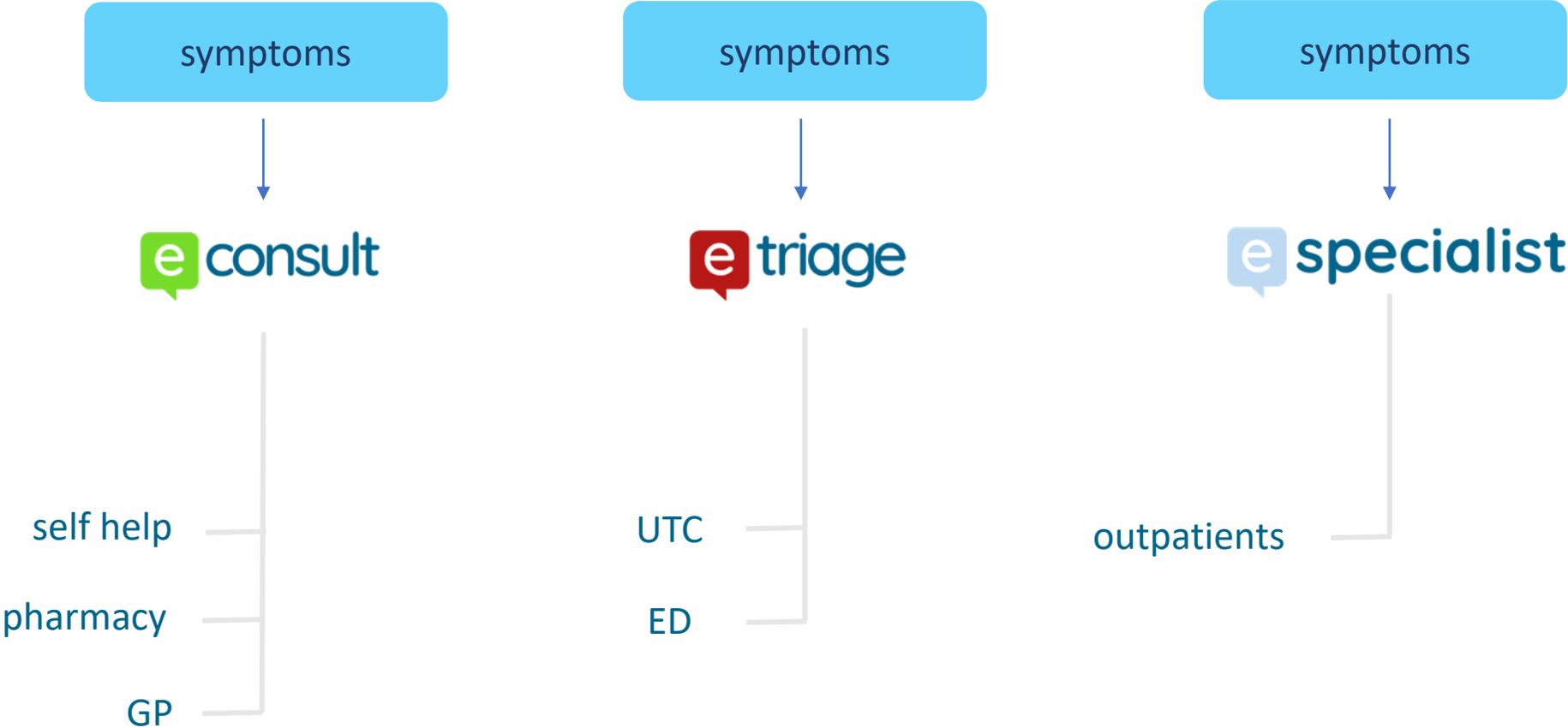
450m patient appointments every year



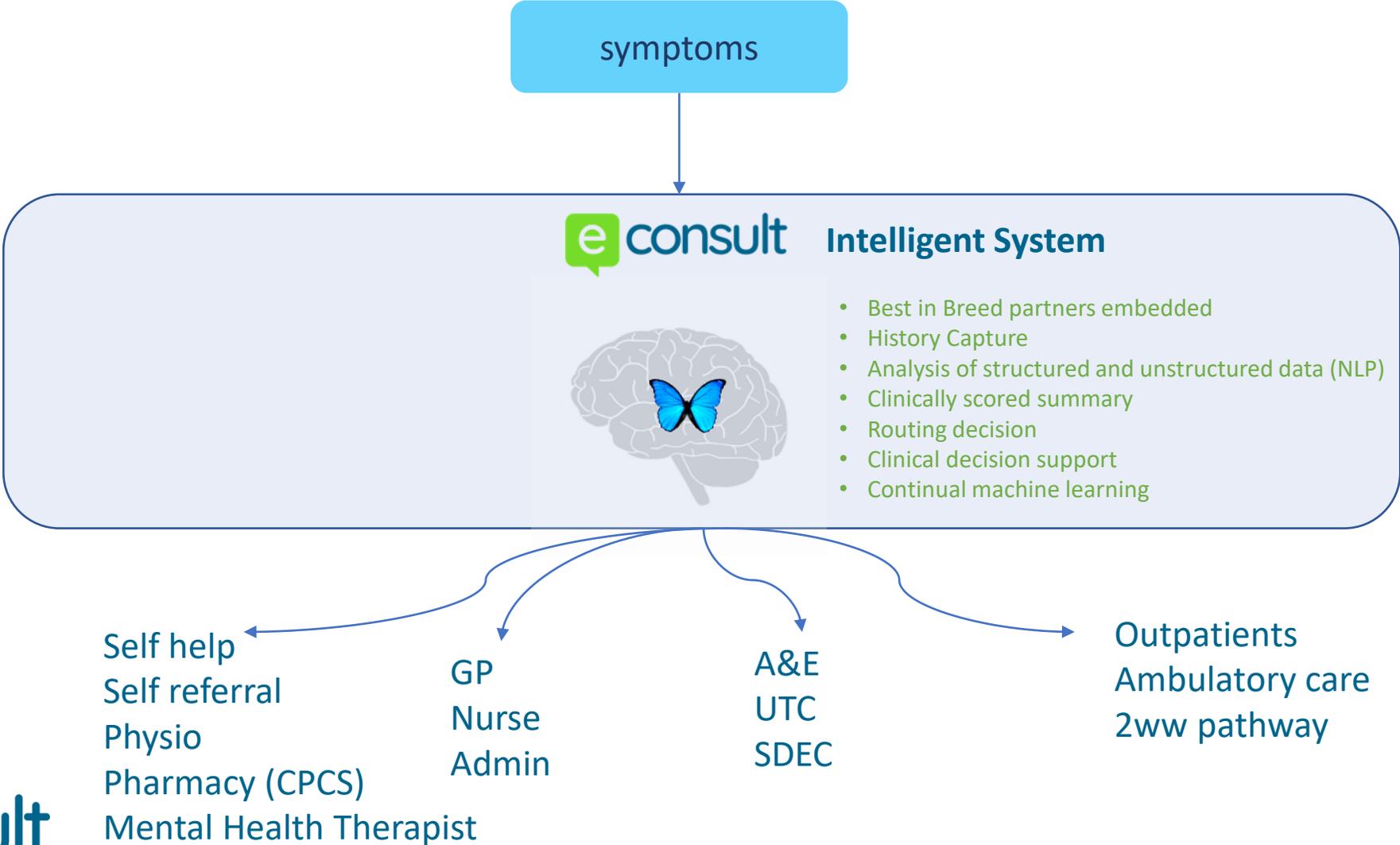
still **>90%** delivered face to face, due to ineffective triage

**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

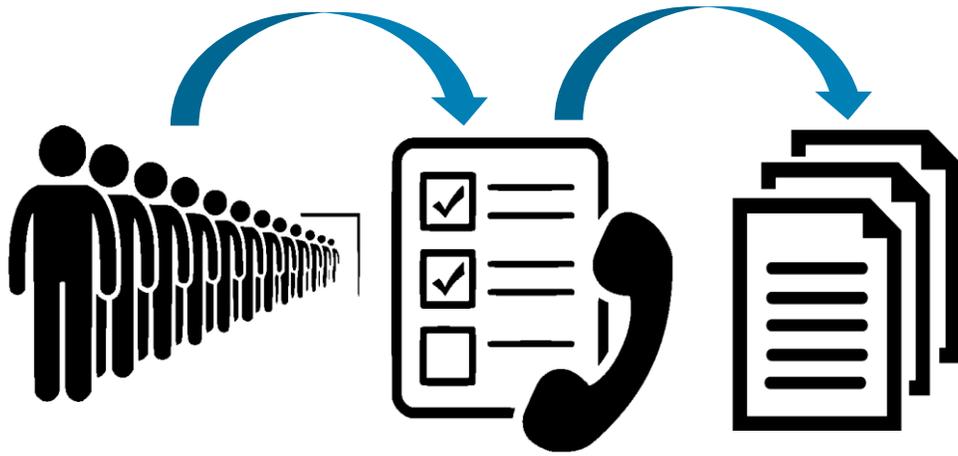
NHS
England

NHS
Mid and
South Essex
NHS Foundation Trust



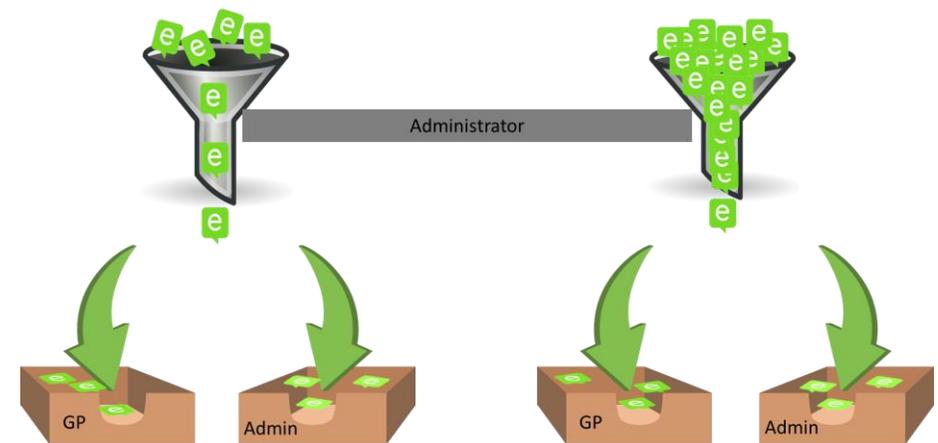
What problem do we need to solve?

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 problem, and Francesca-Angelica Agathangelou (Female, 67) with Depression. The main view shows the details for Francesca-Angelica Agathangelou, including her symptoms, clinical questions, and health history. The interface is dark-themed and includes a search bar, a signpost, and a logbook.

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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