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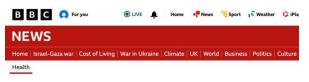
# Increasing productivity and bringing efficiency in plastics/hand referral

# Daniel Ray Chief Technology Officer Birmingham Women's and Children's Hospital



### 2020 Situation - Plastics on call

- **Diversity of patient pool** Patients came from more than 19 trusts from North to South of country
- **Inconsistency of referral** Some referrals on paper, quality of data not consistent
- Manual intervention Lot of manual intervention needed, up to 80 phone calls per week - internal and external
- Consultant time wastage The consultants spending more time (average 30 mins )on phone calls than actually treating the patient
- **Patient safety** Due to the poor data quality, Frequent interruptions when operating compromised patient safety
- Fragmented Care pathway Plastic trauma had no internal, locally and regionally recognized pathways and there was no automation in current pathways



## NHS waiting lists hit record high in England







and Children's

### What we wanted ?



Intelligent triaging and actioning system with the following features

- Accessible on Mobile and PCs
- Bespoke clinical pathways
- Effective and accurate triaging
- Triage cases into various pathways- Reject, advice and guidance
- Accept and bring back when wanted e.g., next day trauma list or clinic or other
- Accept and refer immediately
- Ability to send images/video of the condition
- Dashboard to review cases and communicate between clinicians and with patients
- Platform to be shared across other NHS organisations
- Integration into trust systems





### Solution – TriVice (Triage, Referral & Advice)

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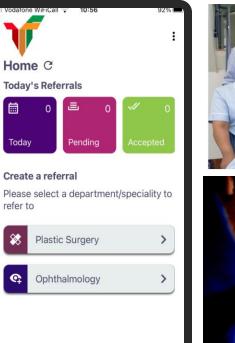
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**TriVice** Triage, Referral & Advice



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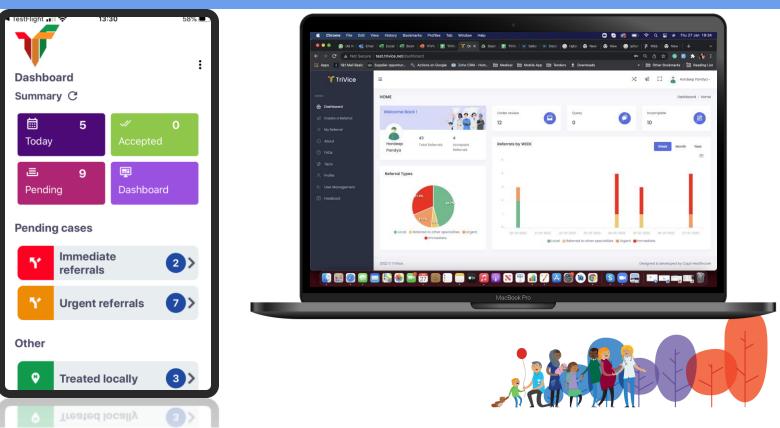






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### TriVice - Receiving end

### TriVice

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- Algorithmic assisted solution developed to minimise avoidable visits
- Decreases direct dependence on the availability of specialist clinicians.
- Enables remote clinical assessment using Algorithmic powered predetermined pathways of care
- Provides tailored clinical advice and guidance to the end user
- Designed for use across pre-hospital clinical professionals

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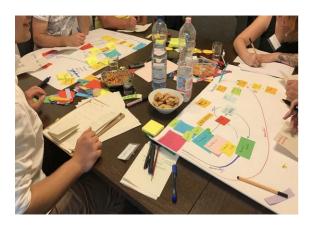
- □ Handling acute referrals from 19 NHS service provider
- □ More 1200 clinical users
- □ Processed over 2600 referrals
- $\hfill\square$  Called out as most innovative solution
- □ Live with 3 specialties and more specialties being considered



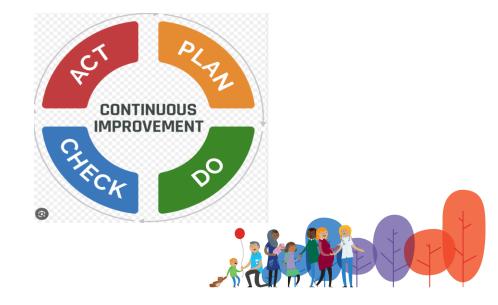
### Best Practices – Development 4C model

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 Co-Design : Co-design of the system with the users clinicians, hospital staff and patients



 Continuous Improvement: Incorporate mechanism of Continuous Improvement in your softw are development lifecycle paying extra attention to comprehensive pilot phase



### Best Practices – Development 4C model



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 Collaborate : Collaborated with stakeholders and redesigned the existing care pathways, streamlining the process and reducing manual steps in the pathways. We also worked with hospital IT teams and did high degree of integration with hospital systems



 Communication: Early & Frequent communication with relevant internal and external users helps maintain interest and acceptance of system



### **Best Practices – Training & Education**

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 Introduction : Various introductory sessions were conducted for Clinicians (Consultants, Registrars, Nurses) in run up to the Go Live

- **1:1 Training**: Speciality users were provided a 1:1 training on the use of the system
- External Training : Webinars and Digital Guides were published and shared with the larger external referring users
- Walk-in Training: Walk-in workshop sessions were held for users requiring additional help







- Patient are seen, treated and discharged by ED with advice from TriVice.
  Significant time saving for ED clinicians and patients
- Reduced or no waiting time for specialist's opinion, No wait, significant time saving for referrer, patient as well as plastics team
- Faster throughput of patients & less crowding in ED
- **Digital evidence** of information , pictures and advice instructions
- Time dedicated for seeing potentially extra 236 patients (30 minutes / patient)
- Urgent referral: patient was seen and treated by ED immediately
- No wait for busy plastic on call to come and see the patient, Immediate treatment, clear pathways Patient brought back next day for specialist surgical treatment in theatre, All info send to referrer and patient digitally

### Referring Clinician's time saving



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Pre-TriVice specialty referral and response time = 70 min (average) Post-TriVice speciality referral and response time = 10 min (average) Total time saving per patient / referral = 60 min (average)

Pathway Outcome	Counts in 6 months	Time saving
Urgent	118	118 x 60 = 7080 min
Referred to other specialty	13	13 x 10 = 130 min
ED Treatment	19	19 x 60 = 1140 min
Total timesaving in 6 months for one specialty		8505 min = 142 hours



### Benefits to patients



- In case of external referrals, no need for travel to BWC. Patient given immediate advise and immediate turnaround
- Patient given digital advise automatically in the form of instructions and leaflets
- Reducing carbon footprint
- Advise given can be counted as keeping patients out of the hospital
- Improved patient experience
- Increase in advice and guidance reduces hospital attendance
- Increase in direct patient communication replaces telephone, video or F-2-F follow up appointments
- Decrease in travel time for patients
- Decrease carbon emissions

