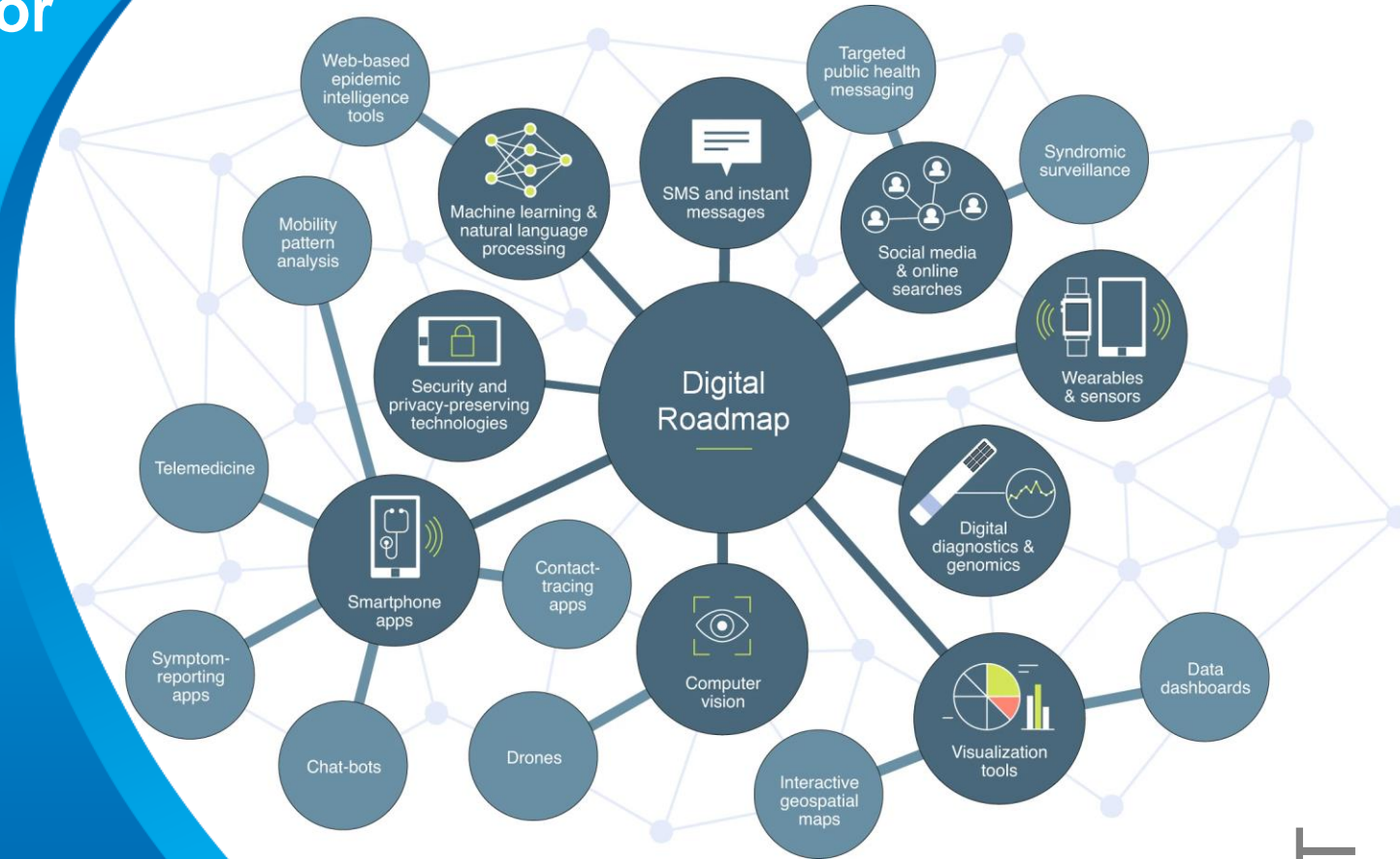


Approach of AI for clinical work floor

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Clinical lead Stroke physician
NEL ICS Stroke Lead

15th March 2022



DRAFT



Disclaimer

1. I am a Stroke Doctor who works on the natural neural network of the brain.
2. Firm believer CCIO that AI will be assisting clinicians and not replace.
3. I was the principal investigator of AI trial & had nothing to do with evil robots taking over.

Research

International
Journal of Stroke 

e-ASPECTS software is non-inferior to neuroradiologists in applying the ASPECT score to computed tomography scans of acute ischemic stroke patients

International Journal of Stroke
2017, Vol. 12(6) 615-622

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DOI: 10.1177/1747493016681020

journals.sagepub.com/home/wso

 SAGE

Simon Nagel^{1,*}, Devesh Sinha^{2,*}, Diana Day³, Wolfgang Reith⁴,

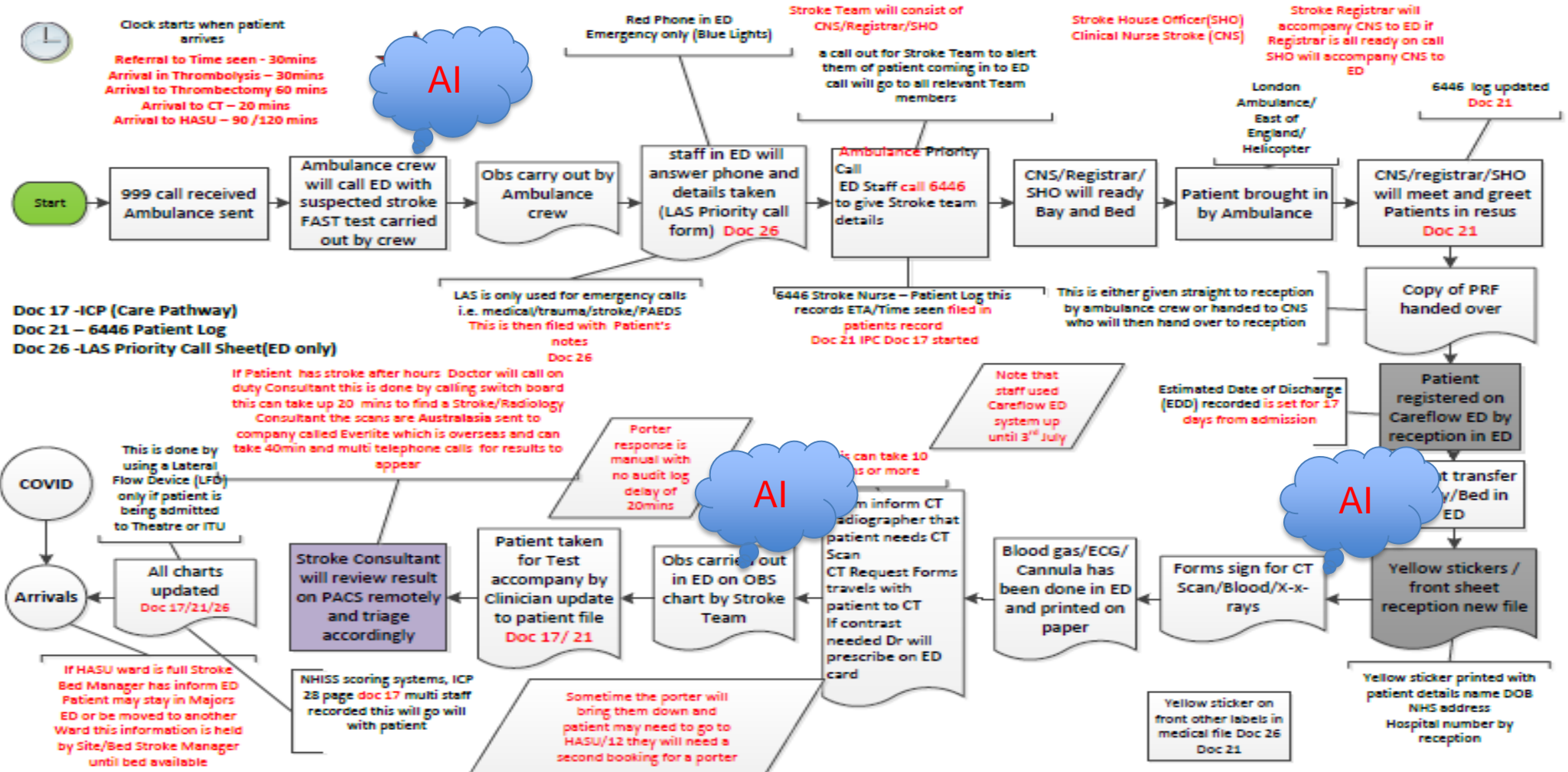


Stroke Clinical Pathway – The Process



| | | | | | | | | | | | | | |
|--------------------------|------|---------|--------------|---------|--------------|--------|------------|----------------|------|------|-------------------|------------------|-------------------|
| Blue Light Patient in ED | Risk | Process | Careflow PAS | Connect | Patient Flow | Vitals | Bluespiper | PACs/ Cyberlab | EPRO | iFIT | NHS Mail/ Outlook | External Systems | Excel Process Ste |
|--------------------------|------|---------|--------------|---------|--------------|--------|------------|----------------|------|------|-------------------|------------------|-------------------|

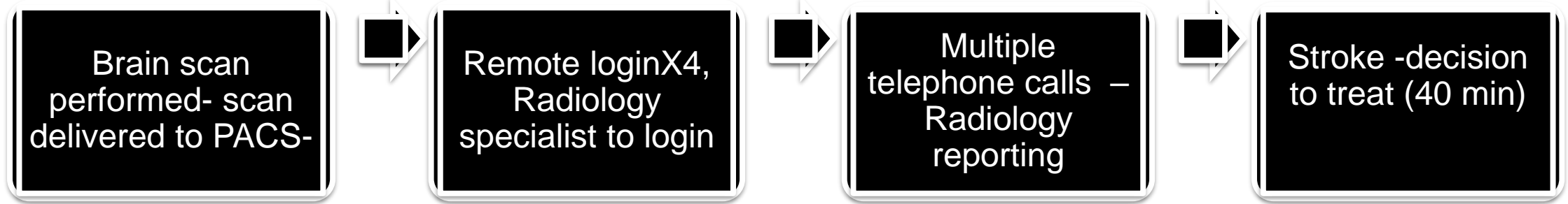
1 hour to see and treat Patient



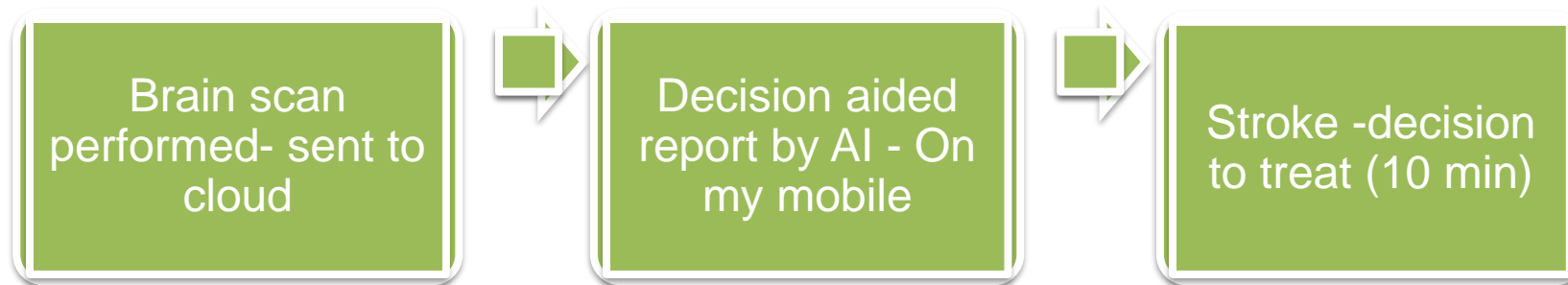
Ambulance arrival Blue light

Scan decision aid for clot removal or emergency drug. AI example 1/3

- The process takes a lot of time when I don't have time –



- What if

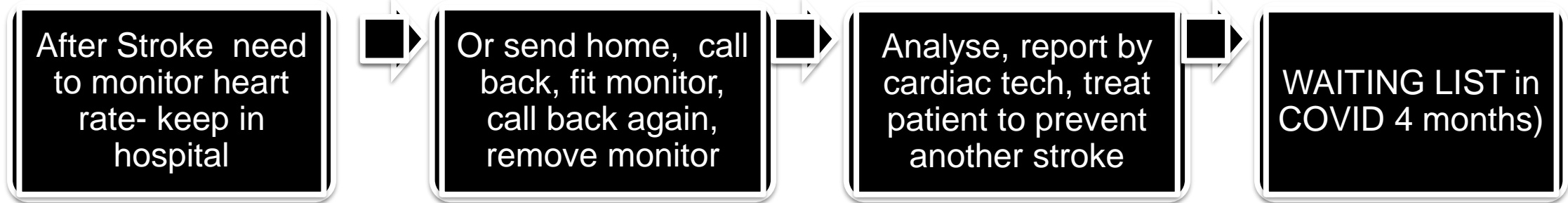


- What did I save



Smart heart rate monitor to stop another stroke-. AI example 2/3

- The NHS process takes a lot of resources, when I don't have resources



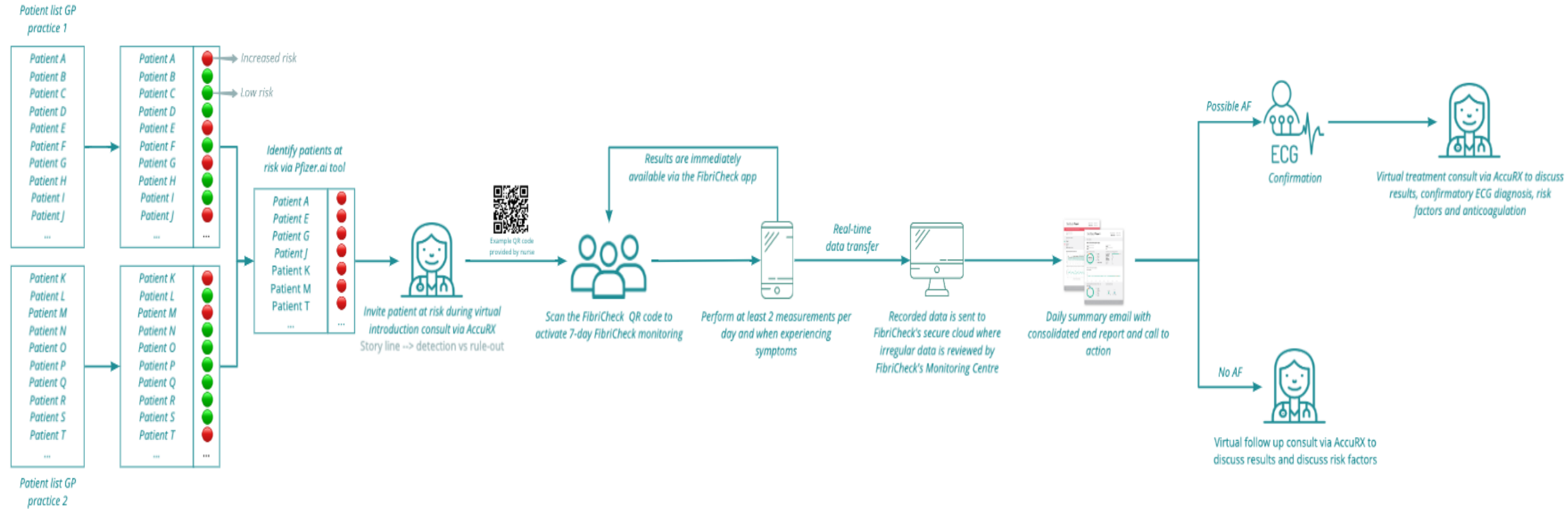
- What if



- What did I save



Stroke risk prediction and remote detection. AI example 3/3



- What did I save



AI and my clinical work floor

- Every minute count
- Limited resources with increasing disease burden
- Clinicians' human capacity vs computation of at-risk patients
- Any deviation from standard practice require robust evidence for patient safety
- Digital alien ship and clinical Digital leadership in people, process and product

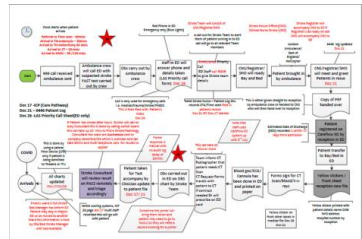


Five challenges on AI to clinical floor

1. Overpromise at the sale– Under delivery at floor gap
2. Evidence gap in life sensitive health areas- rigorous evaluation
3. Regulatory overkill versus free-thinking innovations
4. Procurement and DPIA – taking to the floor
5. Built-in Data bias and further cementing inequality



The Stroke Clinical process improvement-expectations journey



| | Queens Hospital Romford HASU Dec 2016-Mar 2017 | Queens Hospital Romford HASU Apr-Jul 2017 | Queens Hospital Romford HASU Oct-Dec 2018 | Queens Hospital Romford HASU Jan-Mar 2019 | Queens Hospital Romford HASU Apr-Jun 2019 | Queens Hospital Romford HASU Jul-Sep 2019 |
|--------------------------------|---|--|--|--|--|--|
| 1) Scanning | A | A | A | A | A | A |
| 2) Stroke unit | E | E | B | C | B | B |
| 3) Thrombolysis | D | C | A | B | B | B |
| 4) Specialist Assessments | C | D | B | B | B | B |
| 5) Occupational therapy | A | A | A | A | A | A |
| 6) Physiotherapy | A | B | B | B | B | B |
| 7) Speech therapy | A | A | A | B | B | B |
| 8) MDT working | D | D | C | B | B | B |
| 9) Standards by discharge | E | E | C | C | B | B |
| 10) Discharge processes | C | D | C | C | B | B |
| 11) Discharge processes | C | C | A | B | A | A |
| Patient-centred Total KI level | 57.6 | 57 | 82 | 78 | 86 | 86 |
| Patient-centred SSNAP level | D | D | A | B | A | A |
| Patient-centred SSNAP score | 57.6 | 57 | 82 | 78 | 86 | 86 |



@StrokeDSinha



Other AI potential on my clinical floor

