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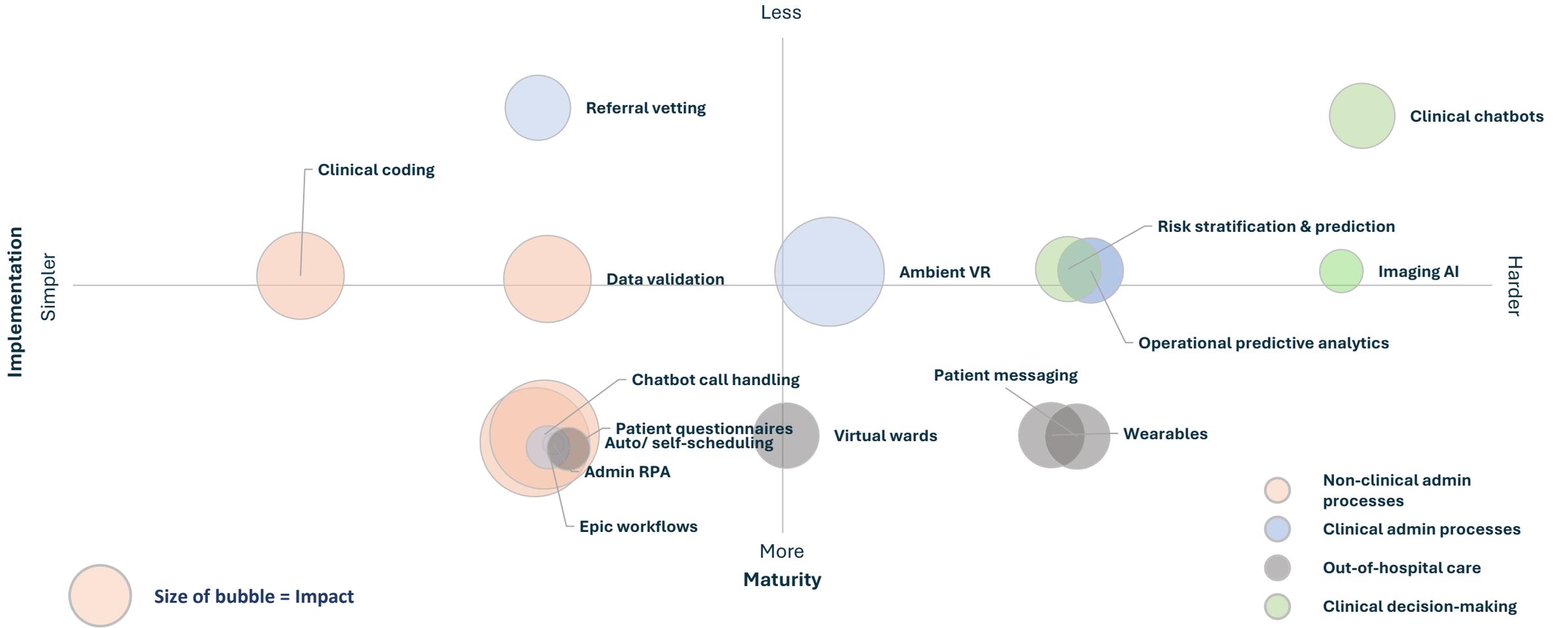
Innovation at CUH

23rd February 2026

Impact/feasibility matrix of healthtech solutions – August 2024

Innovation adoption programmes
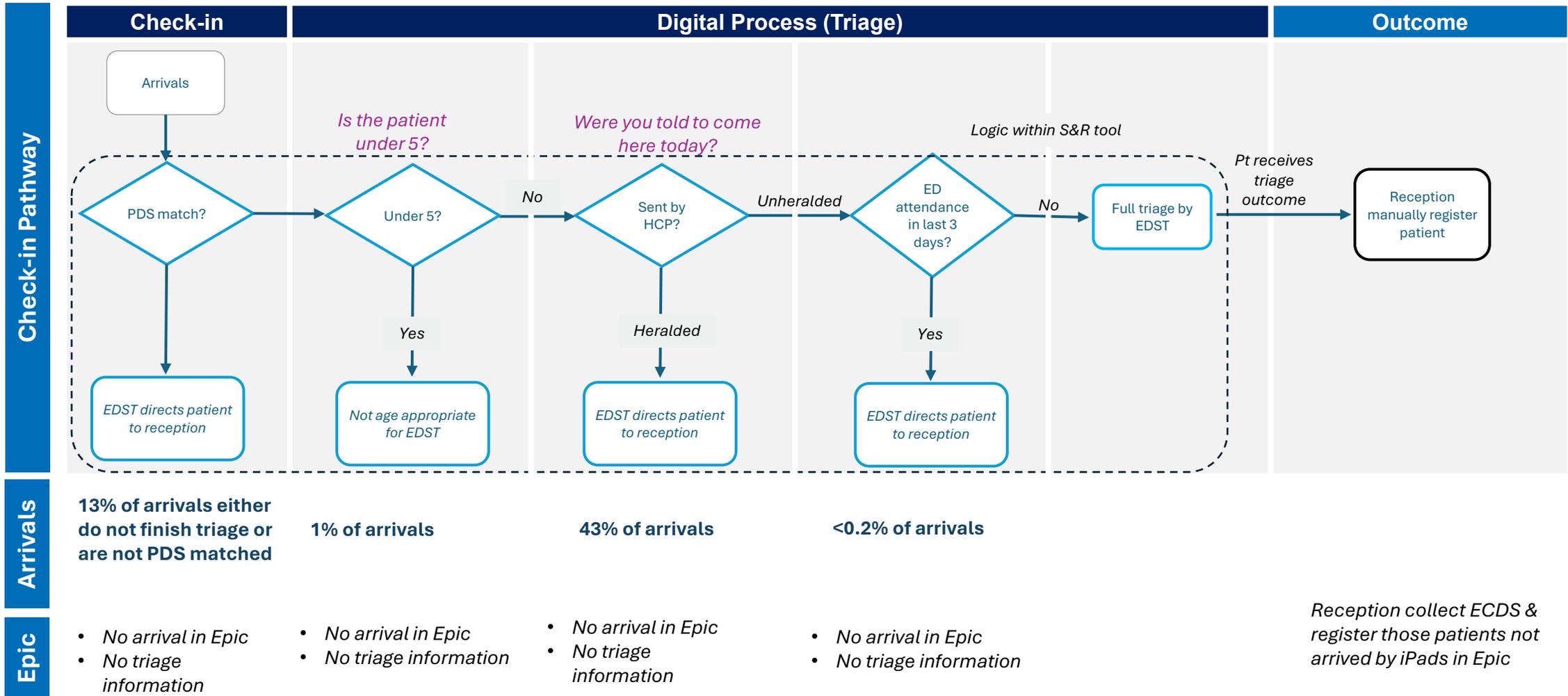
Digital Front Door for ED

Booking Optimisation Programme

Coordination Centre

Ambient Voice Technology

Microsoft Co-pilot

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Digital Front Door for ED

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| Check-in | Digital Process (Triage) | Outcome |

Check-in Pathway

Arrivals

Is the patient under 5?

Were you told to come here today?

Logic within S&R tool

PDS match?

Under 5? — No → Sent by HCP? — Unheralded → ED attendance in last 3 days? — No → Full triage by EDST — *Pt receives triage outcome* → Reception manually register patient

EDST directs patient to reception

↓ Yes
Not age appropriate for EDST

↓ Heralded
EDST directs patient to reception

↓ Yes
EDST directs patient to reception

Arrivals

13% of arrivals either do not finish triage or are not PDS matched

1% of arrivals

43% of arrivals

<0.2% of arrivals

Epic

- *No arrival in Epic*
- *No triage information*

- *No arrival in Epic*
- *No triage information*

- *No arrival in Epic*
- *No triage information*

- *No arrival in Epic*
- *No triage information*

Reception collect ECDS & register those patients not arrived by iPads in Epic

Digital Front Door for ED

SUMMARY

Introduce the NHS Streaming & Redirection tool for patients arriving at ED, UTC and Children's ED to be self-triaged via a kiosk to the most appropriate point of care within or outside of the Trust.

IMMEDIATE GOALS

Facilitate flow through the department & avoid some unnecessary ED demand through redirection to the community and other CUH services (e.g. UTC).

FUTURE AIMS

Self-triage at home via MyChart and/or web application, with direct self-booking into ED and UTC/MIU to manage demand & flow more efficiently.

Implementation

Delivered by Innovation with support from NHSE & 3rd party middleware for Epic integration.

Critical Risk

Some uncertainty as to the consequences of redirection to community & (in future state) of non-face-to-face access of ED services.

Progress & Benefits

- ✓ Successful go-live 1st December
- ✓ 2,200 patients completing self-triage each week
- ✓ Very positive patient feedback

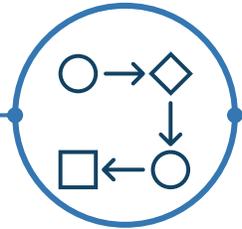# What's next: 111 and patient-initiated appointment scheduling

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Current state

Phase 2 -26/27 Pre-winter Implementation

Future state

Digital Triage

- **Implement S&R** with **Epic integration** and **physical check-in kiosks**
- Adoption of **BaRS use case 2**

1. Enhanced S&R

- Implement **booked UCC appointments** at reception & 111 to smooth UEC demand
- Enable **redirection of patients into the community**
- **Streamlined check-in process** for patients and reception staff
- Adopt **new features of S&R** as they go-live for timely data capture and clinical review

2. Full BaRs compliance

- **Adopt BaRs Use Case 1,** enabling 111 to book appointments into UEC
- Real-time, scheduled appointments for 111 accompanied by structured electronic referrals sent directly into Epic, including reason for referral and clinical context
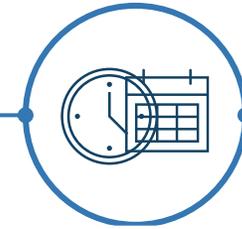
3. Appointment Self-Service

- **Go live** with **patient directed scheduling** of UEC appointments via **digital tokens following completion of S&R** triage

Remote care & Risk Stratification

- Develop **new models of remote ED care** for cohorts of patients
- Enable S&R to be accessed remotely, reducing unnecessary attendances
- Develop & implement **risk stratification & prediction tools** to prioritise & personalise care based on acuity & likelihood of deterioration

Booking Optimisation Programme

Current scheduling workflow

Appointment with a CUH clinician is **ordered**

Appointment is **scheduled** by staff

Appointment can be **viewed** on MyChart

Patient possibly called if **short notice cancellation**

Patient **attends** appointment

Future self-scheduling workflow

Appointment with a CUH clinician is **ordered via new order**
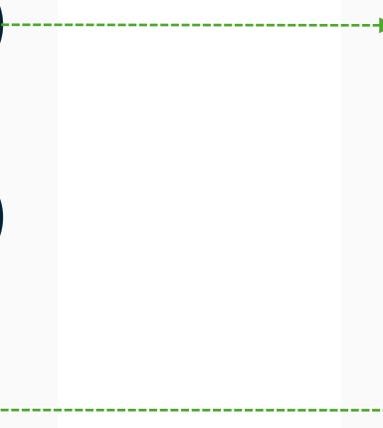
Appointment is **self-scheduled** on MyChart

Appointment can be **viewed** on MyChart

Patient alerted by e-mail/MyChart if **short notice cancellation available**

Patient **attends** appointment

Booking Optimisation Programme

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SUMMARY

Rebuild all outpatient clinic templates to enable self-scheduling, alerting when appointments available at short notice (fast pass), & clinician-level reporting of activity.

IMMEDIATE GOALS

Implement self-scheduling & fast pass as widely as possible, with growing access to patients as the programme progresses through specialties.

FUTURE AIMS

Provide the technical foundation for wider outpatient transformation, including risk stratification for personalised care, & remote monitoring.

Implementation

Designed & established by Innovation, supported by externally sourced programme management & Epic analysts
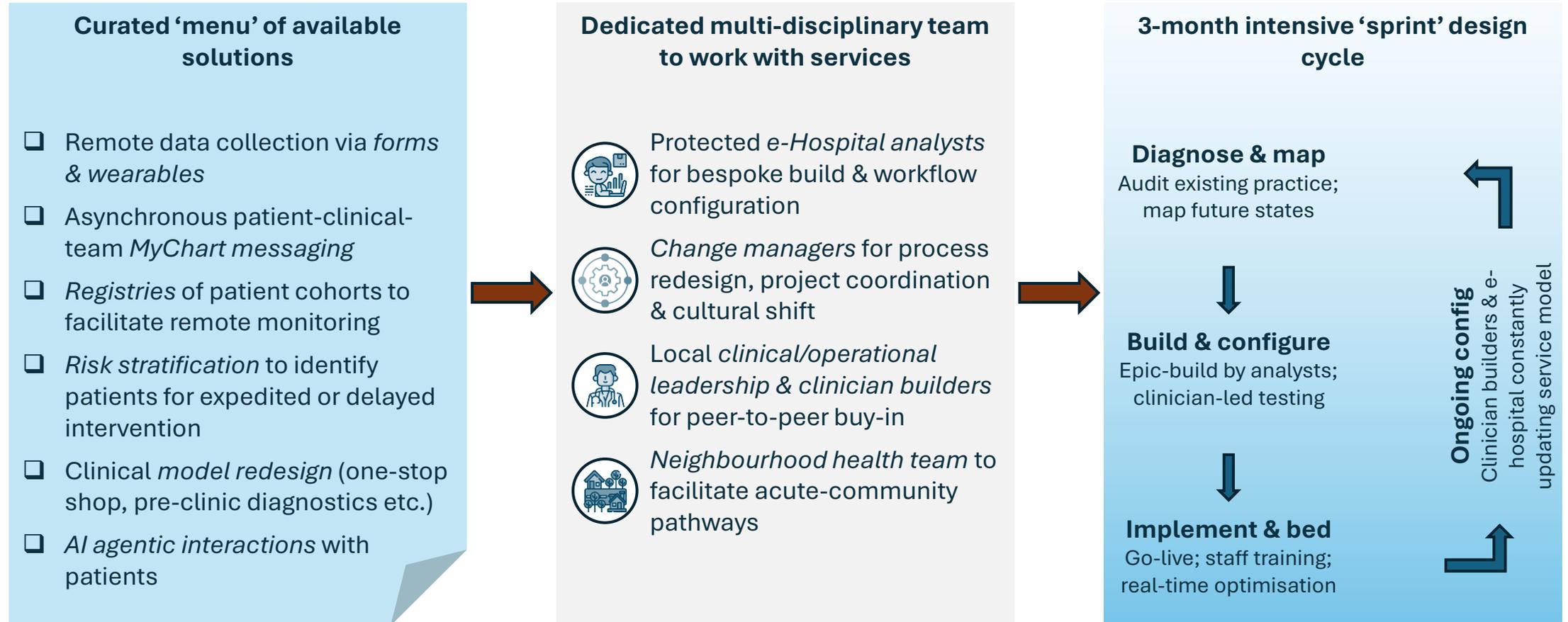
Critical Risk

Scale of task across the whole Trust with unknown complexity in some areas, & continued engagement of clinical/operational teams.

Progress & Benefits

- ✓ 2% DNA rate for self-scheduled appointments
- ✓ 10,500 self-scheduled appointments & 1,700 early offers accepted so far (appt brought forward on average 15 days)
- ✓ 1,800 hours of admin time saved so far (4 WTE)

What's next: follow-up pathway redesign at a sub-specialty level

Curated 'menu' of available solutions

- ❑ Remote data collection via *forms & wearables*
- ❑ Asynchronous patient-clinical-team *MyChart messaging*
- ❑ *Registries* of patient cohorts to facilitate remote monitoring
- ❑ *Risk stratification* to identify patients for expedited or delayed intervention
- ❑ Clinical *model redesign* (one-stop shop, pre-clinic diagnostics etc.)
- ❑ *AI agentic interactions* with patients

Dedicated multi-disciplinary team to work with services

- Protected *e-Hospital analysts* for bespoke build & workflow configuration
- *Change managers* for process redesign, project coordination & cultural shift
- Local *clinical/operational leadership & clinician builders* for peer-to-peer buy-in
- *Neighbourhood health team* to facilitate acute-community pathways

3-month intensive 'sprint' design cycle

Diagnose & map
Audit existing practice; map future states

Build & configure
Epic-build by analysts; clinician-led testing

Implement & bed
Go-live; staff training; real-time optimisation

Ongoing config
Clinician builders & e-hospital constantly updating service model

Coordination Centre

SUMMARY

Work with ward & bed management teams to eliminate paper, with a single version of the truth of patient & bed state on Epic to support decision-making & patient flow, facilitated by the introduction of electronic ward boards & the Transfer Centre Epic module.

IMMEDIATE GOALS

Provide real-time, accurate data to bed managers to enable more informed capacity/demand management via a digital command centre & reduce the burden of meetings & administration.

FUTURE AIMS

Provide the comprehensiveness & quality of data required for the introduction of predictive analytics & automation that can further drive improvements to patient flow.

Implementation

Designed & established by Innovation, supported by externally sourced programme management

Critical Risk

Cultural resistance to eradication of paper, initial increase in burden of data entry, associated changes to rhythm of ward processes.

Progress & Benefits

- ✓ 46 ward boards installed
- ✓ 1000 staff trained
- ✓ Significant progress against key outputs (see next slide)
- ✓ 25% reduction in bed turnaround time

Ambient Voice Technology

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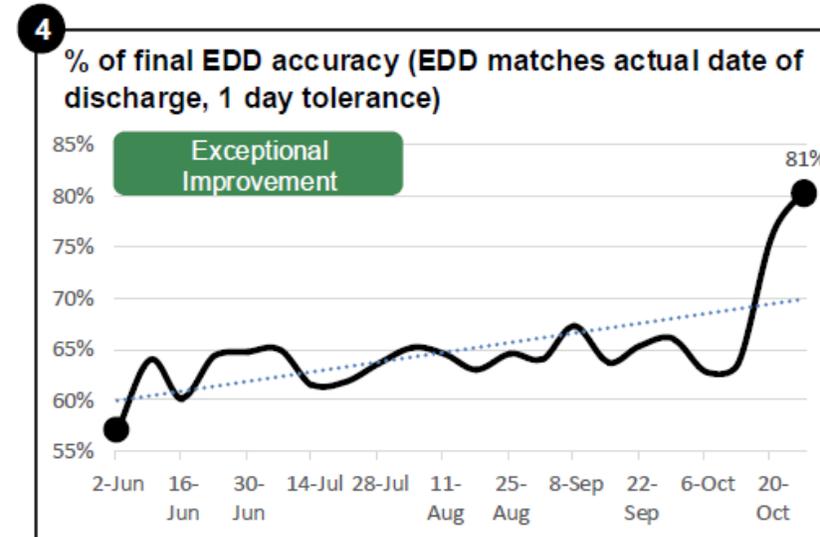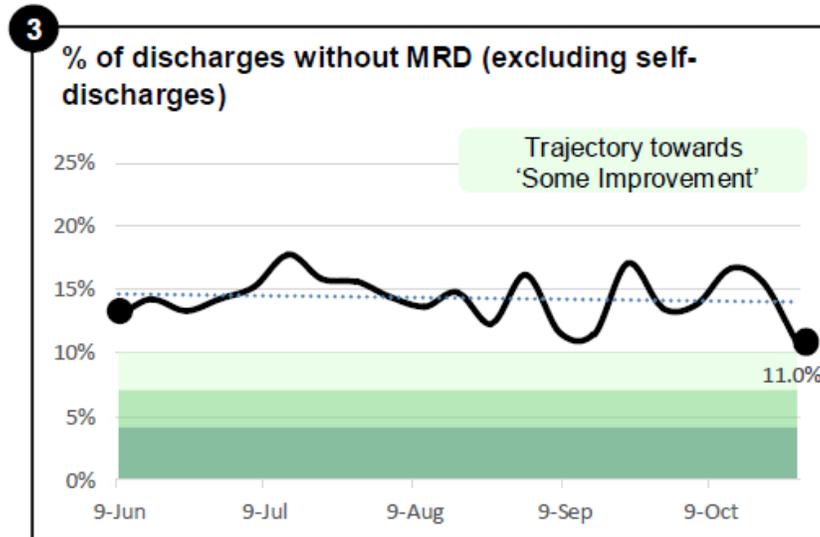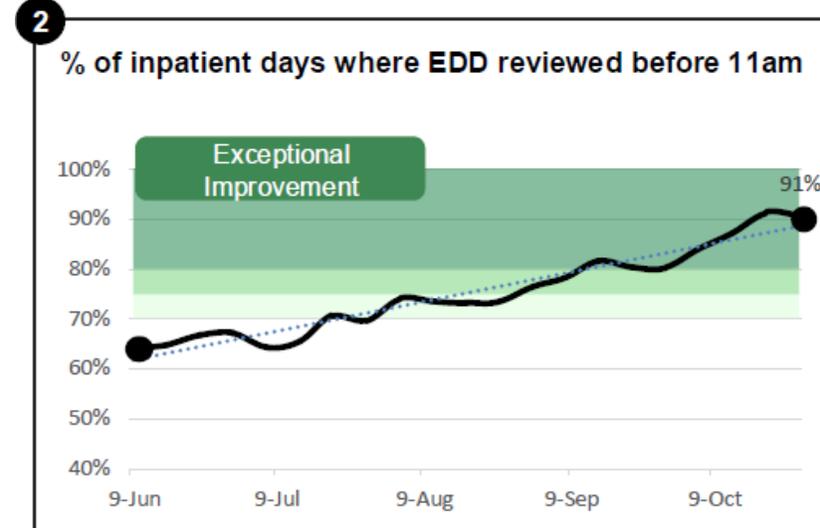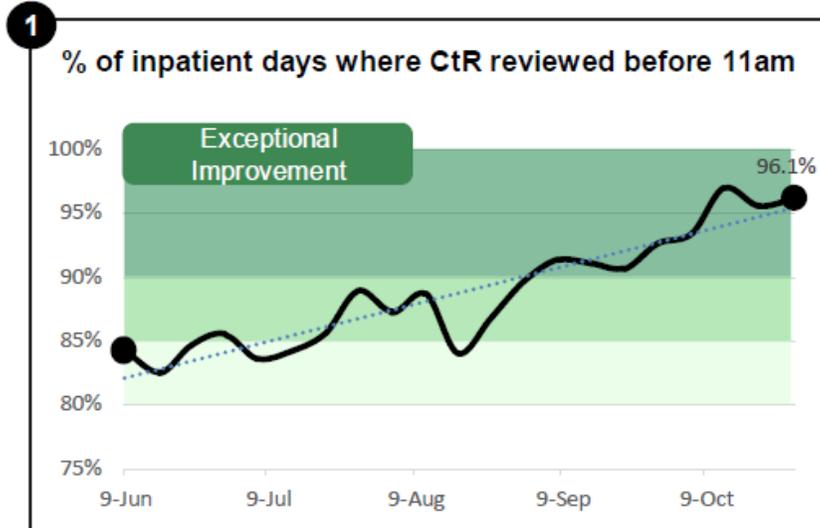
SUMMARY

Piloting of Heidi Health Ambient Voice Technology to automatically transcribe and summarise clinic & produce documentation through generative AI. Tool to be concurrently evaluated with a view optimising documentation workflows across the Trust through technology.

IMMEDIATE GOALS

Implement Heidi with up to 150 users in outpatients to assess utility, safety and increase productivity.

FUTURE AIMS

Establish a set of optimal archetype workflows for documentation (including Epic shortcuts, digital dictation & AVT) ahead of future Trust-wide procurement & adoption in 2027/8.

Implementation

Competitive tender to procure Heidi; Innovation team leading on implementation with THIS Institute supporting evaluation

Critical Risk

Risks of hallucinations from AI & impact on clinical safety; some users do not benefit because of low level of Epic integration

Progress & Benefits

- ✓ 70 users have undertaken 1200 consultations with Heidi
- ✓ Positive feedback from many users
- ✓ Integration with Epic in place

What's next: expanded implementation

	Extend integrations with EHR where technically feasible	Current functionality does not allow for pushing to certain note types, populating structured data fields, or pulling in context effectively from the rest of the record. Many users find they are more efficient with standard digital dictation.
	Expand to adoption to ED & inpatient areas	Should further integrations be achievable, we will pilot Heidi in other settings, potentially offering greater impact (no digital dictation currently)
Epic	**Pilot Epic's native ambient solution**	Epic is releasing its own native solution, promising greater integration & functionality, including digital dictation. But…not from day 1.

Microsoft Co-pilot

NHS CUH

SUMMARY

Implementation of 470 MS Co-pilot licenses across the Trust to introduce generative AI into everyday working practice & improve the productivity of the administrative workforce.

IMMEDIATE GOALS

Support staff to improve productivity in the context of a reduced admin workforce & evaluate the most impactful use cases with a view to future rollout.

FUTURE AIMS

Automate specific tasks that could represent a headcount reduction, build 'agents' & allocate licenses judiciously to improve productivity tangibly to far offset costs.

Implementation

Light touch programme management from Innovation; online training developed with Microsoft

Critical Risk

Minimal resource to provide at-the-elbow support to users to fully exploit the tool & challenges measuring impact quantitatively.

Progress & Benefits

- ✓ All licenses have been allocated with strong demand
- ✓ Positive feedback from many users
- ✓ List of use cases where productivity is improved
- ? Definitively quantifying impact without translating process into WTE change is very challenging

What's next: Co-Pilot Studio

- A low-code platform used to build, test, and publish custom AI agents that extend the capabilities of Microsoft 365 Copilot
- Unlike standard chatbots, "agentic" AI can operate independently. It can plan tasks, dynamically learn from context, and escalate complex work to staff only when necessary.
- Create agents that manage entire processes from end-to-end
- Build these sophisticated agents by simply describing what you want them to do in plain English

HR policy bot

Answering staff queries about leave, sickness, or management issues, with reference to Trust policies

Patient assistant bot

Answering non-clinical questions from patients with information scraped from the website or SharePoint

Medicines supply tool

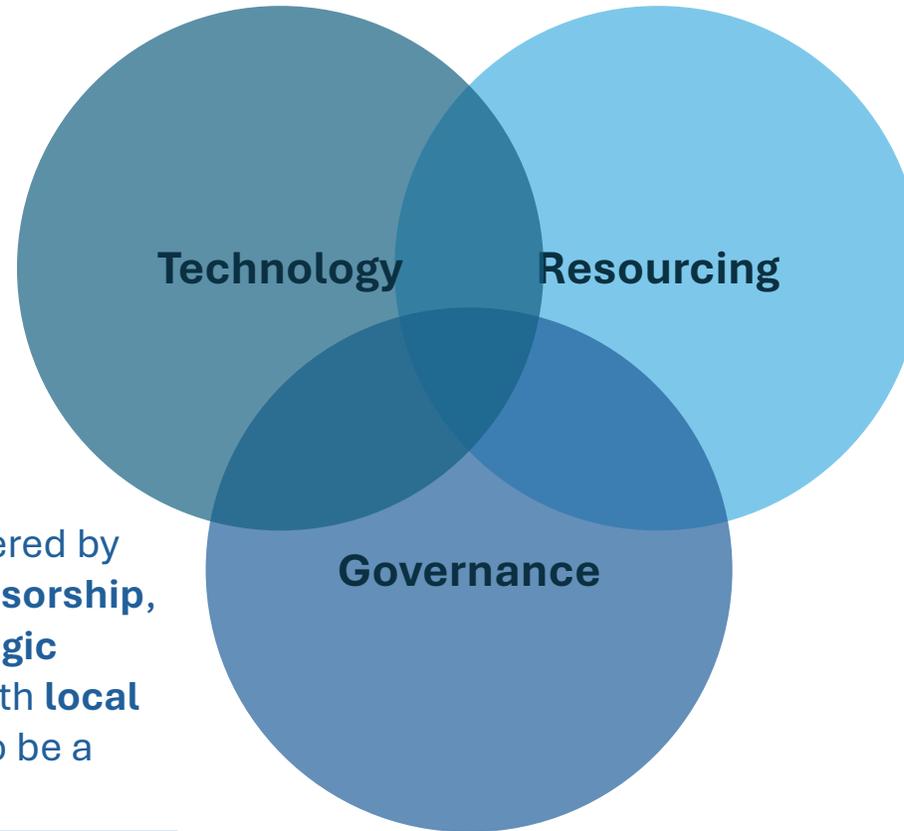Guiding staff without providing clinical advice as to how and where they can access medicines in- and out-of-hours

The experience of designing and implementing large scale change programmes has highlighted 3 themes that inform success or failure

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Conducting **thorough appraisals of the market** and, where necessary, procurements allows to select technology that not only addresses a problem but **interfaces with our core systems**. We have also seen how much further we can go in extracting value from our **existing technology stack**.

Where we have been successful, this has only been possible because programmes have had ring-fenced access to **dedicated technical and implementation expertise.** With much of this outsourced to contractors, however, it has come at great **financial cost** and suffered from a **lack of local system and organisational knowledge**.

Technology

Resourcing

Governance

Programmes have at times been hampered by an absence of involved **executive sponsorship**, **clear reporting routes** and clear **strategic mandates**. We know this, combined with **local clinical and operational ownership**, to be a winning recipe for change.
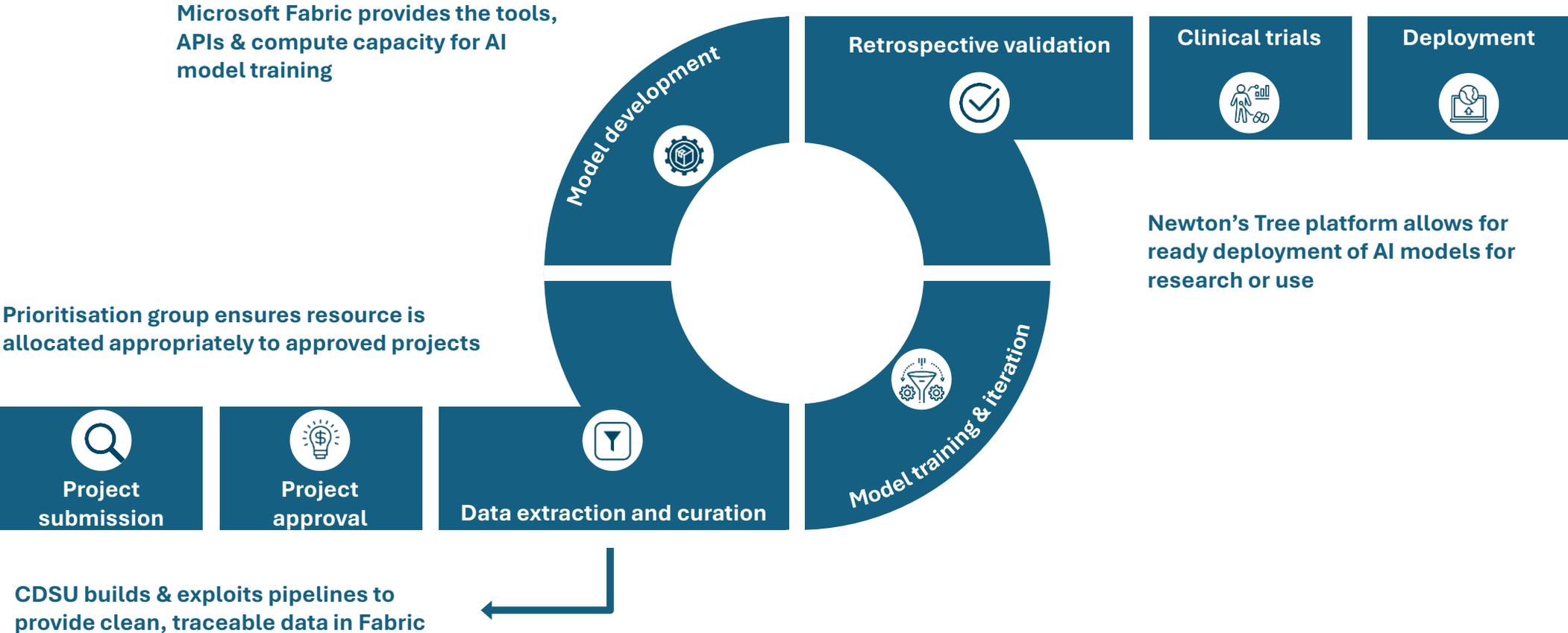
These lessons have taught us to bake into future programmes design principles that we know will promote our chances of success

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1	**Our existing tech stack offers vast opportunities for productivity**	Significant variability in technology adoption and therefore staff productivity and care models; getting more from our existing tech must be a tenet of future programmes
2	**All change is likely to have a technological dimension**	As a highly digitally mature organisation, no change to process or clinical pathway can take place without associated system configuration – centrally or locally; all transformation is now *digital* transformation.
3	**Dedicated e-hospital resource is vital for successful change**	Our technical teams are resourced to maintain existing workflows, update systems and effect a (relatively) small amount of change; our investment in the team must reflect our grander ambitions for change.
4	**Substantive staffing is more efficient & effective than contractors**	Whilst contractors bring 'boots on the ground,' they are expensive, take time to onboard, and will never hold the relationships or organisational know-how of (quality) substantive staff that results in the most effective change.
5	**Executive as well as local sponsorship is critical**	Change and technology adoption is typically treated as optional; it is too hard for programmes to drive change in such an environment without meaningful executive sponsorship creating a different, 'must-do' narrative.
6	**Projects require strategic adoption of principles, but local implementation**	While there is no one-size-fits-all, and some programmes should be delivered centralised/decentralised, all require a clear strategic mandate and ownership by divisional clinical and operational managers.

Our ambition is to leverage data to generate groundbreaking insights, & to identify, develop, evaluate & deploy the next generation of health technologies

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Microsoft Fabric provides the tools, APIs & compute capacity for AI model training

Model development

Retrospective validation

Clinical trials

Deployment

Newton's Tree platform allows for ready deployment of AI models for research or use

Prioritisation group ensures resource is allocated appropriately to approved projects

Model training & iteration

Project submission

Project approval

Data extraction and curation

CDSU builds & exploits pipelines to provide clean, traceable data in Fabric

We have made significant progress across the 5 pillars that will realise our vision

|		
	Policies	Governance to allocate technical resource appropriately to demand, & ensure projects & infrastructure are implemented safely, securely & effectively
	Platforms	Technologies that support data curation, & the development, evaluation & deployment of data-driven products at scale
	Pipelines	Automated, repeatable, traceable transformations of 'raw' clinical & operational data into formats that can be interrogated to generate insights, answer questions & serve solutions
	People	Expertise in data engineering, software engineering & data science to develop & operate our policies, platforms, pipelines and projects
	Projects	The initiatives we are supporting, from ongoing data curation, to providing data for researchers, & deploying AI for evaluation or use

Projects

We are working to introduce rigorous processes & transparency for data-related research & innovation projects, using a single platform (SharePoint) & assurance via our governance groups. With the platforms & additional resources we have put in place, we are also now building a pipeline of projects across several areas.

Data for approved investigator-led research	Up to 50 approved requests for data being worked on by BRC analysts
Commercial research projects	Contractual commitment to Arcturis to deliver data for commercially-sponsored research; responsibility to be transitioned from e-Hospital to CDSU
Academic AI evaluations	6 university/CRUK-developed AI models being scoped for retrospective evaluation via Newton's Tree platform
Common data models	Deployment of pipelines to structure data into a standardised medallion architecture, including UCLH's OMOP-ES & London AI Centre's OncoLlama
Commercial AI deployments	9 commercially available AI applications being scoped for deployment, including fracture detection & head CT prioritisation in ED

So, we've progressed areas we posited (and where we didn't), and technology is now allowing is to pursue others
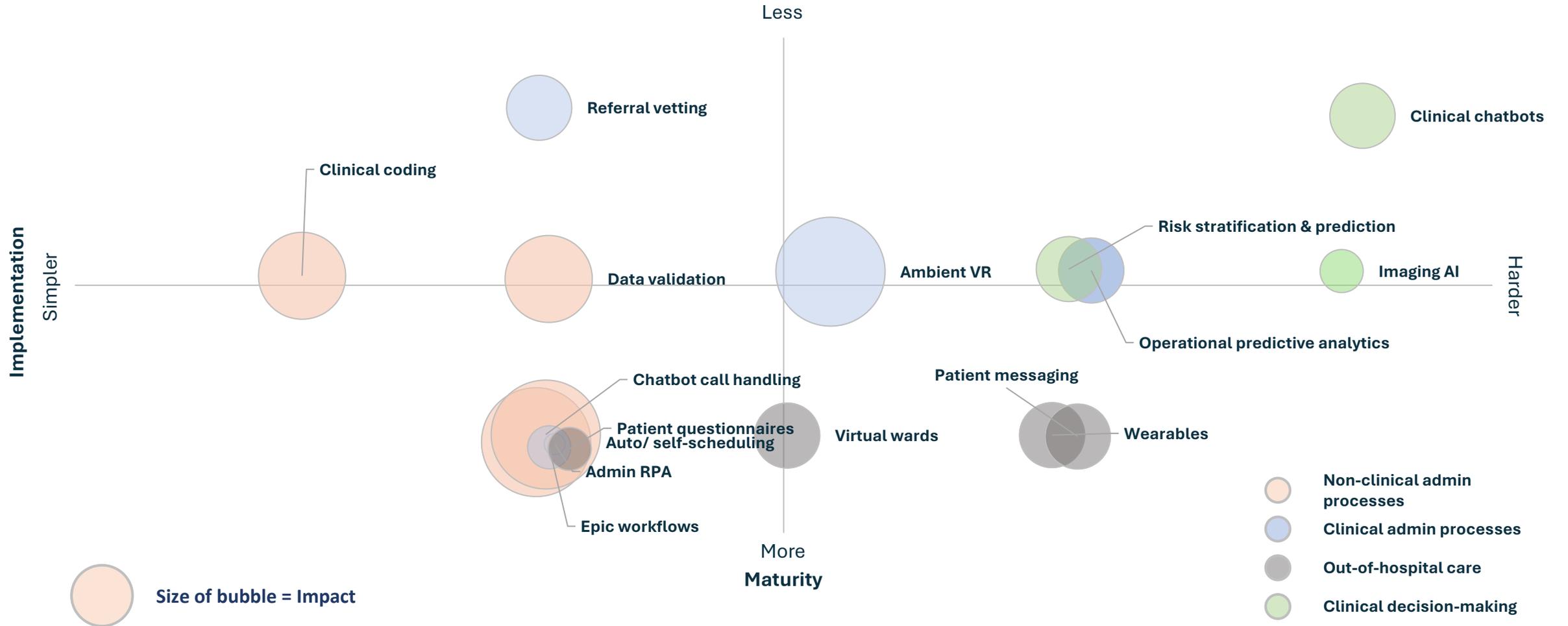
The infrastructure we're putting in place should position us in the coming years to exploit the wider range of opportunities

	Agentic call handling	Seeing the appearance of tech companies (including large US AVT vendors) offering agentic interactions with patients for appointment scheduling or wayfinding. CUH outpatients receives 400,000 calls a year.
	RTT validation	Validating PTLs is a 'hidden' NHS industry consuming vast numbers of admin staff. We have built promising LLM-based models that show very high confidence in determining RTT codes.
	Referral vetting	Thousands of consultant PAs are spent vetting and triaging referrals according to (in essence) logic trees. A perfect use case for LLM-based agentic AI. Proof of concept models in-house showing promise.
	Predictive analytics	The focus of much academic research but little real-world impact. New models of outpatient care present opportunities to operationalise such models, and growing use of APIs the ability to implement them in context within EHRs.