

Delivering the benefits of digital health care

**The King's Fund
Digital Health & Care Congress**

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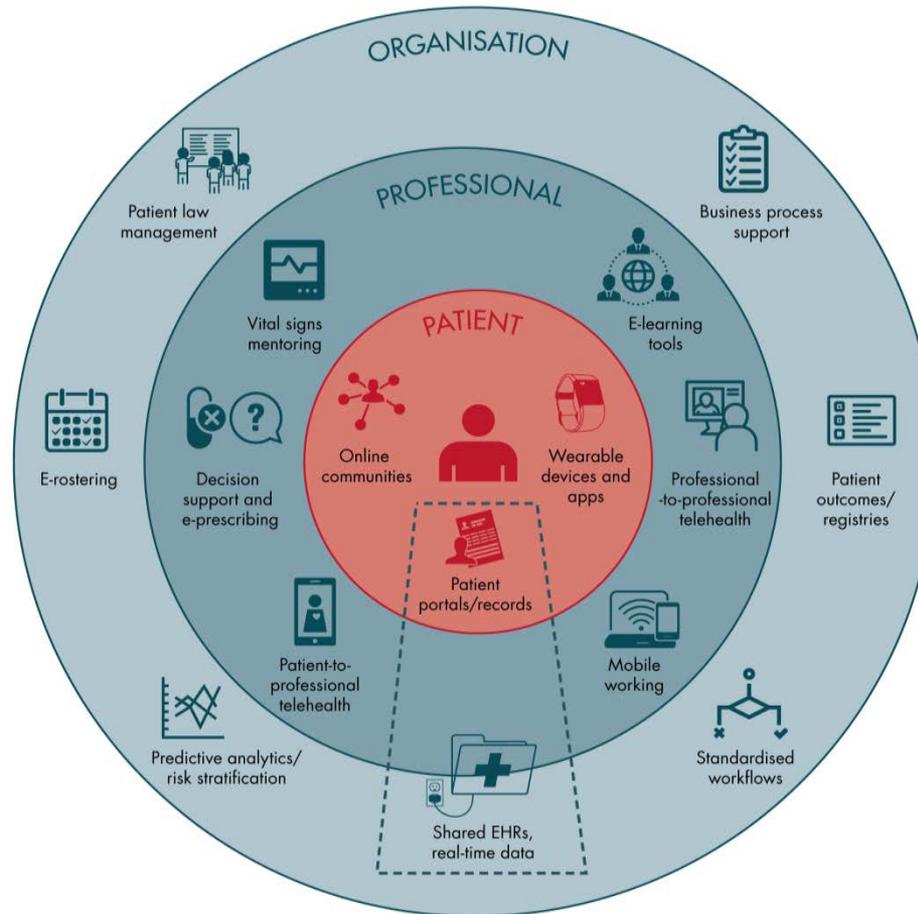


Our work

- Extensive literature and evidence review
- 40 interviews leaders healthcare organisations across the world – actively pursuing a digital strategy for many years
- Small survey NHS leaders



The technology landscape



Seven areas of opportunity for digital health technology



1. More systematic, high-quality care



2. More proactive and targeted care



3. Better coordinated care



4. Improved access to specialist expertise



5. Greater patient engagement



6. Improved resource management



7. System improvement and learning



More systematic, high-quality care

Shared EHRs, real-time data | Decision support & e-prescribing | Standardised workflows

“I’m saying let’s build the system around the three physicians that get the best results, and get the other 97 to increase their performance... we know how to do that.” (Robert Pearl, Kaiser Permanente)

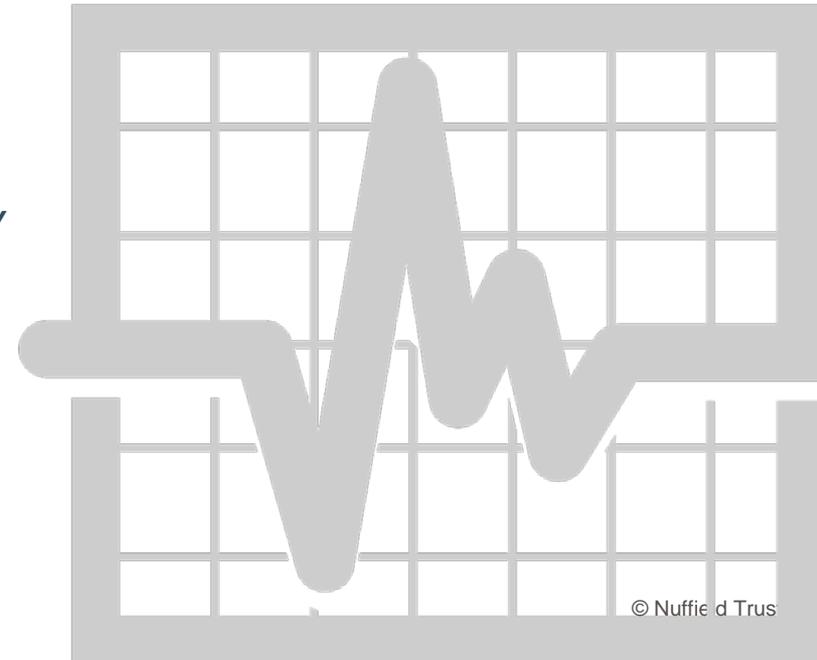
- Decision support tools can:
 - *Improve the quality of clinical decision-making*
 - *Lower cost*
 - *Reduce the likelihood of medication error*
- Standardised workflows can consistently *limit variation in the system*
 - They can be automated to improve efficiencies – ‘one click flows’

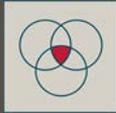
More proactive, targeted care

Vital signs monitoring | Predictive analytics/risk stratification | Shared EHRs, real-time data

“[Productivity] doesn’t just come from putting an electronic medical record in, it comes from... [using] the data across the continuum to predict and prompt, and it’s a whole different ballgame.” (Matthew Swindells, Cerner)

- Supports *shift from reactive to proactive care* preempting and avoiding problems
- Northern Arizona Healthcare used predictive analytics to *reduce emergency admissions by 45%*
- VitalPAC (vital signs monitoring) *reduced norovirus outbreaks by 90%*
- Remote community monitoring is anticipated to *reduce admissions and readmissions*





Better coordinated care

Mobile working | Prof-to-prof telehealth | Shared EHRs, real-time data

“We can coordinate care and make sure information is exchanged seamlessly without repeating constant tests, without constantly writing history notes but also understanding what has happened with previous conditions to a sufficient level to make a decision” (Dr Harpreet Sood, NHS England)

- Shared records across acute, community and primary care (eg Somerset) => *reduced admissions, A&E attendances and length of stay*
- Apps such as Mayo Clinic’s synthesis app can create, *user friendly, single access point of access* for all clinical information across large complex provider – *improving clinical decision making and efficiency*
- Opportunities to integrate via *patient-owned records* e.g. Patients Know Best, Microsoft Vault, Get Real Health

Improved access to specialist expertise

Shared EHRs, real-time data | Prof-to-prof telehealth | Telehealth/telecare



“I do think... the one under-emphasised area where we see an opportunity for a very, very large productivity gain, not just in health care but in any kind of dealing with public services, is the movement of... conversations to video consultation.” (David Furniss, BT Global Services)

- Professional-to-professional telehealth means generalists can receive *specialist support at the point of care*
- Patient-to-professional telehealth can:
 - *Reduce A&E attendances and hospital admissions*
 - *Reduce the specialist’s workload*
 - *Improve patient outcomes*
- *E-ICUs can reduce mortality, reduce ICU length of stay + improve staff outcomes*



Greater patient engagement

Shared EHRs, real-time data | Wearables/apps | Telehealth | Patient portals | Online communities

“Engage patients at a very early stage of their lives and we can start helping them get into patterns of behaviour to minimise chronic conditions in the future. That’s where the huge savings are going to be in the long term” (Richard Bakalar, KPMG)

- Patients *taking greater control of their health and care, supporting self care* – eg book appointments, e communication, access to records
- Patient portals – such as WebGP – *encouraged 18% of patients to self-manage*
- Online patient networks (e.g. Patients like me) signpost to resources and advice
- Wearables and apps have exploded onto the market but their impact is still not clear



Improved resource management

Mobile working | Business process support | Patient flow management | E-rostering | Shared EHRs

“We should be tracking all materials... tracking the time of our procedures and automating our scheduling... The more analysis we have on that... the more clinicians can make efficient decisions, which will then improve their productivity.” (Joel Haspel, GE Healthcare Finnamore)

- E-rostering can:
 - *Reduce the time taken to develop the staff roster and agency staff use*
 - *Provide more flexible, less stressful working patterns*
 - *Support automatic workforce monitoring and task allocation*
- *Mobile working – improves workforce efficiency and supports improved clinical decision making*
- *Tracking technology can be used to improve patient flow*



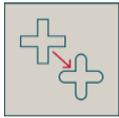
System improvement and learning

Standardised workflows | Patient registries | Shared EHRs, real-time data | Predictive analytics

“Electronic health records are dumb. They are not the major source of productivity or value enhancement. They are a mechanism for entering and storing data. It’s what you do with the data that creates the value.”
(David Blumenthal, The Commonwealth Fund)

- Feeding learning from clinical and non clinical data back into clinical and operational decision making – *deliver the triple aim of healthcare*
- Intermountain Healthcare has reduced costs by 10% in the last 3 years and improved clinical outcomes
- Technology can also improve education and training through remote teaching/learning and sharing of knowledge

Seven lessons for success



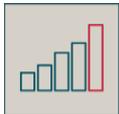
1. Transformation first



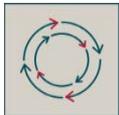
2. Culture change is crucial



3. User-centred design



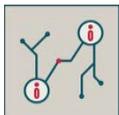
4. Invest in analytics



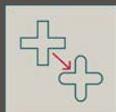
5. Multiple iterations and continuous learning



6. Support interoperability



7. Strong information governance



Transformation first

*“It’s fundamentally not a technology project;
it’s fundamentally a culture change and a business
transformation project.”*

(Robert Wachter, UCSF)



Culture change is crucial



Invest in change
management



Appoint leaders with
technological & clinical
knowledge
e.g. a CCIO



Create a culture
receptive to change
with empowered
staff



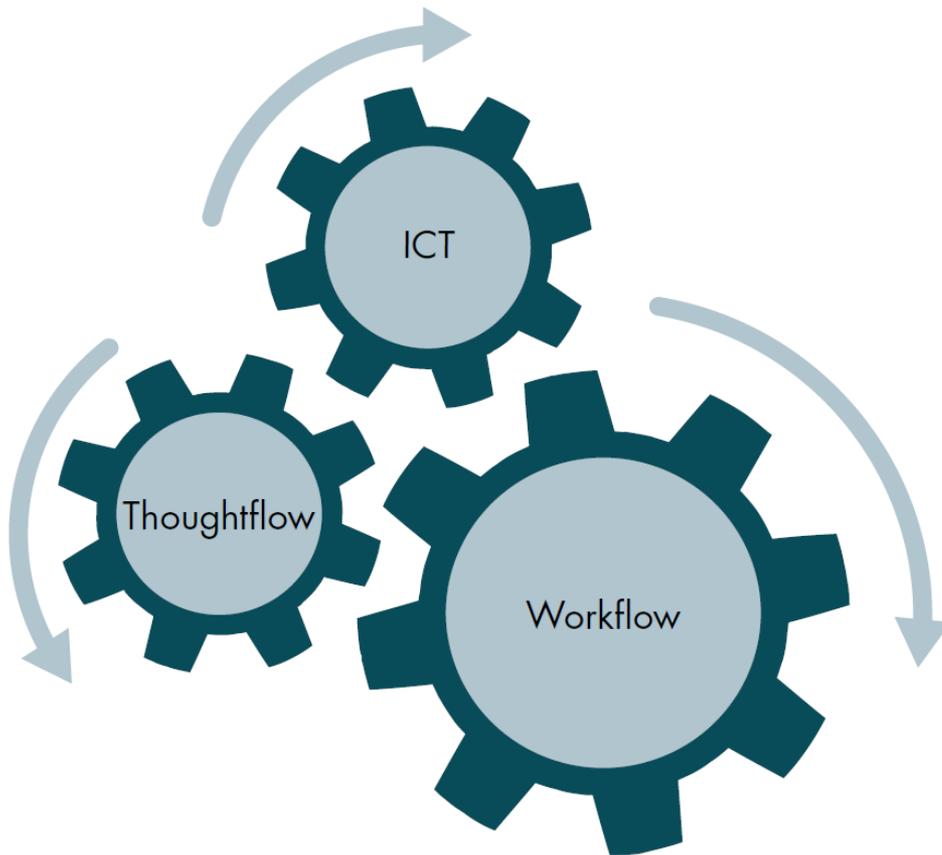
Clinical champions and
active staff engagement
can help



Training and on-going
support is critical



User-centred design



“Thoughtflow impacts the decision-making process, that is, it either enhances or makes it worse through the way we display digital information on a computer monitor or on a mobile device, so the concept of presenting the right information, to the right person, at the right time, is very important.”

(Richard Bakalar, KPMG)



Invest in analytics



Feed data back into
processes to
improve



You will need a
team of highly
qualified analysts
and data
scientists

“They said our analytics were the best that they had seen in the world. The reason for that: when you track clinical data and load it into a longitudinal patient registry, it supplies a foundation for truly excellent analytics.”

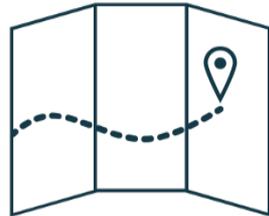
(Brent James, Intermountain Healthcare)



Multiple iterations and continuous learning



You won't get it right
first time



You should see
implementation as
an on-going journey



You need people who
can adapt as you evolve
and improve

“The whole journey started in the 1990s. We had two major failures – one a system that we designed ourselves and one a system that IBM designed with us... We probably spent five years building our own system; five years with Epic [a health care software company in the US] building the initial system; five years implementing our own system; five, six, seven years maximising what we have.”
(Robert Pearl, Kaiser Permanente)

What does the future look like?

- Information technology – omnipresent but much less visible
- Medical technology growing in intelligence
- Different relationship between patient and professional – requiring new skills for both
- Different relationships between professionals – new ways of working within and across organisations.
- Analytical and organisational development skills critical
- Sea of data – greatest opportunity and challenge



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