Design principles for digital health

DIGITAL HEALTHCARE COUNCIL

Shaping the future with patients

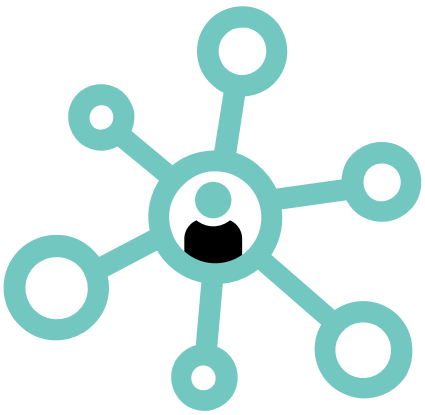
About the DHC

The Digital Healthcare Council is the voice of digital health providers. We work to inform the development of policy and regulation. Our members deliver care digitally directly to patients and by working in partnership with others.

Digital health is already transforming millions of patients' lives and the health services on which they rely. If we achieve the optimal environment, those benefits will be realised in every corner of the country and to all patients and patient groups who wish to consume healthcare in this way.

This paper outlines four key principles that are essential to create a vibrant and sustainable digital health ecosystem that works for patients:

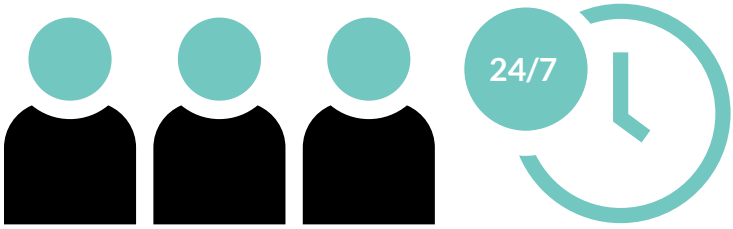
1 People first



2 Fair system rules

3 Free and open information

4 Evidence-based practice



1 People first

Digital health must put people first. This should be the central tenet for all healthcare.

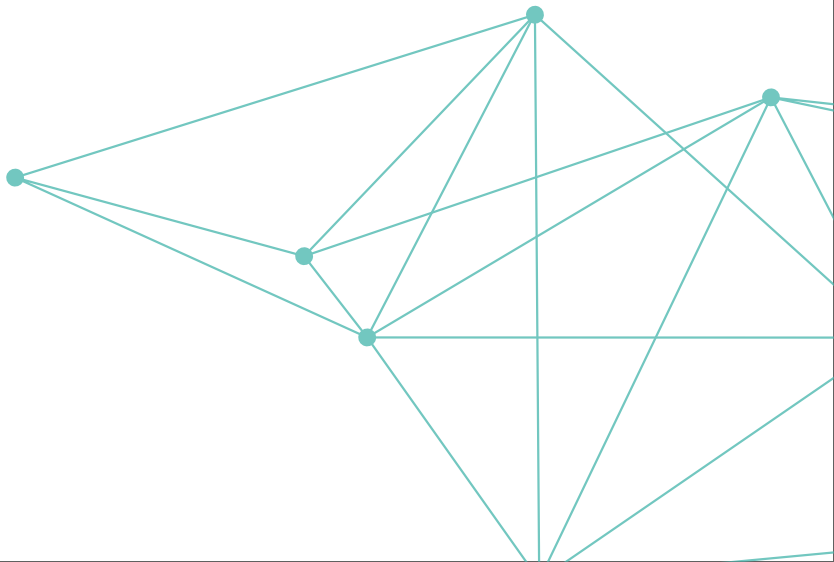
This means adopting policies and processes that achieve 24/7 support for real people combining education, prevention, diagnosis and treatment, in a way which does not widen inequalities.

Digital is perfectly placed to shift care away from traditional micro-episodic interventions and towards more sustained and personalised interventions, with frequent – often continuous – monitoring to measure and ensure effectiveness.

As well as direct support to individual patients, families and their carers, a patient-first approach requires change in the wider system. In some cases, care accessed digitally will displace care elsewhere, though there will always be a need for accessible physical services. That is why it is crucially important to encourage and support traditional face-to-face care providers in their journey to a digital and physical mix that meets the needs and demands of today's patients.

A key challenge is to coordinate this so that savings, both financial and that relate to staff time, are ploughed back into improving patient care as digital provision brings benefits directly to patients.

Decisions should always be driven primarily from a patient perspective: following and responding to their choices and preferences, shaping organisational change to meet those requirements rather than prioritising the organisational status quo. In a universal health system, it therefore follows that a choice of digital health solutions must be available to all, and that funding flows must follow patients' preferences without disadvantaging those who choose to consume their care solely offline.



2 Fair system rules

If we are to build a people first service, the rules that shape the market must prioritise people's interests. This has implications both for financial and procurement rules as well as clinical and professional regulation.

Patient-centred market rules

Within our health service, those who make investment decisions, the bodies that pay for specific care packages, and the beneficiaries of those investments are often different organisations and individuals. This often leads to gaps between available services and what patients want and need. We recognise solutions are not always straightforward, but by always holding patients as the central organising principle, we must:

- Align incentives with a clear route to reimbursement, wherever possible based on the value delivered to patients, as measured by clinical effectiveness, outcomes and patient satisfaction;
- Recognise and tackle anti-competitive behaviour among incumbents
- Giving equal access to larger establishments companies and solutions from SMEs and digital innovators
- Develop smarter and faster procurement that allows new innovations to gain a foothold and be adopted at scale.

The centre has a fundamental role in tackling these challenges: when faced with new digital opportunities, we need to shift from building processes to defining patient-centred objectives. Specifically, the centre needs to ask less "how do we, the centre, build" and more "how do we support the community to develop solutions to achieve our goals?"

Regulation

Some of our professional bodies have existed for centuries and most of our regulatory approaches were designed for the analogue age. Over the years, those bodies have often adapted to respond to new advances in healthcare. Yet, we now face a faster pace of change than ever before, and previously distinct boundaries are frequently blurred.

Specifically, traditional regulatory approaches, e.g. by profession, geography and devices, are challenged by digital services that can delivered through a variety of professionals and made available to patients across the country.

The need for a consistent and fair regulatory approach remains the same, but this needs to change to respond to the opportunities, risks and benefits of new care models. In turn, this means closer working across regulators to achieve a common understanding and implementation of best practice, common standards for face-to-face and on-line provision, and in-depth exploration between regulators and providers to develop practical regulatory solutions.

3 Free and open information

In the early 1930s, there were 2,100 deaths per 10 billion passenger miles flown on commercial airlines. That figure is now down to one.

The central insight from aviation safety is the importance of a growth mindset, informed by a relentless scrutiny of all available information. We have already made considerable patient safety improvements building on that insight, but digital healthcare allows us to go much further.

Digital health offers the opportunity to make improvements at an unprecedented scale and pace across many areas spanning diagnostics, prevention, identification of patient safety risks, and clinical effectiveness.

The pace and scale of those improvements is largely dependent on free and open access to data, subject of course to appropriate information governance and security safeguards.

Yet too often, data is inaccessible, locked in closed systems or with meaning that is lost because of a lack of standardised data structures and poor meta data.

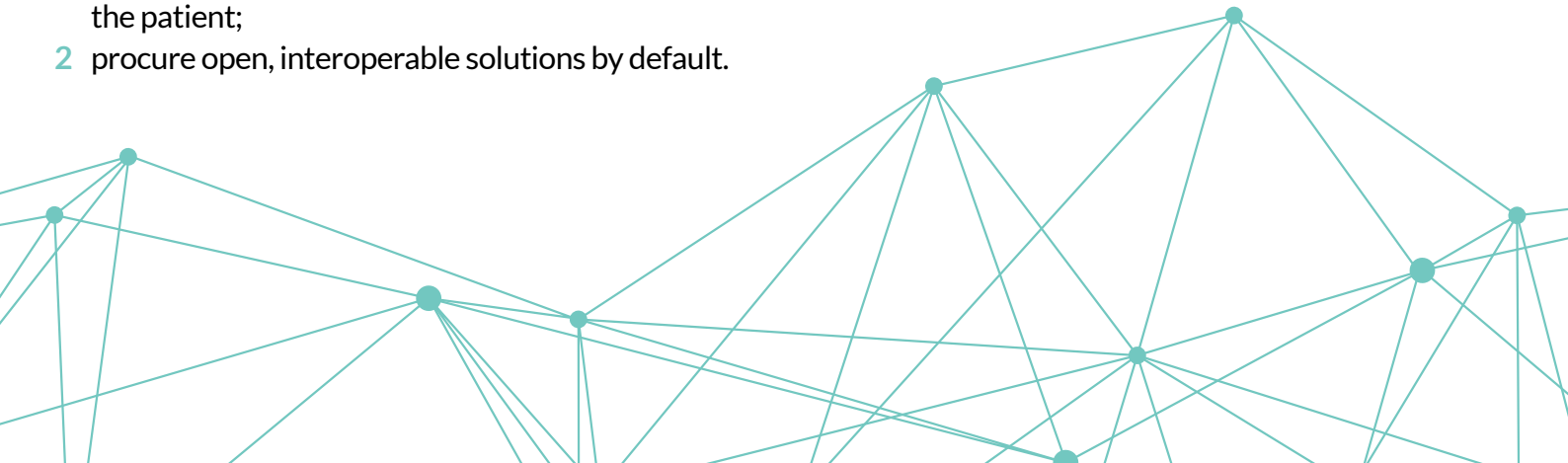
We therefore need to adopt two key approaches:

1. patient data belongs first and foremost to the patient;
2. procure open, interoperable solutions by default.

In practice, this means that patients should own their data and be able to take it with them and/or grant access to any provider they wish. To achieve this, and to facilitate free flowing data, NHS organisations should adopt open interoperable solutions that use APIs that use existing international standards, e.g. FIHR.

We recognise that interoperability has long been a stated goal of NHS digital services but there are too many cases where it remains a distant objective. To make real progress, we recommend an incentive-based approach whereby healthcare providers are financially rewarded for achieving a small number of clear strategically chosen targets that rely on implementing interoperability. The measures could be incorporated into standard NHS contracts thereby codifying and guaranteeing rewards.

We believe there are lessons on how to do this from the Meaningful Use programme in the US that was introduced by the Affordable Care Act. Critically, the incentives need to be large enough to change behaviour, wide reaching enough to impact on all elements of provision, and specific enough to be achievable while requiring investment and procurement decisions that necessitate the rapid adoption and implementation of international interoperability standards.



4 Build the evidence base

We believe all healthcare, including digital health, should be based on evidence.

Digital provision allows a step-change in the level of available information. Potentially, every interaction can generate a depth of data that provides previously unimaginable insights into patient behaviour, the impact of environmental factors on health and the effectiveness of specific interventions.

These insights allow for the creation of a rich evidence base to underpin digital health interventions.

But the ease with which this information can be collected also poses new questions. We need clarity on the appropriate comparative baseline of typical face-to-face performance currently available to patients, from which to measure improvement. This is not always readily available, so we must be careful to avoid making the pursuit of perfection the enemy of the good.

We also need to factor in continuous improvement. Digital provision typically develops iteratively and at a rapid pace, far faster than traditional approaches. So, we need new methodological techniques that can measure continually evolving approaches, rather than requiring artificially static development environments that do not reflect the real world.

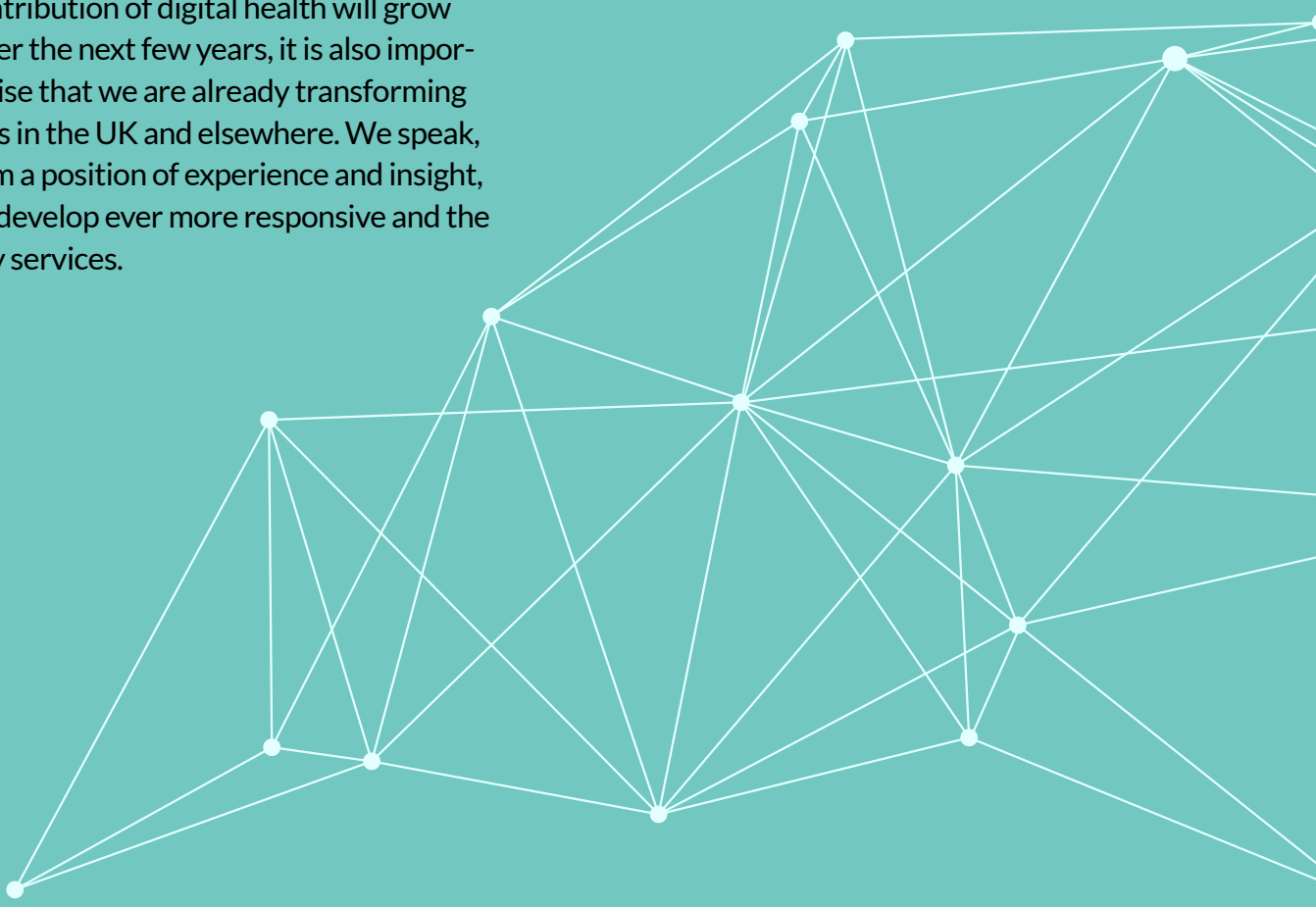
Further, we need to develop ways to assess the effectiveness of continuous learning algorithms including establishing minimum safety baselines.

These questions rarely have straightforward answers, but they are fundamentally important to ensure that we have evidence that can be assessed alongside existing healthcare evaluation frameworks.

Summary

The next few years will likely see profound changes in the reach and depth of digital healthcare. If we get the principles right, we can expect huge benefits for patients across the country, including those who often struggle to access provision in a way that fits their lifestyle and health needs. In turn, we can free hard-pressed resources to ensure we make the most of the highly skilled staff who work tirelessly day in, day out.

Just as the contribution of digital health will grow profoundly over the next few years, it is also important to recognise that we are already transforming millions of lives in the UK and elsewhere. We speak, therefore, from a position of experience and insight, committed to develop ever more responsive and the highest quality services.



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