

**Designing interactive technologies to
support Health both within and at the
boundaries of healthcare**

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Vision 1: Looking to the future, we might anticipate a world in which...



- People are actively involved in monitoring vital signs and self-managing health and wellbeing
 - New style of analysis yield additional personal information
- People access generic health information
 - Relate to their own symptoms and experiences
- Clinicians are alerted, and intervene as needed
 - Armed with pertinent, reliable information
- Drug administration is remote or patient-controlled
- Individuals' data is quality-checked, pseudonymised and aggregated to support population-level research

There is huge optimism and potential

- E.g. recent report from Deloitte

<http://www2.deloitte.com/uk/en/pages/life-sciences-and-healthcare/articles/connected-health.html>

Key findings

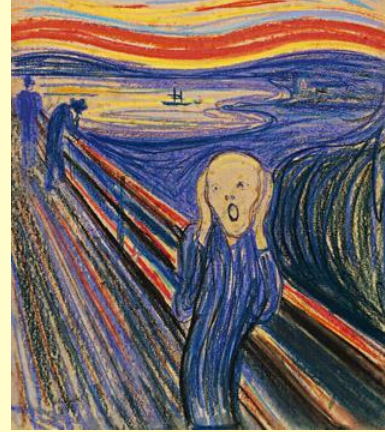


- Europe expected to overtake USA as largest mHealth market by 2018
- As the capacity and capability of digital technology is advancing exponentially, its cost is also falling
- Technology enabled care has the potential to increase provider productivity, deliver cost savings, reduce avoidable service use and improve health outcomes
- Digital technologies can empower patients and carers by giving them more control over their own health
- UK adoption of digital health remains slow - the biggest barriers are cultural and regulatory
- New entrants, such as technology, retail and pharmaceutical companies, raise the possibility of new healthcare provider models and approaches to health research transforming the patient experience

A Utopian view

- Empowering the patient
 - Through information about health conditions, and about themselves
 - With new information from novel sources
- Transforming the patient experience
 - Through new ways of managing their own health, and of clinicians supporting them

Vision 2: Alternatively, technology will be designed...



- Without due regard to the social context of use
 - Disrupting traditional relations without replacing them with a functioning alternative
- Without full understanding of safety implications
- Challenging traditional views of privacy and data security
- Making people feel inadequate and disempowered

Vision 3: A more realistic vision of the future



- There will be great advances in genomics, bioinformatics, sensing technologies, networking, miniaturisation...
- The investment will be huge, but the number of winners will be small
- Many will go for the low-hanging fruit
- Little attention will be paid to simplifying the system, or designing technology that fits individuals' lives and values

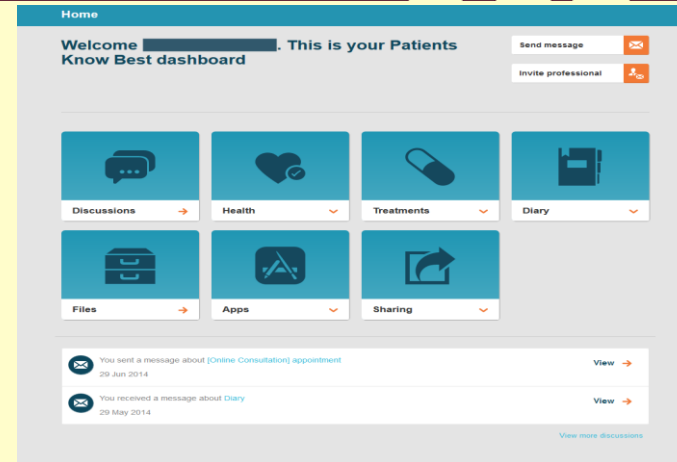


Vision 4: We can work with the realities of life to transform health and wellth



- This means grappling with difficult issues
 - Working with people from all walks of life
 - Understanding their values, needs and lifestyles
 - Marrying what is technically possible with what is socially desirable
 - Moving beyond ‘one size fits all’ to technologies designed for sub-populations, and that can be tailored to work for the individual
 - Making interfaces intuitive and ‘familiar’, and making technologies interoperable

Example: PCEHRs



- Controllers may want detailed access, mobile, immediate
- Collaborators value close communication with clinicians, want test results immediately, and want links to other relevant, validated information
- Cooperators want results after clinical consultation, want to be guided on decisions
- Avoiders want no technology, or simple, easily accessed information, and minimal information
- *...but what do their clinicians want or need??*

The future of health and wellth is exciting

...but there are many research challenges that need shared effort from technologists, health scientists and the human sciences

It's an interdisciplinary journey we need to take together

