

Designing telemedicine apps that health commissioners will adopt

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Mainstream adoption of telemedicine

How can this happen?

Two possibilities:

- Consumer decision
- Health service decision

Or some hybrid solution

Therefore the developer needs to understand what makes the health service 'buy' or 'adopt'

How does technology adoption work in a health service?

Evidence based medicine

Risk avoidance



The technology adoption process

Development



Piloting

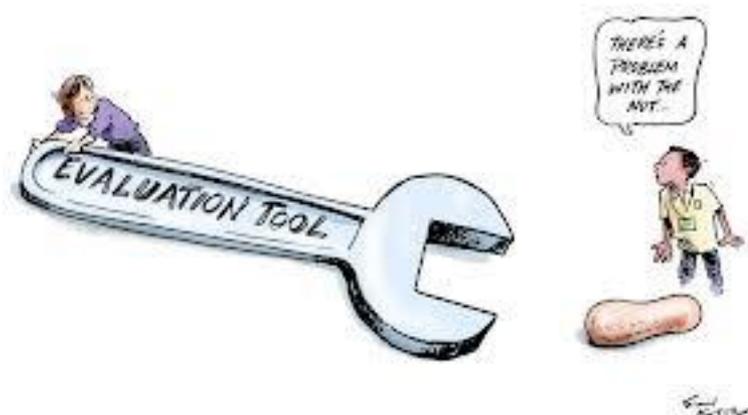


Evaluation



Adoption

Problem – an infinite loop is set up around piloting and evaluation .
We never get to adoption.



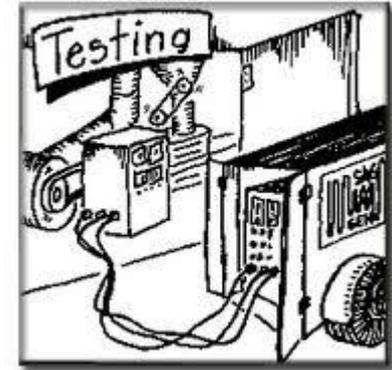
A structured system

Evaluation criteria are clear.

We look at –

- Does it work (clinically, technically)?
- Does it cost any more than the current solution?
- (or if it does, do the additional benefits justify this?)

Why does this not work?



Why is telehealth different?

Telemedicine/telehealth solutions are complex

There is a new type of user – the patient (or their carers, families...)

More than one professional group may be involved

Some elements of the solution may not be owned by the healthcare organisation



Approaches to understand the telehealth adoption problem

Need an 'evaluation framework considering legal, ethical, organisational, clinical, usability and technical aspects' (Koch 2006)

The Technology Acceptance Model (Venkatesh & Davies 2000, Venkatesh et al 2003).

Centred on the user - HCI

- Perceived usefulness
- Perceived ease of use

Normalization Process Theory (NPT) (May & Finch 2009)

Considers complex user/stakeholder group

- Interactional workability (impact on patient-professional relationships)
- Relational integration (impact on inter-professional relationships)
- Skill set workability (new skills requirements)
- Contextual integration (fit to the organisation's goals and structures)

Values based approach

'Evidence' is interpreted by different individuals according to their 'values'

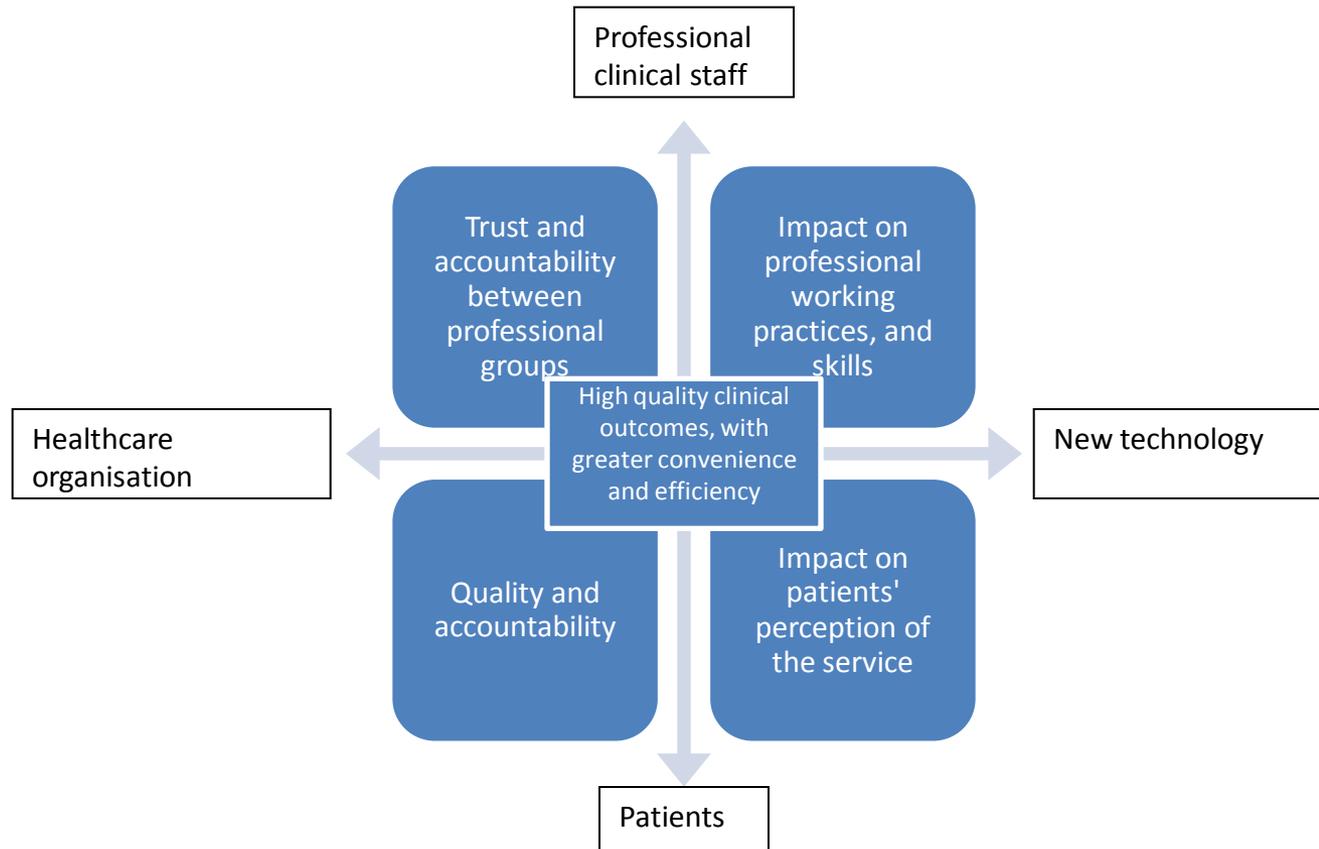
Therefore an evidence based approach needs to also understand values

Different values can lead to 'dissensus' – difficult to resolve, but must be recorded

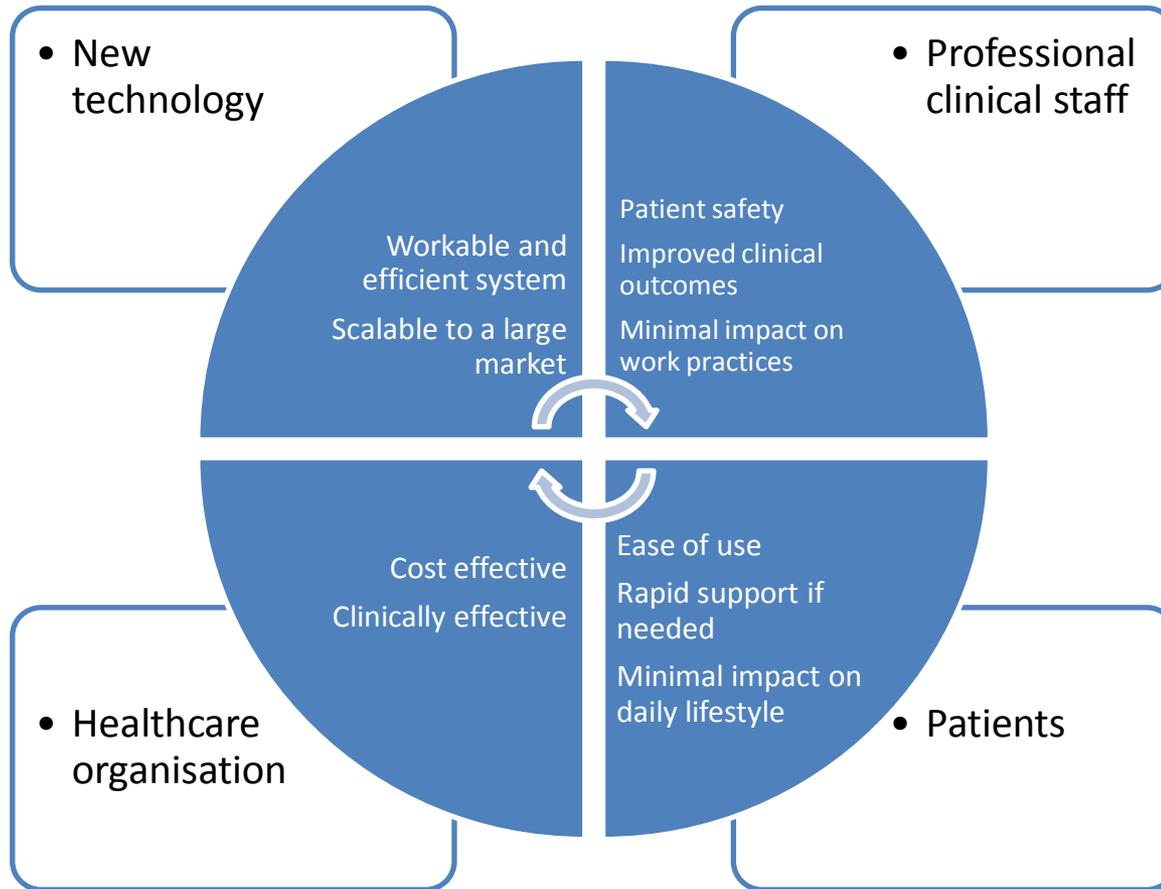
The values of the user (professional or patient) are crucial
(Heginbotham 2012)



The Stakeholder Empowered Adoption Model (SEAM)



Exploring values using SEAM



Examples of conflict in adoption

The health professional is concerned that the patient will be more demanding if they are able to be in contact at any time

The way in which the health service is delivered has to change. It may affect more than one professional service (eg. emergency care, physiotherapy, community nursing).

The patient may become obsessed with their illness, due to an ability to micro-analyse the data.

Key issues

Telemedicine is a disruptive technology: the service has to change as well as the product

This is also so if the consumer buys the product: the relationship with the health professional must change

The threat of change is greater to the health provider than to the patient

Conventionally, the responsibility for understanding all this, getting the product right and delivering a 'turnkey solution' is assumed to be with the technology provider. But this cannot work!

Some thoughts on co-design

The answer is some form of co-design, where stakeholder requirements are elicited iteratively.

This is not easy.

Good practice may include:

- More prototypes, storyboards, wireframes
- Find a way to uncover the goals and values at the start, not just a requirements specification
- Independent facilitation, not driven by either the developer or the commissioner
- Focus on the service as well as the product.

Conclusion

Commissioning telehealth solutions needs to be more than just a 'bilateral' process

Key stakeholders – professionals and patients – have values that must be considered

Successful adoption needs

-A co-design approach

-'Values' as well as 'evidence'

-Shared outcome objectives prior to the evaluation.

Any questions?

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