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Using Telehealth and Telecare to Effectively Support Care in The Home Environment to People with Long-Term Health and Social Care Needs

Results from an Action Research Project

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Ideas that change health care

Telehealth and Telecare

Telehealth

- Remote exchange of data between an individual and a health care professional.
  - ❖ Examples: blood glucose monitors; SMS medication reminders; telephone-based health coaching; internet self-care support tools

Telecare

- Continuous, automatic and remote monitoring to manage risks associated with independent living
  - ❖ Examples: pendant alarms; movement/falls sensors; equipment adaptations

The UK market

- Over 15 million possible beneficiaries
- Between 1.6 million and 1.7 million people in England benefit from telecare services (mainly pendant alarms) and the number is growing.
- Telehealth services are comparatively under-developed, with around 7,500 users.
- England takes the lead among most European countries in trialling new products and services.
- Many of these people receive services through the Department of Health's Whole System Demonstrator (WSD) Pilot Programme

King's Fund Action Research

Part of £31m DH *Whole System Demonstrator* Programme

- WSD Action Network with 12 sites, 2008-2011
  - Face-to-face meetings and on-line learning exchange
  - WSDAN roadshows across country
  - Briefing papers
  - **Evidence database**
  - News resources and features
  - **King's Fund Report**
    - **Lessons for successful adoption of telehealth**

Cornwall, Kent, Newham	
Croydon	Leeds
Birmingham	East Riding
Barnsley	Norfolk
Southampton	Lincolnshire
Nottingham	Lancashire
Leicester	Hull

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The Evidence

- What impact does telehealth have on long-term conditions management?
  - Creation of a telehealth evidence database bringing together published materials related to the impact and evidence of telehealth and telecare
  - Contains 430 publications, both high-quality and from the wider evidence base
  - Review of high quality evidence reporting various elements of impact reduced number to 64 studies for further investigation – the majority of these studies looked at heart failure/strokes and diabetes

STUDIES

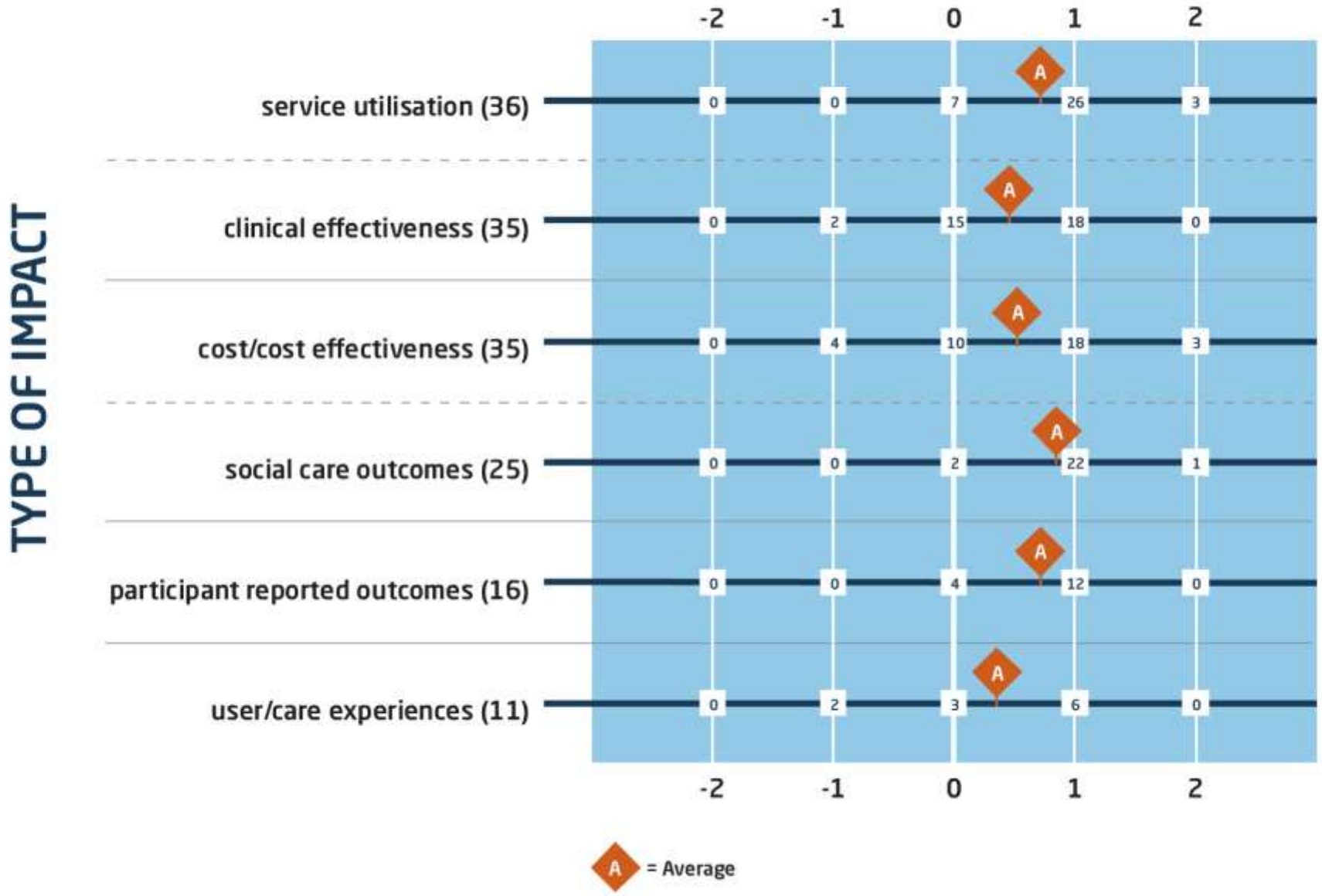
CONDITION	STUDIES
diabetes	22
heart failure / stroke	22
multiple LTCs	07
depression	04
hypertension	04
COPD	03
older people	02
TOTAL	64

OVERALL RESULTS

To analyse the results, we allocated each study a score depending on whether impact was reported as positive (+1) or negative (-1) or had made no difference (0). If changes were significant then the scores were doubled (+2 or -2).

The evidence paints a positive picture overall. Very few studies reported either a negative impact or a significantly positive impact. About one-third of studies reported no impact.

OVERALL RESULTS



HEART FAILURE

Of 22 studies on heart failure, most examined whether remote monitoring can reduce hospitalisations. In 15 out of 20 studies, a positive impact was shown.

HEART FAILURE - RESULTS

HEART FAILURE - CASE STUDY

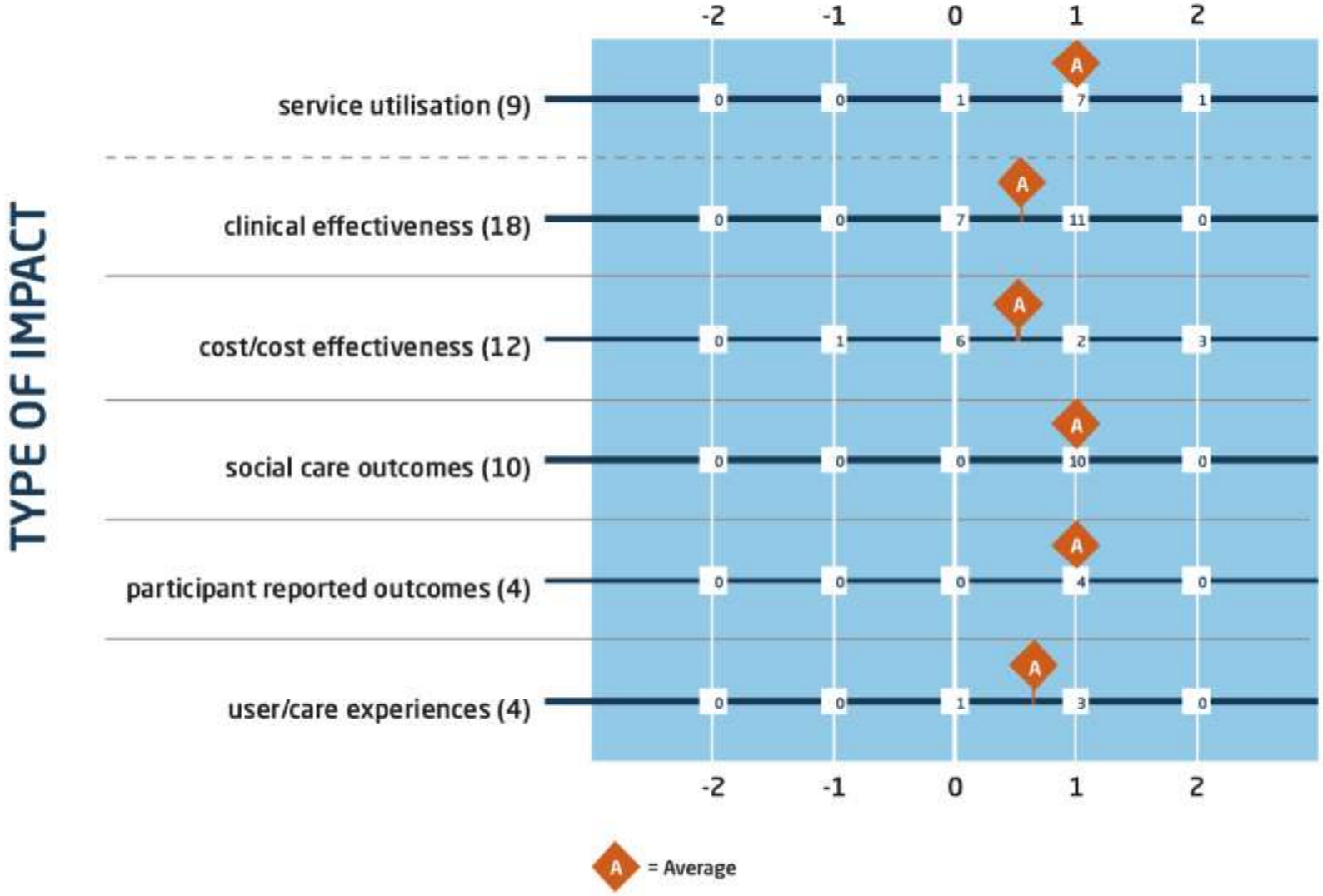
A US-based, randomised controlled trial of nurse-led telephone-based case management involving 130 patients with chronic heart failure reported positive results: a 47.5% lower hospitalisation rate and greater patient satisfaction with care, compared with those receiving usual care.

Riegel *et al* 2002

DIABETES

Of 22 diabetes studies, the majority examined the clinical effectiveness of care. In 11 out of 18 studies, a positive impact was shown.

DIABETES - RESULTS



DIABETES - CASE STUDY

A German-based, randomised controlled trial of 46 patients needing intensified insulin therapy also reported positive results: those transmitting self-monitored blood glucose values had an average reduction in HbA1C from 8.3% to 7.3% compared with a reduction from 8.0% to 6.8% in the control group over the same eight-month time period.

The telehealth service delivered cost savings of €650 per patient compared with usual care, and reduced work absence of patients.

Biermann *et al* 2000

Benefits of telehealth by some long-term conditions

COPD	CHD	Diabetes
• Reductions in exacerbations • Improved self management • Better coping with symptoms • Reduced hospitalisations • Fewer A&E visits • Reduced GP consultations • Reduced community nurse visits	• Lower one year mortality rates • Reduced hospitalisations • Shorter hospital stays • Improved adherence to medications • Reduced GP consultations • Reduced nurse visits • Improved self management	• Improved management of blood glucose levels • Improvements in cholesterol and blood pressure • Better adherence to blood glucose monitoring regimes and retinal & foot examinations • Less use of hospital services • Lower prescribing costs

The Evidence – A Commentary

- Mixed results, only a few studies show negative impact
- Nature of evidence presents considerable problems due to:
  - Condition-specific, mostly for single medical conditions
  - Type of technology
  - Type of client
  - Context of intervention
  - Design of research study
  - Ability to examine impact of technology vs. wider care system reforms

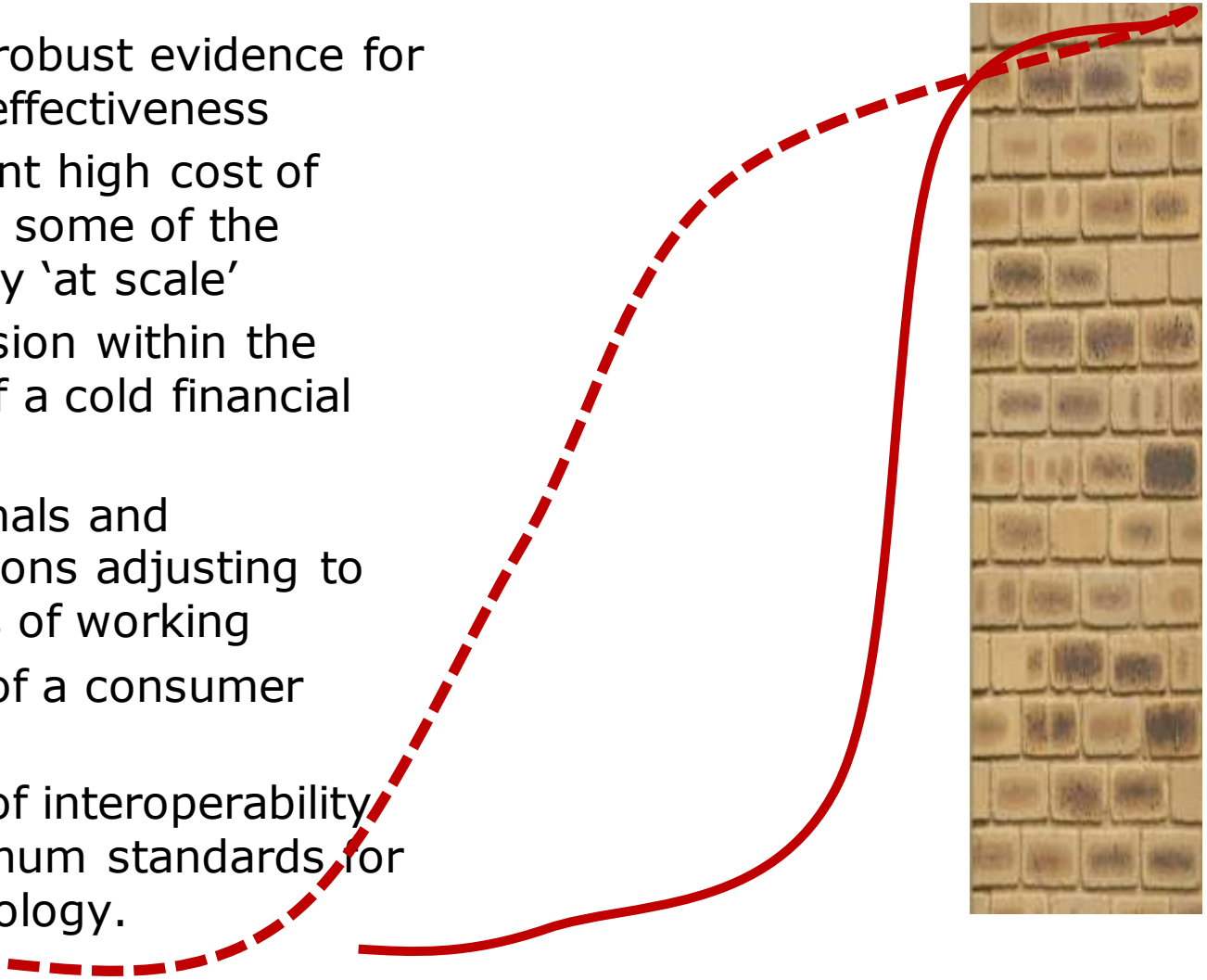
WSD Results

1. DH Headline findings (Dec '11): 15% reduction A&E visits; 20% emergency admissions, 14% in elective admissions, 14% bed days and 8% tariff costs. 45% reduction in mortality rates (3.7% absolute).
2. First peer-reviewed report (June 2012) on hospital activity and mortality confirms figures, but overall cost reduction small - only £188 per patient less without examining cost of implementation.

The evidence base is essentially unchanged and uncertainties remain … [the WSD programme] has not provided the 'proof of concept' on cost-effectiveness that it set out to demonstrate.

Key Barriers for Deploying Telehealth

- A lack of robust evidence for the cost-effectiveness
- The current high cost of deploying some of the technology 'at scale'
- Risk aversion within the context of a cold financial climate
- Professionals and organisations adjusting to new ways of working
- The lack of a consumer market
- The lack of interoperability and minimum standards for the technology.



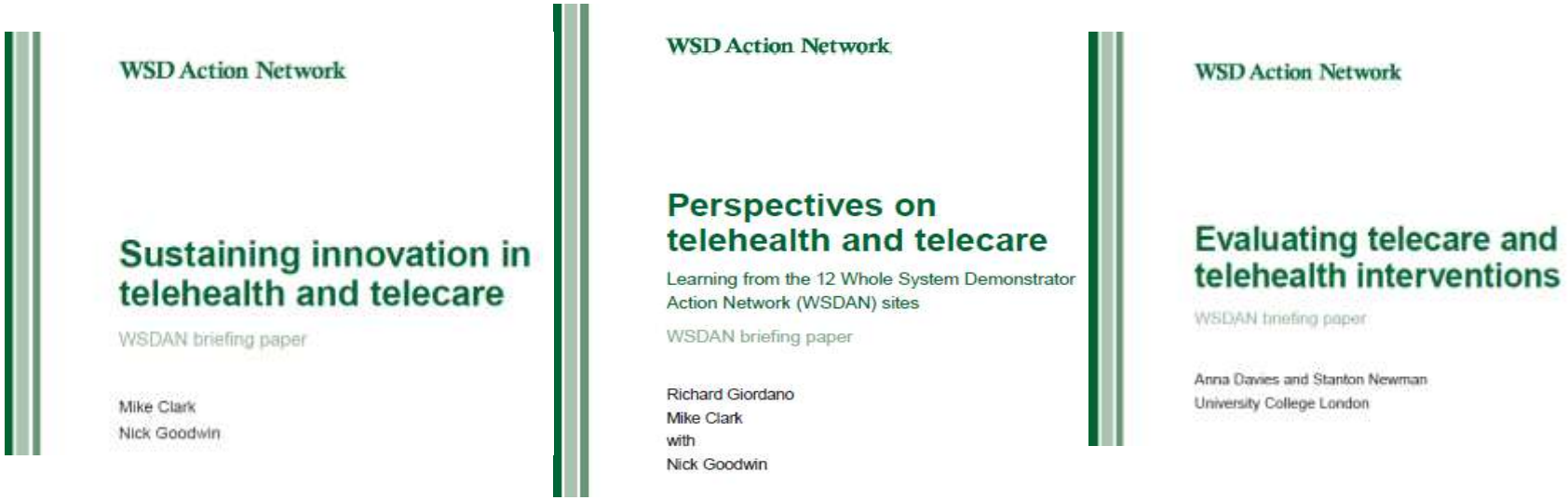
Some Lessons for Adoption

- Fundamental service redesign
  - Integrated care in the home environment
  - Change management – key leaders and willing followers
- Re-shape professional development and training
- Industry re-think
  - Risk-sharing
  - Sell services not technology
  - Meet service needs
- Patients and Carers
  - Engaged as key stakeholders
  - Technology simple to use and increases human contact
  - Safe, secure, empowered
- Functionality
  - Interoperability
  - Shared care records, predictive risk, targeting
- Governance
  - Integrated governance and aligned incentives
  - Developing quality standards

Conclusion

- Successful deployment of telehealth and telecare is far more than a question of technology
- The approach needs to be supported by the fundamental redesign of care services – for example, towards integrated care that reshapes the roles of professionals, their training and how they engage with patients and carers

Further Information



King's Fund Report on telehealth adoption at

http://www.kingsfund.org.uk/publications/articles/th_perspectives.html

PREZI on telehealth evidence at

http://www.kingsfund.org.uk/topics/technology_and_telecare/telehealth_prezi.html

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