

Thirty years of remote care implementation. Lessons from the UK

eHealth@LU Symposium

Lund University

13 April 2023

James Barlow

- Definitions of remote care
- Part 1. The antecedents of remote care in the UK
- Part 2. Remote care becomes part of the policy narrative – and a brief case study
- Part 3. Where's the evidence?
- Part 4. Lessons learnt and the new realism
- Conclusions

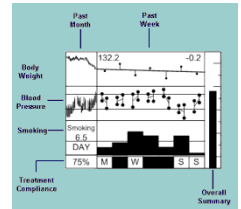
There's **nothing new** about the concept of remote care ...

PRACTICE BY TELEPHONE.

THE Yankees are rapidly finding out the benefits of the telephone. A newly made grandmamma, we are told, was recently awakened by the bell at midnight, and told by her inexperienced daughter, "Baby has the croup. What shall I do with it?" Grandmamma replied she would call the family doctor, and would be there in a minute. Grandmamma woke the doctor, and told him the terrible news. He in turn asked to be put in telephonic communication with the anxious mamma. "Lift the child to the telephone, and let me hear it cough," he commands. The child is lifted, and it coughs. "That's not the croup," he declares, and declines to leave his house on such small matters. He advises grandmamma also to stay in bed; and, all anxiety quieted, the trio settle down happy for the night.

Terminology

- ‘Telecare’
- ‘Telehealth’
- ‘Telemedicine’
- ‘Assistive technology’
- ‘Smart homes’
- ‘Digital health’



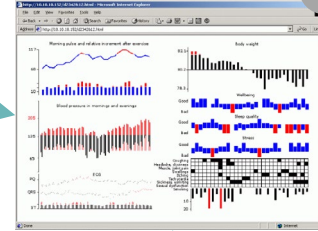
All are used interchangeably to describe the **remote delivery** of health and social care



Telehealth / telecare > telemedicine

Telemedicine	Telehealth / telecare
Diagnosis and triage, advice and support	Brings care directly to end-user - 'electronic security blanket' around vulnerable people
Condition-specific 'tele-ologies' (e.g. teledermatology, teleradiology)	Active or passive monitoring of different types of data to detect trends and anomalies
Fewer stakeholders so relatively easy to implement	Multiple stakeholders so more complex and inherently harder to implement

'Remote care' requires **technological** and **organisational** innovation



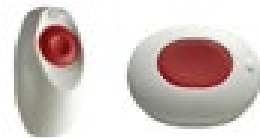
Data science



Organisations – health, social care etc



Devices



Multiple objectives of telecare:

- Information & advice
- Safety & security monitoring
- Vital signs monitoring
- Lifestyle monitoring

- Definitions of remote care
- **Part 1. The antecedents of remote care in the UK**
- Part 2. Remote care becomes part of the policy narrative – and a brief case study
- Part 3. Where's the evidence?
- Part 4. Lessons learnt and the new realism
- Conclusions



1980s developments in **technologies** for assisted living

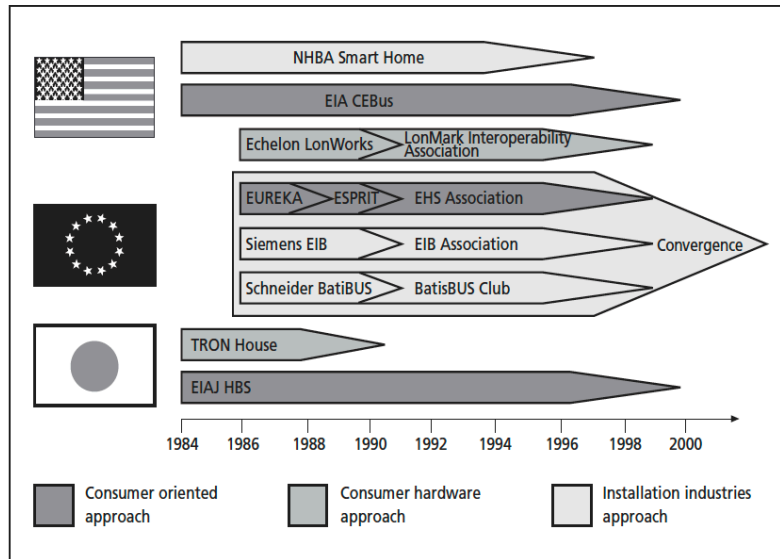
community alarms
assistive technology
home health monitoring

Coupled with emerging concern to
support independent living ...

... and the notion of smart homes



Figure 4.2: Smart Home standards in the USA, Europe and Japan

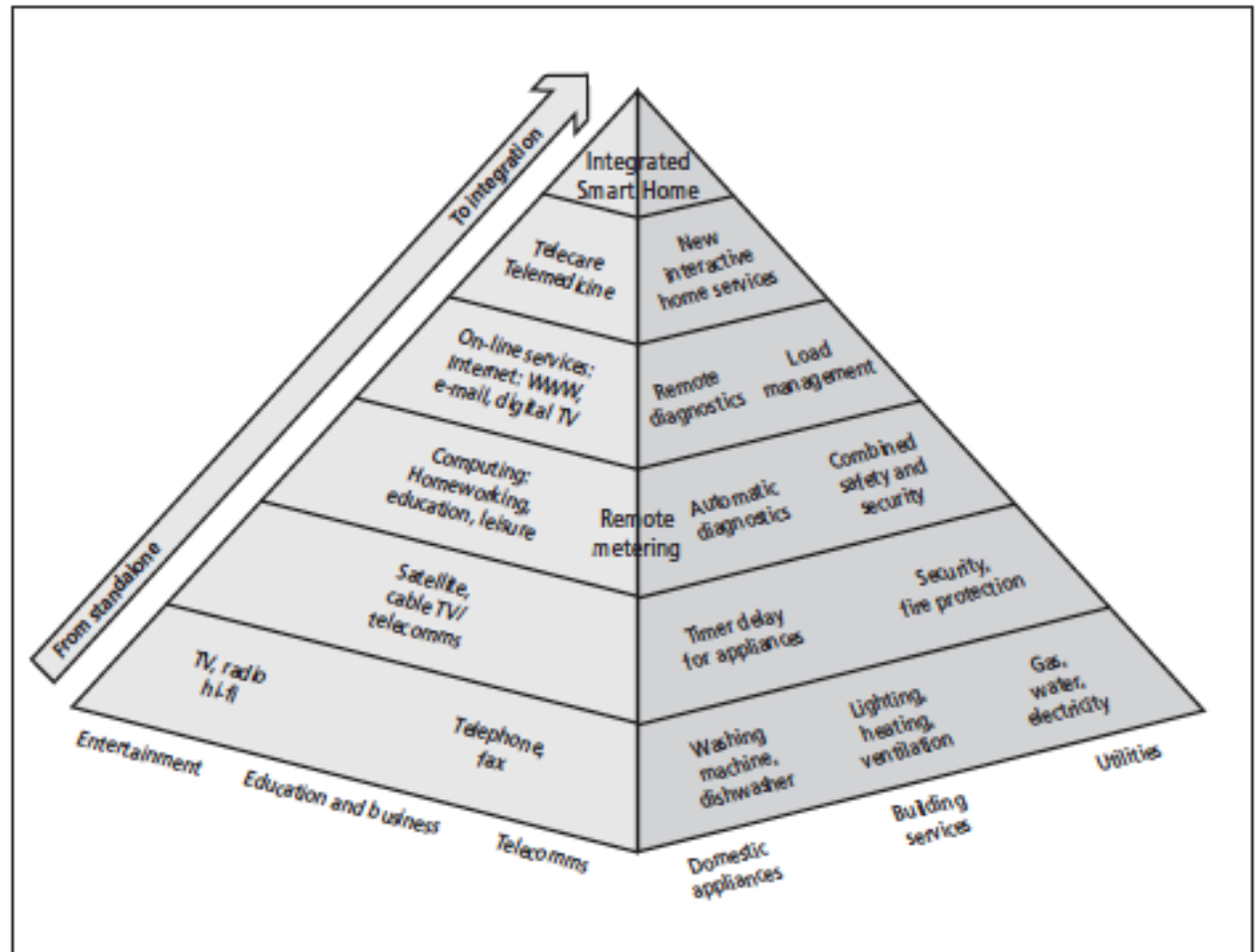


Source: Developed from Jeck (1997), Bromley (see Appendix 2), Heimer (1995).

Source: Gann, Barlow and Venables (1999) *Digital Futures*. JRF

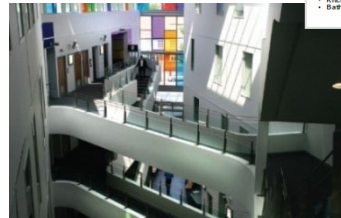
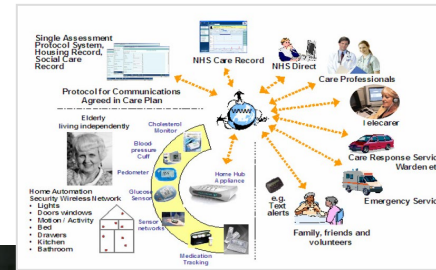
All
combining
into an
integrated
vision

Figure 4.1: From stand-alone systems and services to integrated Smart Homes



- Definitions of remote care
- Part 1. The antecedents of remote care in the UK
- **Part 2. Remote care becomes part of the policy narrative – and a brief case study**
- Part 3. Where's the evidence?
- Part 4. Lessons learnt and the new realism
- Conclusions

Government sees remote care as part of the **next generation** of healthcare infrastructure



Welcome Images

There is policy support ...

- At least twenty government reports called for remote care (1998 – 2012)
- Public finance (Over £200m during 2006 - 2011)
- DALLAS initiative to demonstrate remote care at scale (150,000 people)
- ‘3 Million Lives’ initiative (2012 - 2017)



Many industry case studies and other reports

Efficiency gains and improved quality of care

- Key themes for the season



This issue of Telehealthcare Times could be the most important one to date because it highlights some of the very latest and most compelling evidence and efficiency gains. Now is the time to look very seriously at your telecare and telehealth services and work out how they can be utilised to greatest effect.

Critical time for cost savings

Whilst there are some very good examples, which are highlighted in this issue, the number of Telecare users in the majority of cases, is a tiny percentage of the number of people receiving a care assessment.

Time and time again the evidence shows big savings can be made by using Telecare appropriately and effectively in the care of older people and those with long term needs.

North Yorkshire – new evaluation shows £1m savings in first year

North Yorkshire County Council, for example, has been quoted in the new DH document "Use of resources" as an exemplar of success. Today, telecare is available for all individuals needing Adult and Community Services support as part of the range of mainstream, non-clinical voluntary services.



Evaluation of the Telecare Development Programme Executive Summary

August 2009

The BOW GROUP

Telecare | a crucial opportunity to help save our health and social care system

Professor Sue Yeandle
by Andrew Lansley CBE, MP
Secretary of State for Health

University of Leeds

UNIVERSITY OF LEEDS

BOWGROUP.ORG £10

Healthcare without walls

A framework for delivering telehealth at scale

John Cruickshank
November 2010

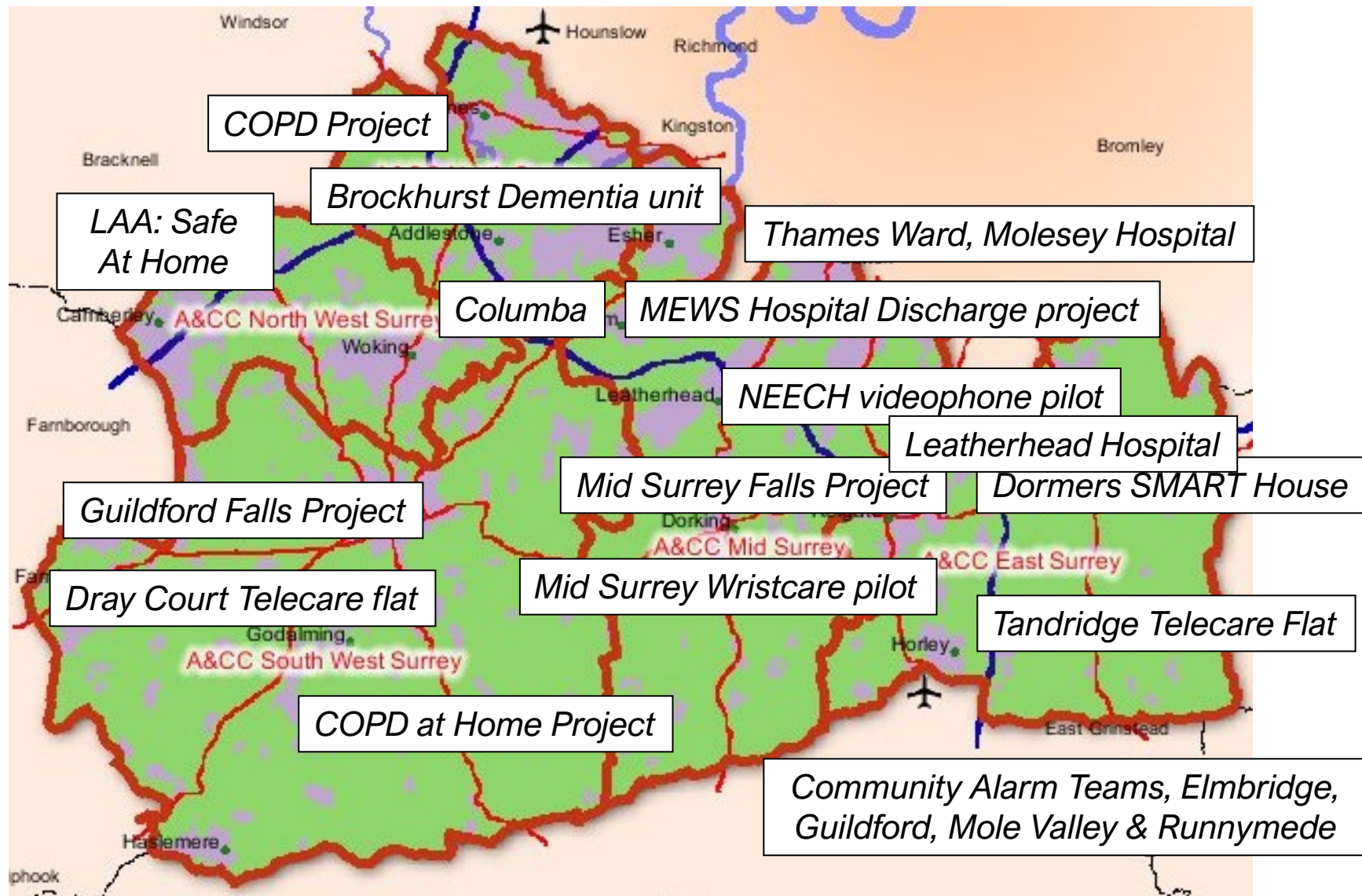
Supporting authors
Gail Beer
Eleanor Wimpenny
Julia Manning

©2020health.org



Many trials and pilot projects established

Diffusion of telecare in Surrey 1998-2005



Remote care began to enter the public awareness ... including the Queen



LifeLink
COMPLETE PEACE OF MIND

Home What is Lifelink? How does it work? Which plan is right for you? Products Meet our Team News Contact Us

WHICH PLAN IS RIGHT FOR YOU?

We offer two rental options because we appreciate that every customer has slightly different requirements and needs.

LIFELINK PACKAGE 1	LIFELINK RESPONDER PACKAGE
£3.69 (per week)	£6.24 (per week)
<ul style="list-style-type: none"> You will need to provide us with at least 2x emergency contacts Alarm unit and 1x Pendant alarm 24 hour monitoring for peace of mind Annual service visit so you don't have to worry FREE Installation Extra sensors from £0.50 per week A Keysafe is £90 or £1 per week 	<ul style="list-style-type: none"> We will act as your emergency contact Alarm unit and 1x Pendant alarm 24 hour monitoring for peace of mind Annual service visit so you don't have to worry FREE Installation Extra sensors from £0.50 per week A Keysafe is £90 or £1 per week
Choose Plan	Choose Plan

Tunstall

Enabling independent living

But despite the effort, **scaling-up proved hard ...**

Case study: the 'Columba project' - remote care for frail older people

- Hospitalised then hard to discharge – housing, care and support, family and friends
- Short-term intensive residential rehabilitation
- Telecare and social care package in their homes
- Aims:
 - reduce the need for residential home placements
 - help reduce delayed discharges



Planned care pathways in Columba project

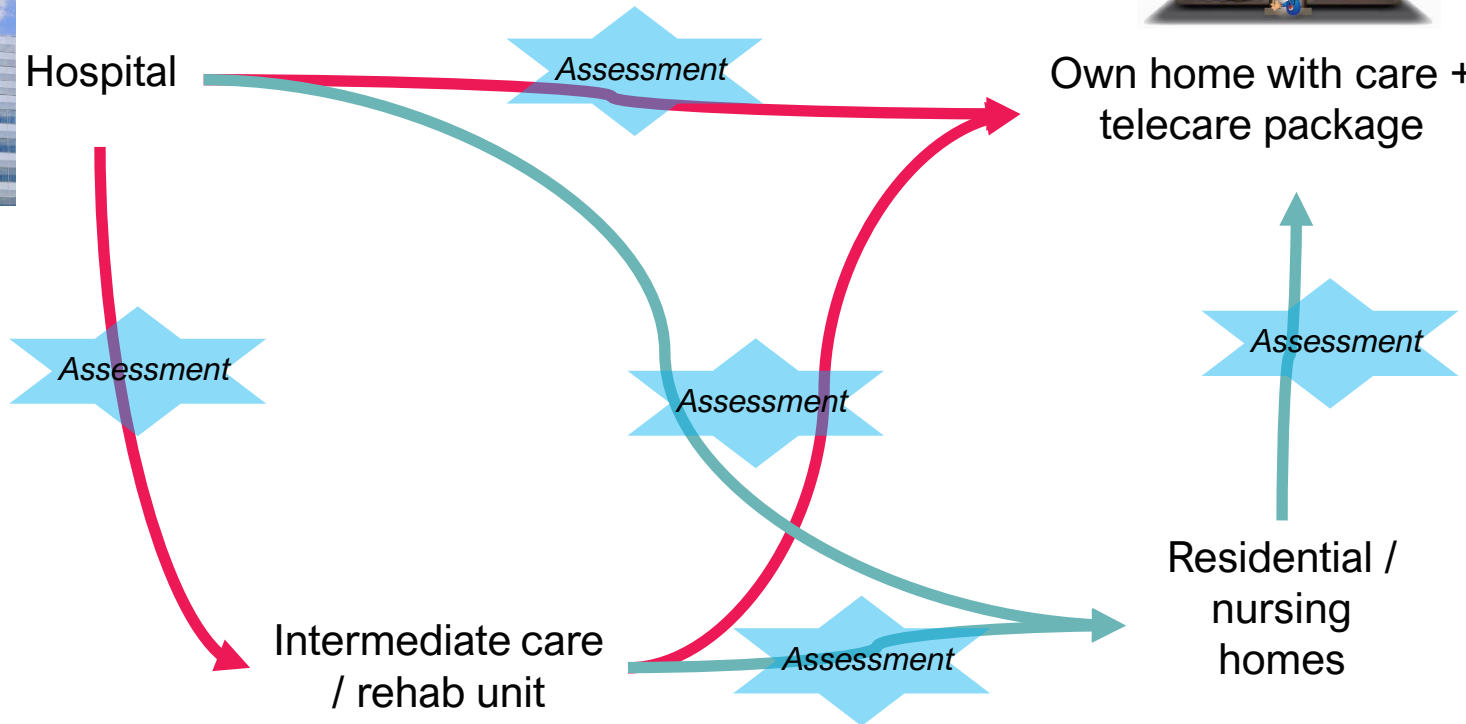
(ideal pathways in red)



Hospital



Own home with care +
telecare package



Intermediate care
/ rehab unit



Residential /
nursing
homes

Organisational complexity

- Many project **stakeholders**
- Project manager did **not have authority** across all stakeholders – many ‘veto points’
- Stakeholders only had **incomplete understanding** of local care system and pathways
- Differing perceptions of **risk and quality of benefits evidence** between stakeholders

Project partners:

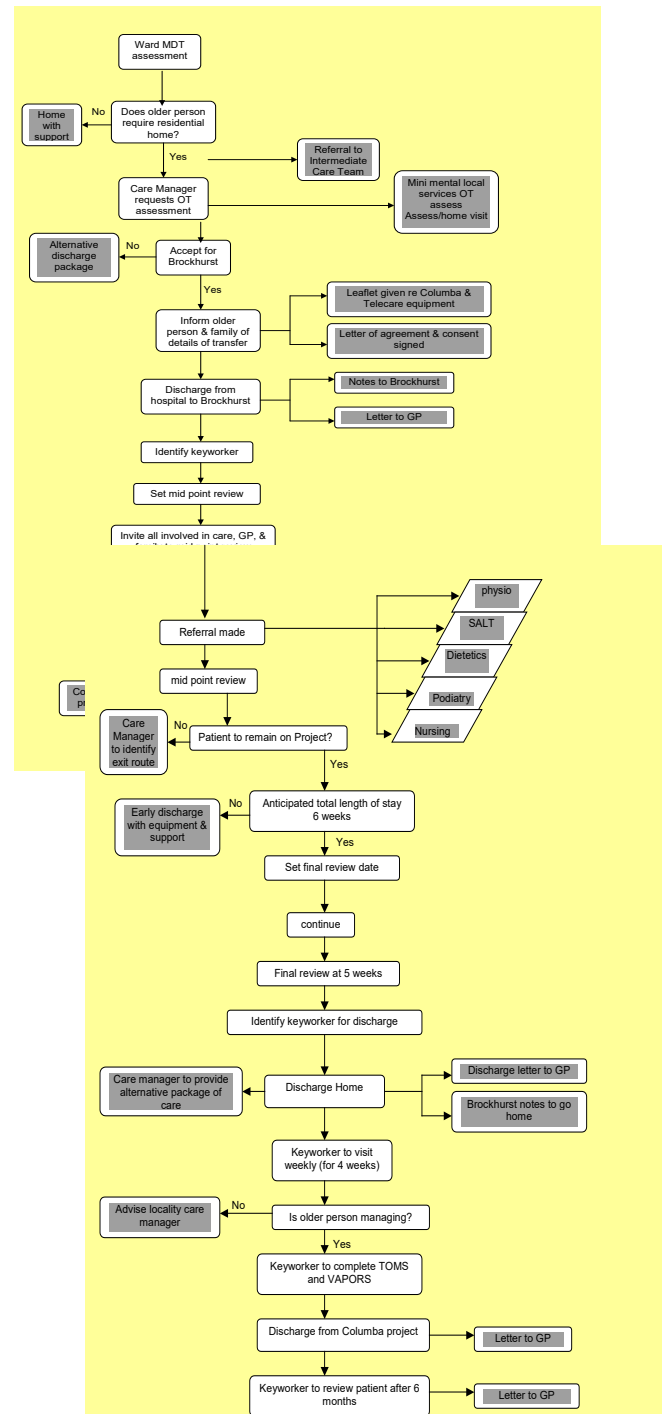
- CUSTOMERS: St Peter’s Hospital NHS trust
- SUPPLIERS: Woking Community Hospital, Runnymede Careline, Tunstall
- FUNDERS: Surrey Social Services, North Surrey PCT, Woking Area PCT

Many stakeholders:

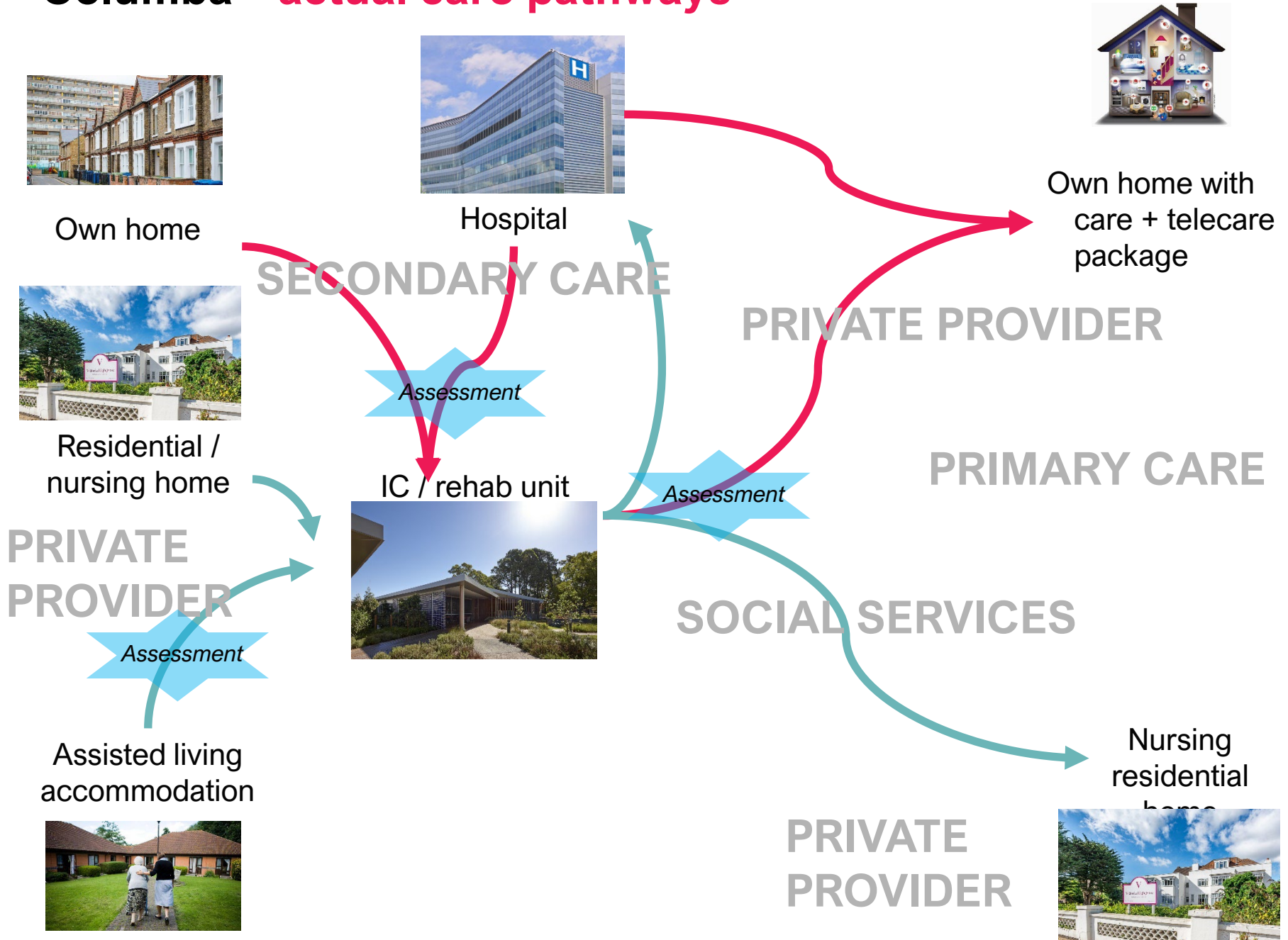
- Service users, their families, informal carers
- Hospital discharge co-ordinators
- Hospital care managers
- Social services OT manager
- OT keyworker
- Brockhurst care manager
- Brockhurst care assistants
- Intermediate Care Team
- Home from Hospital team
- Community social care team
- Social services emergency cover
- Runnymede CareLine Team
- OT technicians

Operational complexity

Patient hospital discharge protocol
... just part of it

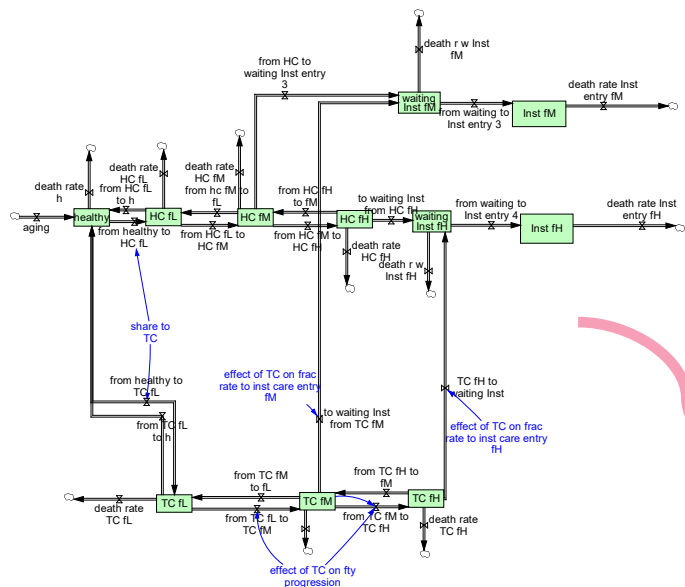


Columba – actual care pathways

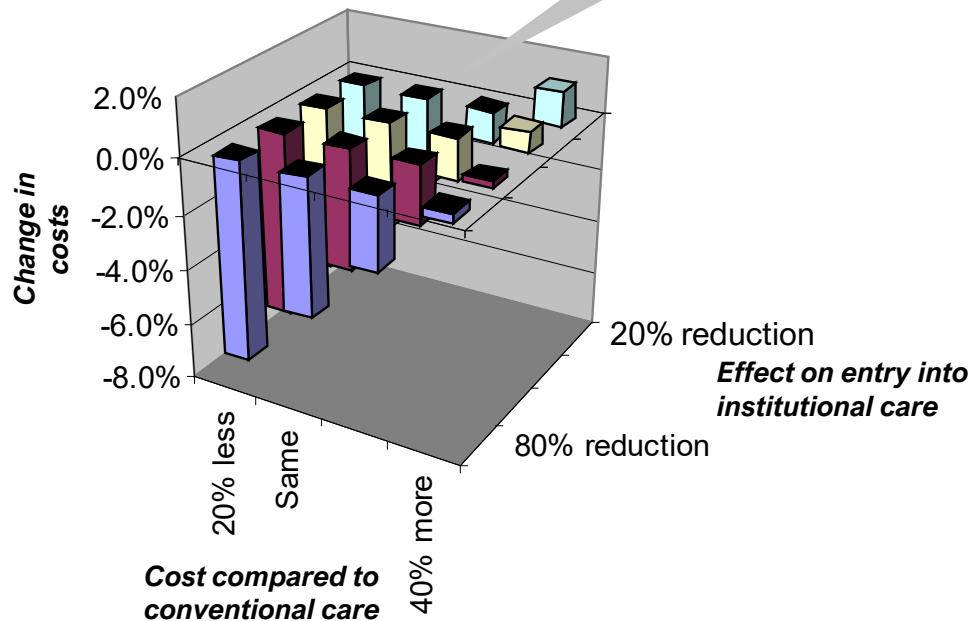


Modelling suggested **reduced care system costs** and **possible benefits** (speedier hospital discharges, reduced care home admissions)

... but these are **unevenly distributed** across local primary, secondary, social care organisations



3 - 5% reduction in costs - overall



- Definitions of remote care
- Part 1. The antecedents of remote care in the UK
- Part 2. Remote care becomes part of the policy narrative – and a brief case study
- **Part 3. Where's the evidence?**
- Part 4. Lessons learnt and the new realism
- Conclusions

Calls to evaluate the evidence


Systematic review of the evidence in 2006 found c.8000 studies reporting impact of telehealth / telecare – but are small scale and economic evidence in weak

Care Services Improvement Partnership **CSIP**
Health and Social Care
Change Agent Team

Building an evidence base for successful telecare implementation – updated report of the Evidence Working Group of the Telecare Policy Collaborative chaired by James Barlow – November 2006

This factsheet supports CSIP's Telecare Implementation Guide. The Guide and other factsheets are available online at www.cat.csip.org.uk/telecare

We help to improve services and achieve better outcomes for children and families, adults and older people, including those with mental health problems, physical or learning disabilities or people in the criminal justice system. We work with and are funded by the Department of Health

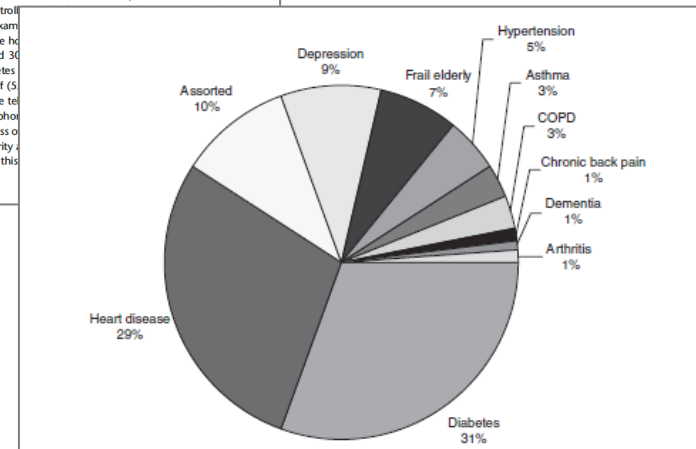


RESEARCH Systematic review

► **A systematic review of the benefits of home telecare for frail elderly people and those with long-term conditions**

James Barlow, Debbie Singh, Steffen Bayer and Richard Curry
Tanaka Business School, Imperial College London, UK

Summary
We have conducted a systematic review of home telecare for frail elderly people and for patients with chronic conditions. We searched 17 electronic databases, the reference lists of identified studies, conference proceedings and Websites for studies available in January 2006. We identified summaries of 8666 studies, which were assessed independently for relevance by two reviewers. Randomized controlled trials with 80 or more participants were eligible for inclusion if they examined technology to (a) monitor vital signs or safety and security in the home. The review included 68 randomized controlled trials (69%) and 30 participants (31%). Most studies focused on people with diabetes (64%) of the studies originated in the US; more than half (53%) were based on the evidence reviewed, the most effective telecare interventions were for reducing health service use and telephonic indicators and reducing health service use. The cost-effectiveness of telecare was insufficient evidence about the effects of home safety and security because there is insufficient evidence about some interventions, this no effect.



Source: Barlow et al (2007)

The need for **robust evidence** to support policy and practice

Whole System Demonstrators programme:

- The **largest randomised controlled trial** of remote care to date
- Three sites with **6000 individuals** in the intervention and control groups
- Quantitative and qualitative evaluation (UCL, Imperial, Oxford, Manchester, LSE, Nuffield)
- Five evaluation themes

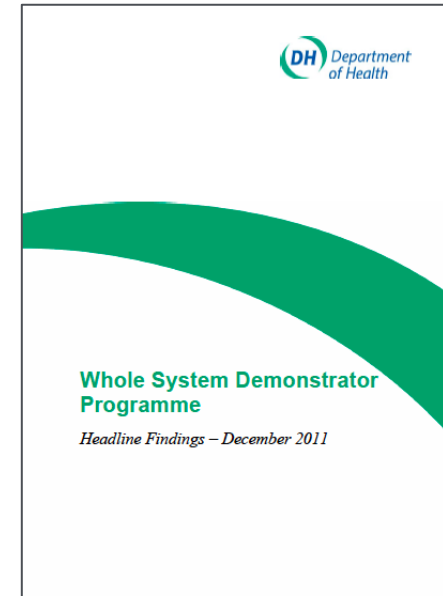


WSD led to many peer reviewed publications showing **some benefits** (during trial period):

- 15% reduction in emergency department visits
- 14% reduction in elective care admissions
- 14% reduction in bed days
- 8% reduction in NHS costs

In 2011 Government announced goal to deliver remote care to **3 million people** by 2016

Supported by a programme to focus on **scaling up** in selected locations and promote a large-scale consumer market



A lesson in evidence based policymaking

Health monitors to be installed in millions of homes

During the world's largest telehealth study, carried out in Newham in East London, Kent and Cornwall, about 120 lives were saved as a result of the technologies. Local trusts also spent 8 per cent less on each patient.

Journalist or DH based on Steventon et al. (2012)

Steventon et al. (2012)

The NHS expects to spend £750 million on installing the systems, but says that it will save about £1.2 billion as a result over the next five years.

DH analysts

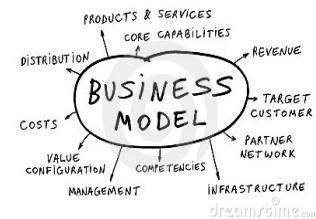
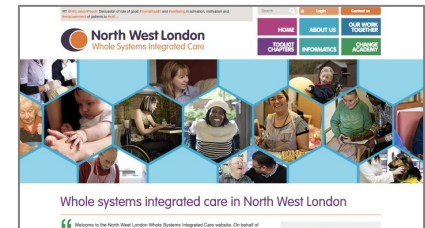
Mr Cameron said in a speech on medical innovation yesterday: "We've trialled it, it's been a huge success, and now we're on a drive to roll this out nationwide. This is going to make an extraordinary difference to people —

Government interpretation

- Definitions of remote care
- Part 1. The antecedents of remote care in the UK
- Part 2. Remote care becomes part of the policy narrative – and a brief case study
- Part 3. Where's the evidence?
- **Part 4. Lessons learnt and the new realism**
- Conclusions

Key lessons from 2000-2011 experience

1. Better evidence is a **necessary, but not sufficient**, condition for scaling-up
2. Need to tackle problems over distribution of **costs / benefits** and **payment / reimbursement**
3. Scaling-up requires new types of partnership between **health / social care organisations**
4. Suppliers need to develop suitable **business models** for remote care



2023

Three forces reshaping the **evolution of remote care** within the health and social care service system



TECHNOLOGY INNOVATIONS:

- Telemedicine post-Covid
- Diagnostics
- Consumer tech
- Data science, AI



NEW MODELS OF HEALTHCARE:

- Patient-centred care
- Integrated care
- Location of care
- Self-care



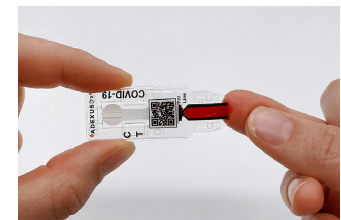
MORE KNOWLEDGEABLE PATIENTS:

- Access to information – internet, support apps, social media
- Rising expectations



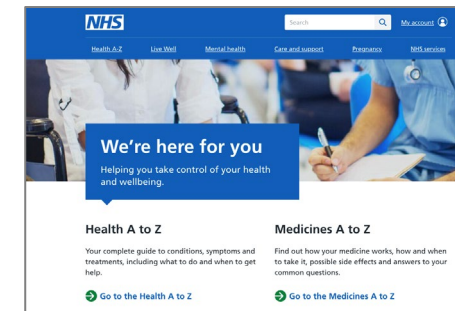
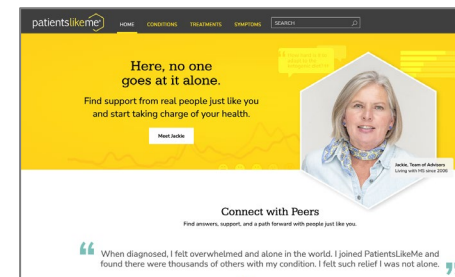
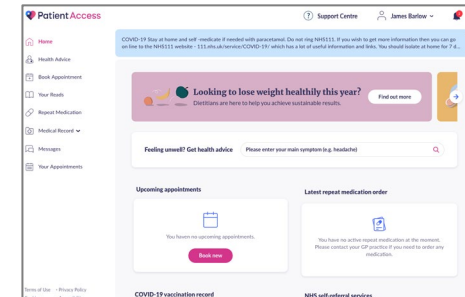
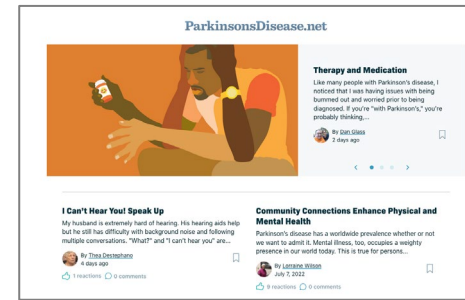
Technology innovation

- Telemedicine post-Covid
- Diagnostics – point-of-care testing
- Consumer health / wellbeing devices and apps
- Data availability and analytics

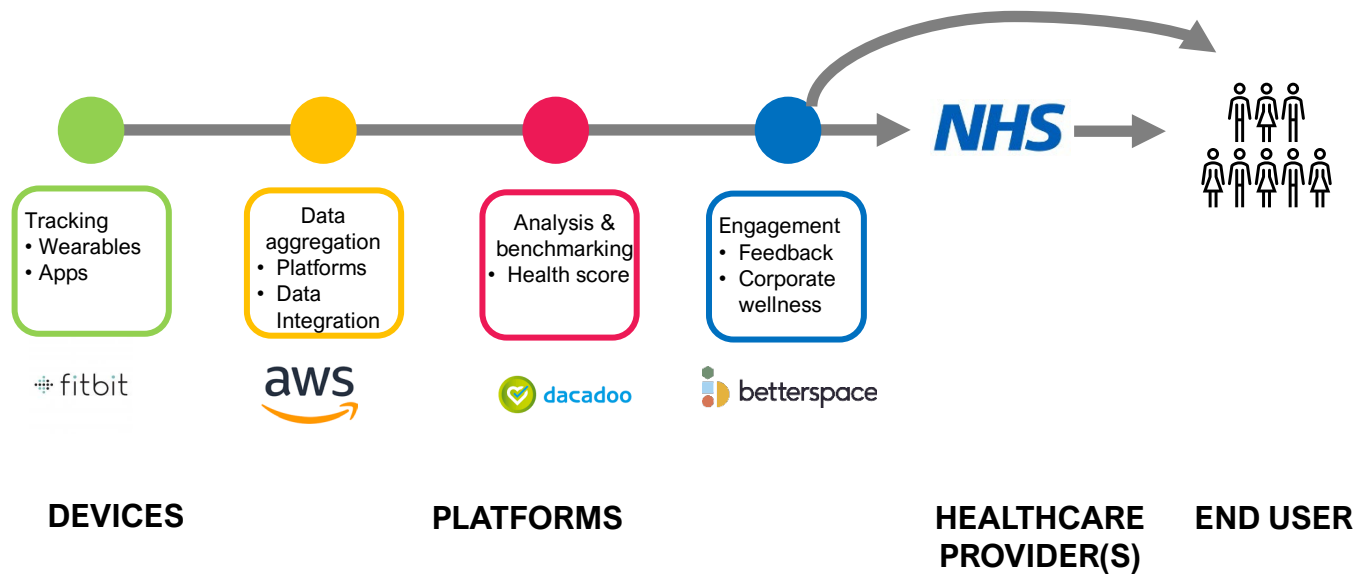


Empowering patients through digital innovations

- Information apps give people **better insight** into their condition
- Over **half the UK adult population** has looked up health information online
- Approximately 40 million people visit **NHS.uk website** every month
- Younger generations increasingly turning to **internet and self-care**
- Potential of **real-world data to advance research** into the impact of interventions and develop more personalised therapies



New players engaging in health sector segments, e.g. a possible 'prevention and wellness' value chain



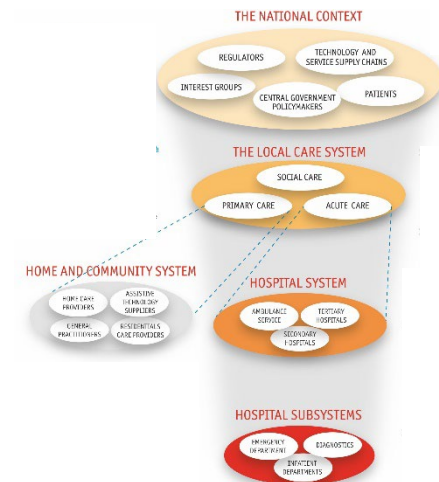
But technology isn't the problem ...

Columba lessons: a **fragmented and complex care system** inhibits remote care implementation at scale

- Multiple players, **complex inter-relationships**, all operating across different scales
- Data chaos:
 - plethora of information systems serving **multiple purposes**
 - organisational and national **silos**



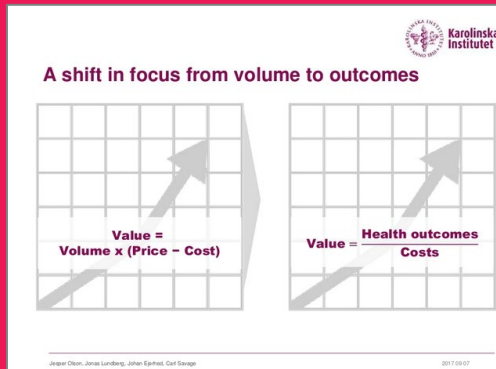
- Local management focus on **improving efficiency** (rather than effectiveness):
 - Cost rather than value driven
 - Emphasis on throughput (waiting times, waiting lists, etc) rather than outcomes



New models of care are slowly emerging

Value-based healthcare

- Emphasis on prevention and wellbeing
- Focus on payment for relevant outcomes achieved rather than inputs or procedures carried out



Carl Savage EHIMP 2021

Integrated care systems

- Partnerships of organisations come together to plan and deliver joined-up care services
- Sometimes involves shared financial planning and sophisticated contractual and payment models



Schluter et al. BMJ Open 2016;6:e010709

Patient-centric healthcare

- Patient placed at the heart of the care continuum
- Holistic approach
- Design / redesign services to involve end-user more closely
- Co-production enshrined in Care Act 2014



How does this translate into remote care?

From remote care to virtual wards

“A virtual ward is a safe and efficient alternative to NHS bedded care that is enabled by technology. Virtual wards, including hospital at home, support patients who would otherwise be in hospital to receive the acute care, monitoring and treatment they need in their own home or place of residence [1]

Design your virtual ward with Inhealthcare

1. Choose your virtual ward
 - Respiratory
 - Frailty
 - Covid-19
 - Cancer
 - BP@Home
 - Create my own
2. Choose your devices – choose from our range of approved, Bluetooth connected devices.
 - Blood pressure
 - Oximeter
 - Vitalpatch® ECG
 - Thermometer
 - Scales
3. Choose your communication methods - Our range of communication channels means our virtual wards are truly digitally inclusive and work for all patients, regardless of WiFi connectivity or technology expertise.
 - Phone
 - SMS
 - Online
 - App
 - Video
 - Direct contact
4. Choose your integrations
 - EMIS Web
 - SystemOne
 - EHR integration

Benefits of the virtual ward

- Enhances the safety and speed of the service by ensuring healthcare professionals are able to access relevant information quickly and effectively.
- Supports better decision-making for workflow and capacity management across primary and urgent care.
- Creates better clinical alert systems, helping to identify when a patient may be deteriorating and to prioritise patients who need urgent treatment.
- Enables timely hospital discharge, freeing up bed capacity.

Find out more at www.inhealthcare.co.uk


docclia

Resources Jobs About Media Speak to us

Get on with care, not logistics

Hassle free virtual wards
35+ pathways and >95% patient compliance.
Unblock beds and unlock clinical capacity.

Speak to an implementation expert



- Virtual wards support frail elderly patients or those with acute respiratory infections and cardiac conditions
- Virtual ward teams **join up care** by connecting hospital expertise with emergency services and use technology to reduce risk by **remotely monitoring patients**
- The model may lead to **20% avoidance** in emergency hospital admissions
- Planned expansion from 10,000 to 50,000 patients a month

[1] <https://www.england.nhs.uk/long-read/supporting-clinical-leadership-in-virtual-wards-a-guide-for-integrated-care-system-clinical-leaders/>

New challenges?

- Failure to deal with **housing stock quality** – major problem for supporting elderly people at home
- Social and healthcare workforce **shortages**
- Maturing technology but immature markets – complicated, burdensome **procurement** processes

*“We recognise the importance of expanding and joining up health and care in people’s homes ... Key to achieving this will be co-producing plans across health and social care and **investment in the workforce** in social care and community services ...”*

Sarah McClinton, President of ADASS
<https://www.digitalhealth.net/2023/01/government-plans-500-expansion-of-virtual-wards/>

- Definitions of remote care
- Part 1. The antecedents of remote care in the UK
- Part 2. Remote care becomes part of the policy narrative – and a brief case study
- Part 3. Where's the evidence?
- Part 4. Lessons learnt and the new realism
- **Conclusions**

Conclusions

- Lessons on **mainstream implementation challenges** have been learnt (payment/reimbursement, silos, evidence) but not fully addressed ... moves towards Integrated Care Systems could help
- There is **better knowledge** about what type of remote care works and in what circumstances ... initiatives are now better targeted
- New (old) **challenges emerging** – quality of the housing stock, availability of health and social care staff, procurement processes
- Back-end innovation (data science) should ensure that **predictive models** mooted 20 years ago will be realised, helping preventative care
- Introduction of **new players** (tech giants, data science start-ups) is a potentially disruptive innovation
- Wider benefits from increased patient monitoring and generation of **real-world data for R&D**, including pharma, but these depend on data regulations

We always seem to be at a **tipping point**



"Over the next decade, the telemedicine industry will expand into new markets and service areas. Furthermore, its rapid rise will have a profound impact on the delivery and quality of medical care worldwide. In the United States alone, we expect telemedicine will represent at least 15 percent of all health care expenditures by 2010"

Telemedicine Industry Report 2000

"Telecare has arrived. This year's annual review reflects the transformation of our sector from social alarms to Telecare, and the repositioning of the Telecare service model from the periphery of housing, social care and health to centre stage"

Association of Social Alarms Providers 2004

"2008: The year telecare grows up?"

**E-Health Insider,
2007**