

Harnessing History at Source

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Overview

90% of the history is in the diagnosis

Contemporary history taking is flawed

2015, the rise of Patient Reported Outcome Measures (PROMs)

How IT can overcome the barriers

Coproduction is key for usability

System and workflow integration is critical

Interoperate, or die

The best solutions improve health AND save costs

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sensor, synthesis and storage
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Is this surprising?

We are a complex integrated sensor,
synthesis and storage system

Health is dynamic and $>99\%$
of health and wellbeing
occurs away from the clinic

Technology infiltrates everywhere



In healthcare –

Most advances in diagnostic and monitoring technologies have NOT focused on history

Technology infiltrates everywhere



In healthcare –

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Contemporary History Taking

So when did you first notice you were becoming forgetful?



What are the Barriers?

What are the Barriers?

Memory

Tight relationship between:

What are the Barriers?

Memory

Tight relationship between:

Time

- diminishing returns

State

- environment
- situation
- affect
- metabolic
- pharmacologic

What are the Barriers?

literacy

social

cognitive

language

Communication

disability issues

economic

cultural

What are the Barriers?

Interpretation and transcription

assumption
pre-supposition
clinical “balance”

How do we overcome these barriers?

One strategy is to use self-report

2015 was a year of vindication for the use of Patient Self Report, or Patient Reported Outcome Measures as a standard

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THE LANCET

Volume 385 · Number 9984 · Pages 2223-2322 · June 6-12, 2015

www.thelancet.com

“A genetic risk score identified individuals at increased risk for both incident and recurrent coronary heart disease events. People with the highest burden of genetic risk derived the largest relative and absolute clinical benefit from statin therapy.”

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Editorial

Genetics in medicine—
progress and pitfalls
See page 2275

Comment

Prevention and management
of implantable cardiac
electronic device-related
infection
See page 2275

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FINGER: A 2-year
multidomain intervention to
prevent cognitive decline in
at-risk elderly people
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Safety and immunogenicity
of a novel recombinant
adenovirus type-5 vector-
based Ebola vaccine in
healthy adults in China
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Rubella
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Monitoring the athlete training response

Subjective self-reported measures trump commonly used objective measures

Designed by @YLMsportScience

By Saw, Main & Gastin, BJSM 2015



56 original studies reporting concurrent subjective and objective measures of athlete well-being

SYSTEMATIC REVIEW



1. Subjective well-being responded consistently to stress imposed by training, deteriorating with increased and chronic training and improving with reduced training



2. Subjective well-being typically worsened with an acute increase in training load and with a chronic training load; and improved with an acute decrease in training load



3. There was no consistent association between subjective and objective measures



vs



HOW MIGHT IT IMPACT ON CLINICAL PRACTICE?



Subjective measures are useful for athlete monitoring, and practitioners may employ them with confidence



Subscales which evaluate non-training stress, fatigue, physical recovery, general health/well-being and being in shape are responsive to both acute and chronic training



Athletes should report their subjective well-being on a regular basis and alongside other athlete monitoring practices

History

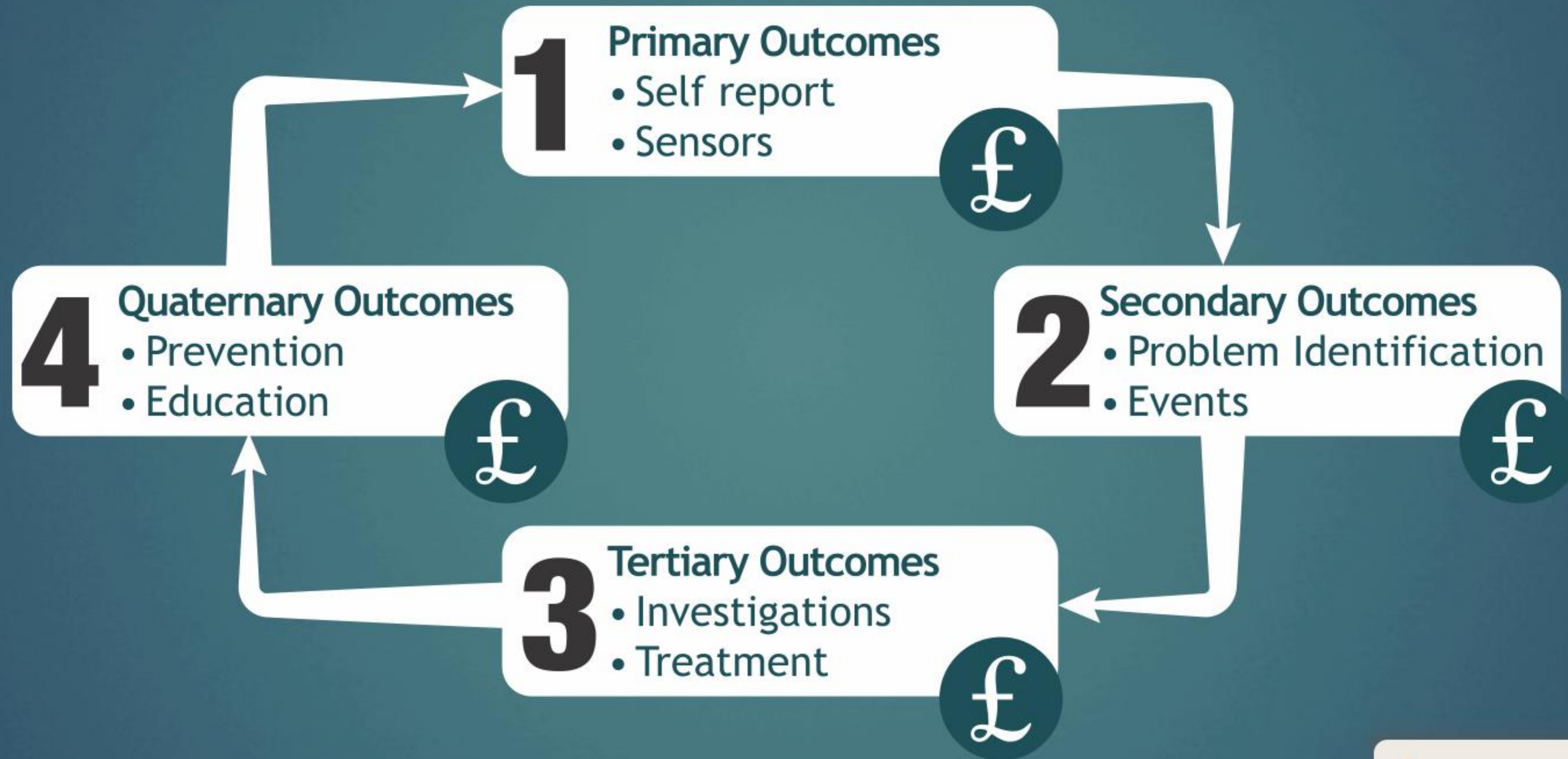
History

is not only in the diagnosis

History

it is in the prognosis as well

Why does this matter?



How can PROMs be made better

- **Accessibility**
- **Quantify and Digitise**
- **User engagement**
- **Workflow integration**
- **Lead to useful actionable information (utility)**
- **Integrate and cross validate other data streams**

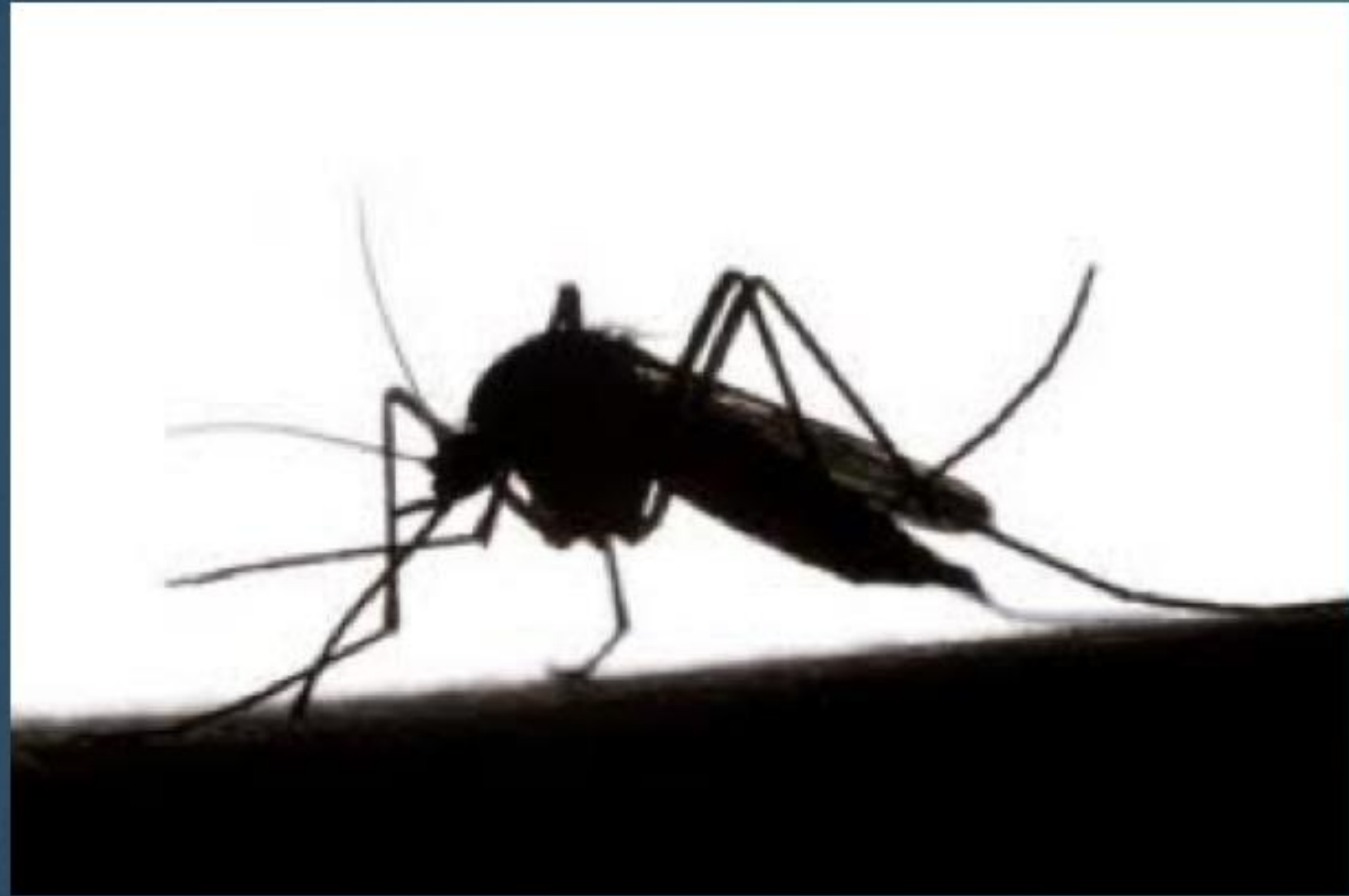
Accessibility

How do we address digital exclusion?













Accessibility

Use pictures

Consider vision, hearing, learning and other ranges of ability

Familiar interfaces – do not reinvent the internet

Accessibility



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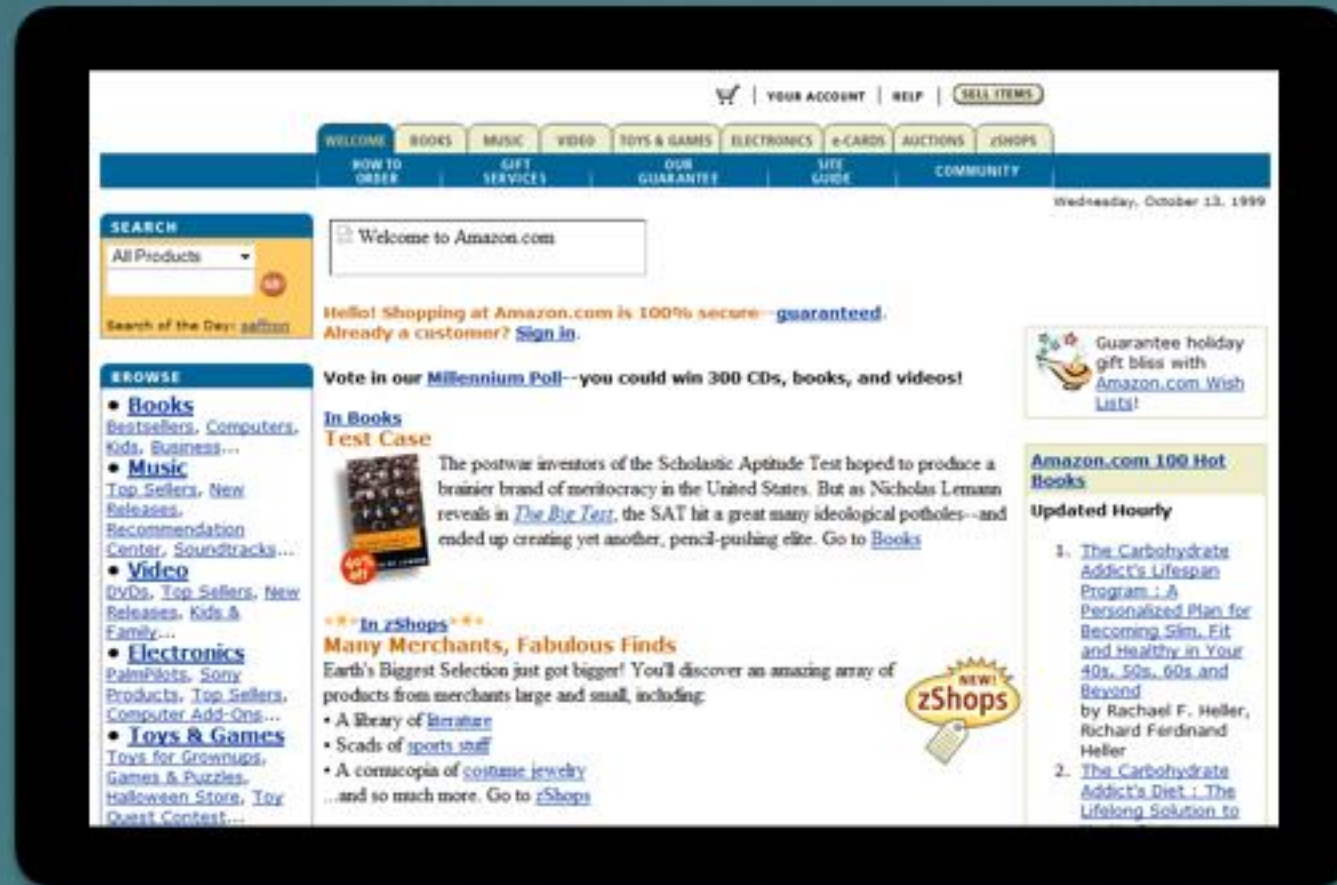
Familiar interfaces – do not reinvent the internet

The internet and the user interfaces have evolved over billions of user trials to produce a range of robust and compelling user experiences

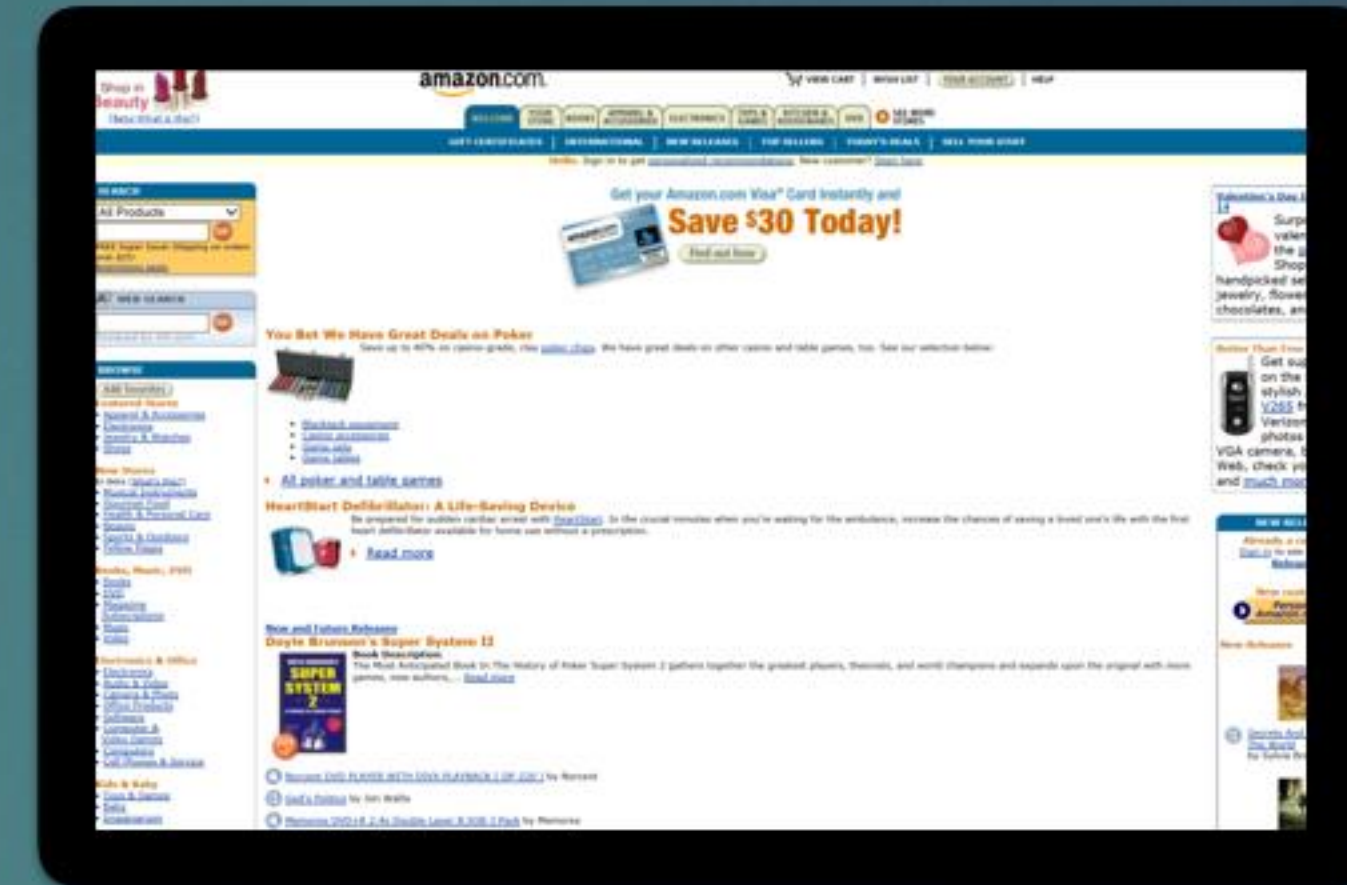
1994



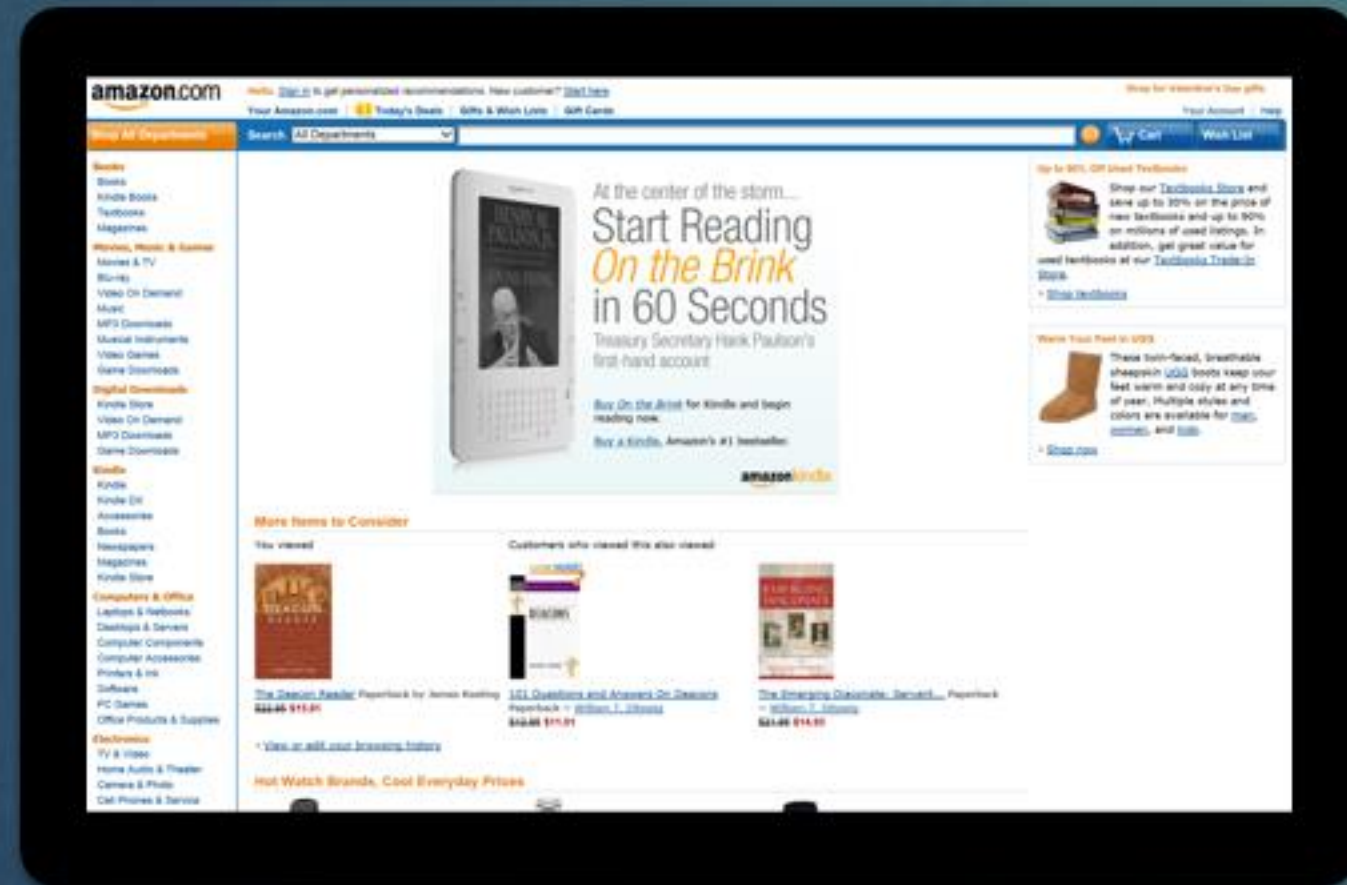
1999



2005



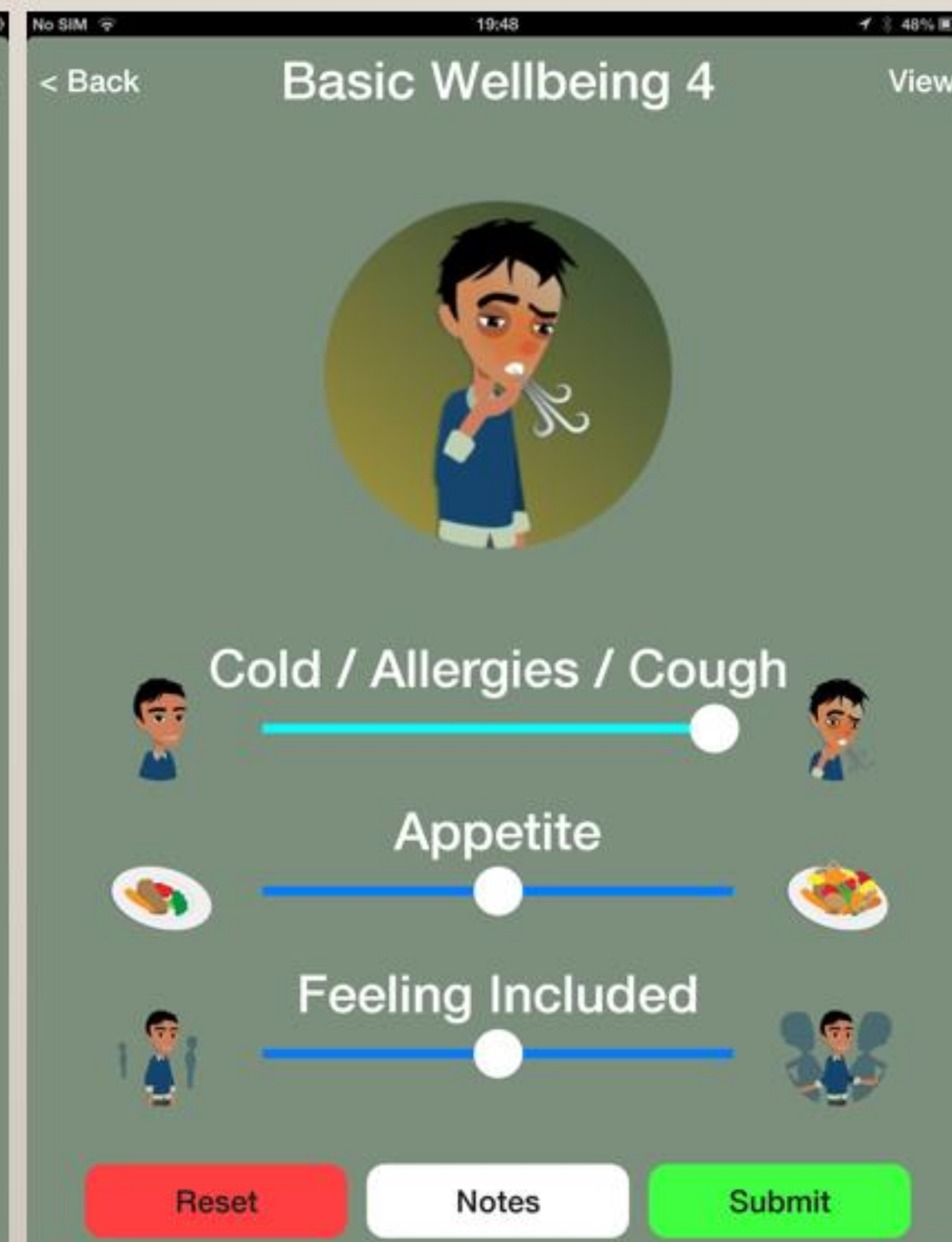
2010



2015



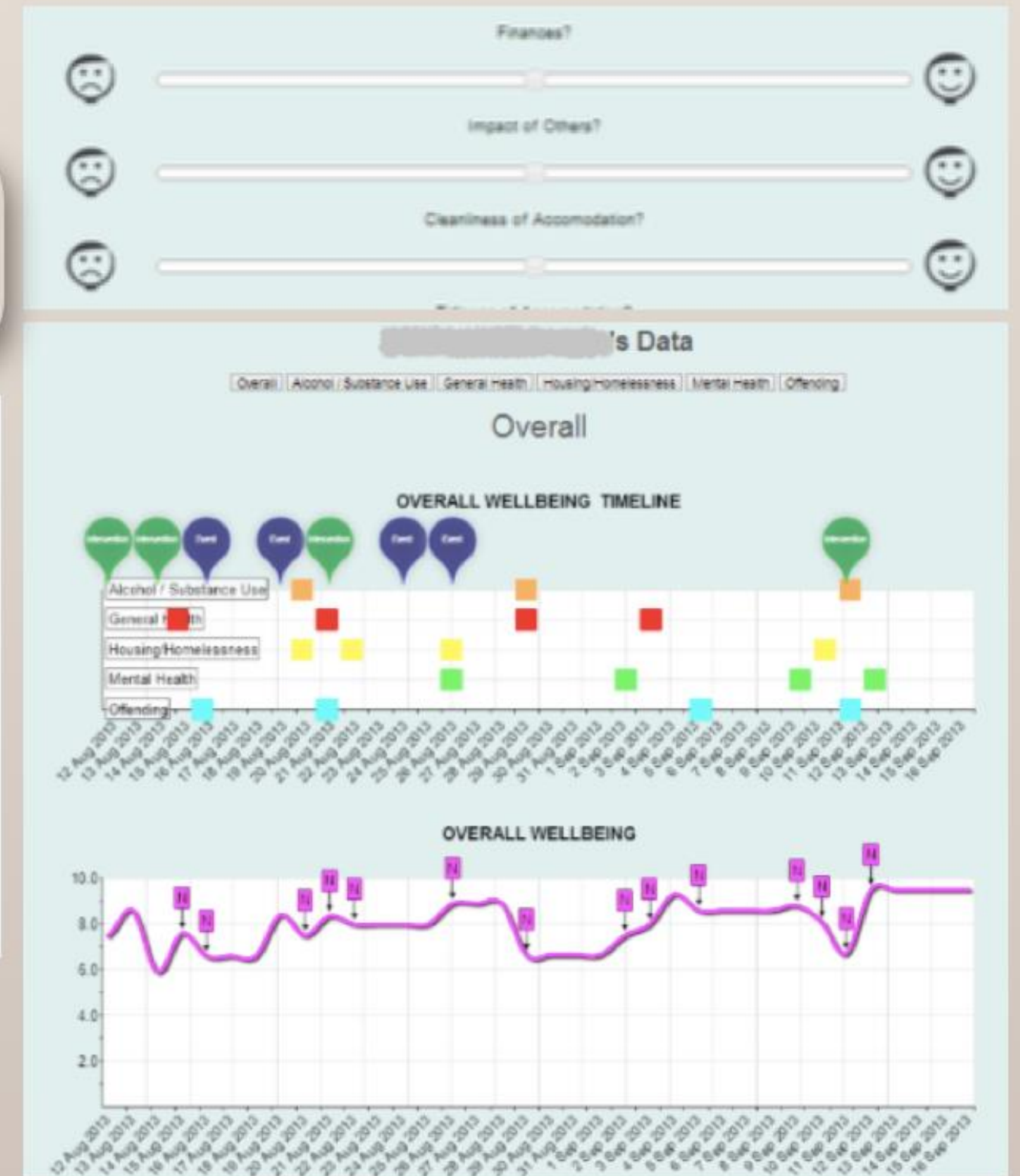
Research, break down, quantify and digitise



Co-production is key

Wellbeing
Mental health
Engagement
Staff satisfaction
Negative interventions
Prospective audit tool

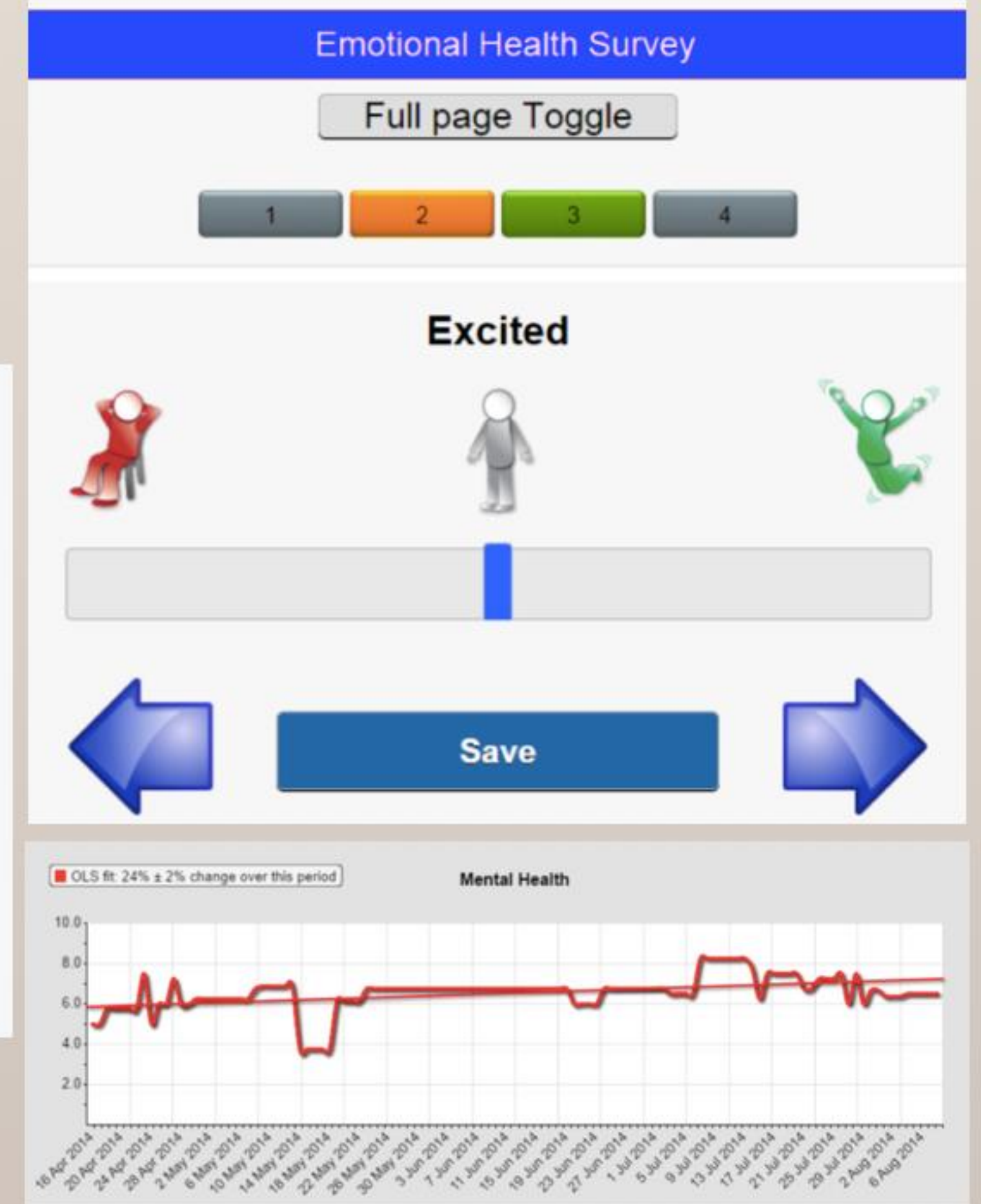
YMCA study
2013



Co-production is key

**Better communication
New diagnoses**

Hft pilot
2014



Co-production is key

Improved control
Increased activity
New model of care

One Precious Life
2014



home info hub e-books technology news about us login

search OK

technology mind body nature's pharmacy

top posts

- Work, Nutrition and Exercise - The Key to Longevity?**
Ade Blanchard
Dr Charles Eugster, who soon turns 95 believes the key to longevity is exercise. The 34 time World Masters Rowing Championship Gold medallist, World Strenflex champion views retirement as a 'financial catastrophe' and emphasising the importance of working along with good nutrition and Eugster believes retirement should be abolished, as [...]
- The Scales May Deceive Us as We Age**
Jack Barton
Many individuals become more conscious of their weight as they age. A progression of a reduction in activity levels (for most, hopefully not if you our blogs) often leads to a slight gain in weight over the years. Therefore, uncommon for individuals to hop on the scales more frequently in order to opinion, [...]
- Activity, Weight Loss and Osteoarthritis Pain**
Jack Barton
Osteoarthritis is a condition categorised by degeneration of the cartilage

a) Home lincus

Welcome, Coach Motivator!

- Survey
- Activity
- Nutrition
- Events
- Data
- Messages
- Networking
- Coaching
- Profile

b) Home lincus

Welcome, Test User!

c) Home lincus

Welcome, Test User!

System and workflow integration is critical

Lessons from co-production

Every engagement is different – YMCA and Hft

Obstructive cultures and subcultures

Working with key people

Value proposition for ALL stakeholders

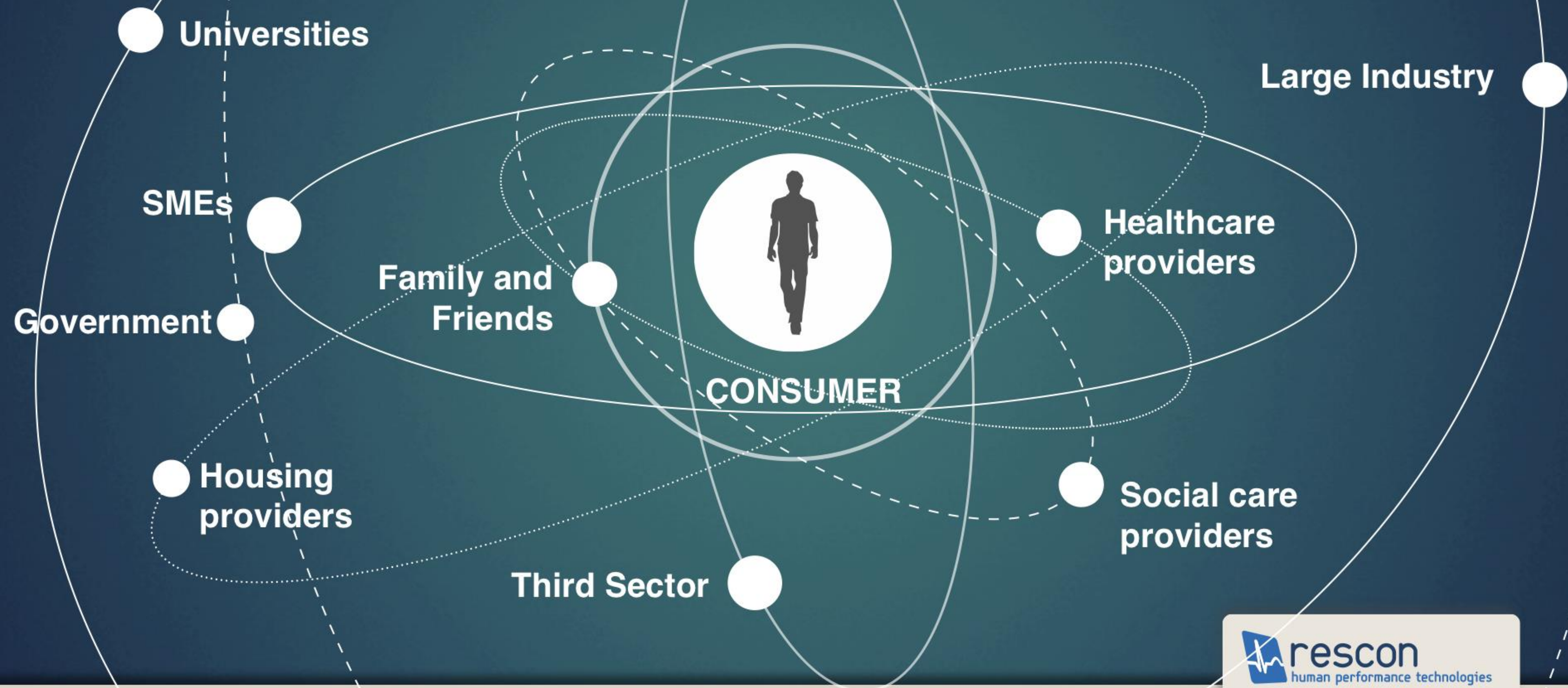
Cost centre integration

A lot more than information governance

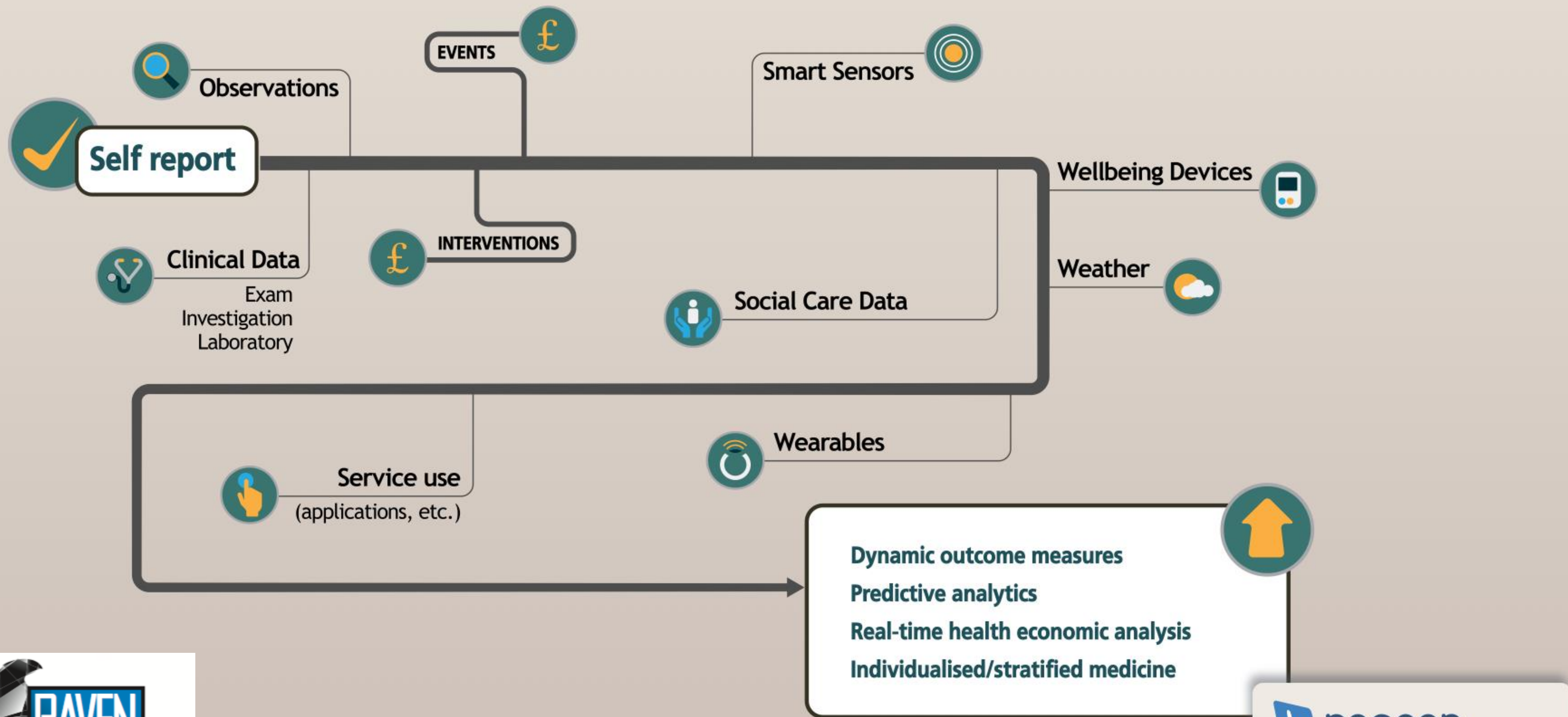
A “great deal” can be a burden – training

Interoperate, collaborate – or die

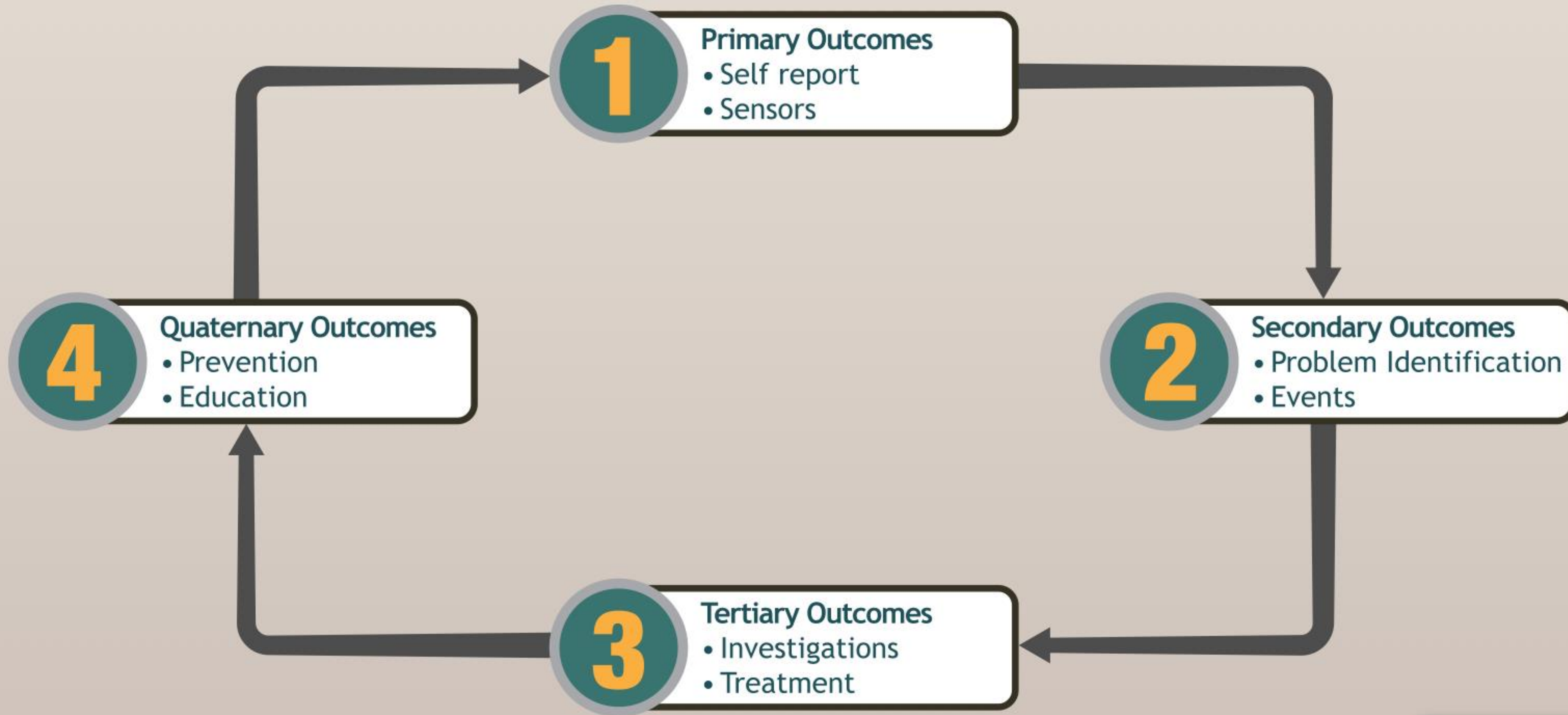
A collaborative ecosystem into the future



IT can improve health AND save costs



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**Diabetes - £10 billion per year
£2,600 per patient**



**COPD - £6 billion per year
£1,500 per exacerbation**

Advantages

**Quantified
Life improvement**

Improve control
Anticipate

Interoperate

Digitised

Primary Outcomes

Better healthcare

More empowered citizens

Intelligent Algorithms

Anticipate
Improved resource provision
Predict

Analysed

Improved Decision making

Integration

Improved engagement

Standardises

Validate

Proactive

Enhanced accountability

Better Visualisation

Acknowledgements



citrussuite



NHS
Liverpool
Clinical Commissioning Group



OVIVA

v-connect

CARE
INNOVATION



creative
england

NHS
National Institute for
Health Research



Riverside



pss
person shaped support



SOMO



DCD
DIGITAL CREATIVITY
IN DISABILITY

nwc
NORTH WEST COAST
ACADEMIC HEALTH
SCIENCE NETWORK

rescon
human performance technologies

Thank you, Questions?

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