Lessons from the NHS Test Beds programme

Amy Galea

King’s Fund Digital Health and Care Congress
Test Beds – Wave 1

Test Beds at a glance

1. Lancashire and Cumbria Innovation Alliance
   Improving support for those over 55 with Chronic Obstructive Pulmonary Disease, heart failure and dementia. Integrating technologies and linking them to new care models supporting self-care at home.
   - Participants: 1,300
   - Innovators: 7

2. Long Term Conditions Early Intervention Programme
   Promoting early intervention to reduce the burden of ill-health by developing a predictive algorithm, redesigning pathways, and training health professionals.
   - Participants: 214,700
   - Innovators: 2

3. Diabetes Digital Coach
   Providing people with type one and type two diabetes with a selection of integrated ‘Internet of Things’ digital tools to manage their condition.
   - Participants: 1,000s
   - Innovators: 8

4. Perfect Patient Pathway
   Improving pathways for asthma, diabetes, falls and frailty by increasing access to technology and facilitating information sharing.
   - Participants: 1,300
   - Innovators: 7

5. RAIDPlus
   Developing a demand and capacity tool that shows patient flow in real-time and a predictive algorithm to identify when people are going to experience a mental health crisis.
   - Participants: 33,000
   - Innovators: 2

6. Care City
   Testing a combination of digital devices and software alongside new approaches to service delivery and patient participation.
   - Participants: 4,100
   - Innovators: 6

7. Technology Integrated Health Management
   Providing people with dementia and their carers with: wearables, monitors and other devices which will combine into an ‘Internet of Things’ to monitor their health at home.
   - Participants: 1,400
   - Innovators: 7
Test Beds – Wave 1

51 Digital products

40 Innovators

4000+ patients recruited

8 Evaluation Teams

75 partnership organizations

5 Year Forward View

Islands of innovation

Lack of real-world evidence

Innovations not integrated with system

Test Beds Wave 1

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### Test Beds Wave 1 – Learning Legacy ‘How to’ Guides

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<td>Pioneering partnership working</td>
<td>New forms of information sharing</td>
<td>Nuances of real world evaluation</td>
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#### Partnerships guide
- Set-up phase and project definition is critical
- Relationships first, contracts second
- Bridge the culture gap between NHS and industry

#### Information governance guide
- Plan how to tackle IG early on and engage experts
- Communications strategy is pivotal for IG
- Use IG strengthening technologies

#### Evaluation guide
- Clear logic models / theory of change from the start
- Driving participant recruitment
- Incentivise data sharing

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Building on our learning legacy

Wave 2

- 6 collaboration events
- 337 expressions of interest
- 78 completed applications
- Test Beds announced
- Wave 1 evaluation report

We are Here

Set-up phase
Partnerships
A Test Bed Perspective

10\textsuperscript{th} July 2018
\textbf{John Craig,} CEO, Care City
\textbf{Glyn Barnes,} Marketing Director, AliveCor
We think it’s beneficial to have a neutral broker to bridge the trust gap between innovators and the local health and care system.
If time is invested upfront, true collaboration can be achieved

Contributions

- Time commitment – from individuals, teams & stakeholders
- Knowledge sharing – about the product and the health condition it seeks to improve
- Ideas & Openness – understanding how the product works for us & how it could work for others
- Traction – staying focussed and relentless to yield results
- Added Value – bringing stakeholder groups together to learn quickly from each other
- Design – intelligently integrating & promoting the use of the product

Key Advice

1. Share the same values
2. Take a collaborative approach
3. Get the basics right
LANCASHIRE AND CUMBRIA INNOVATION ALLIANCE

Test Bed Programme
Information Governance
Christine Gornall – Project Manager

@LCIATestBed  www.lciatestbed.org.uk
LCIA Collaboration

• Size ➔ Scale ➔ Complexity
• The Lancashire and Cumbria Innovation Alliance (LCIA) was formed in April 2015
• 14 partners involved including over 70 individuals
• 2 vanguards with 2 different models of care
• Different care pathways
• Each organisation has their own objectives and priorities
• Varied interpretation of risk and information governance
• Varied skill set within organisations
Timeframe

June 2016
- Initial collaboration agreement distributed to all partners for comment
- Communication and discussions continue with partners regarding the collaboration agreement
- Identifying issues and gaps that need addressing prior to signing

July
- PM appointed – initial focus on the collaboration agreement which raised the IG question due to the clause relating to data sharing
- First high level data flow map revealed
- Engagement with the ‘missing party’ begins
- Data Processing Questionnaires and PIA templates are despatched to all partners

Aug

Sept
- Partners will not sign collaboration agreement will until all the IG has been approved and signed off
- Face to face meeting set up with all IG partners and the R&D players from BTH to resolve issues
- Data Processing Questionnaires and PIA templates are despatched to all partners

Oct
- IG importance raised – still need clarity on who is leading (CCG or LCFT)
- PIA returned & uploaded on to the IG Sharing Portal (Data Sharing Agreement management NW)
- Issue with the CSU – conflict in signing up to data sharing for our control data and the agreements signed with NHS Digital. Resolved with Caldicott sign off – otherwise no study!

Nov

Dec 2016
- IG sign off complete with exception of one SME organisation
## Challenges, Pressures & Lessons Learned

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<th>Challenge</th>
<th>Lesson learned</th>
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<td>1) IG processes not integrated into start up programme plan</td>
<td>Do not assume that IG is included in standard programme planning – <strong>project cannot proceed without correct IG in place</strong></td>
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<td>2) Having access to specialist knowledge</td>
<td>Identify the key people who have the specialist knowledge from the start</td>
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<td>3) Organisations not having appropriate IG in place to meet LCIA delivery requirements</td>
<td>NHSE checks needed to ensure due diligence has taken place to avoid issues and delays in delivery</td>
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<td>4) Changes in law may affect your programme</td>
<td>Be aware that changes are always taking place, use specialist contacts to understand change and implications</td>
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Key points to remember

• Understanding specifications and resources required
• Expectation management
• Innovation Vs. Legislation
• Go / No go
• Quality of documents
• GDPR – Shift and change in law & Interpretation of legalese
• Timescales
• What do patients need know?
• Understanding specifications and resources required
Thank You

For more information about the LCIA Test Bed:

@LCIATestBed   testbed@lancashirecare.nhs.uk   www.lciatestbed.org.uk

Useful links to help with information governance:

• **ICO Website:** [https://ico.org.uk/](https://ico.org.uk/) - Including resources and templates
• **ICO News:** [https://ico.org.uk/about-the-ico/news-and-events/](https://ico.org.uk/about-the-ico/news-and-events/) - Sign up to hear latest news and updates
• **NHSE:** [https://www.england.nhs.uk/ig/](https://www.england.nhs.uk/ig/) - Resources & information
• **NHSE IG Toolkit:** [https://www.igt.hscic.gov.uk/](https://www.igt.hscic.gov.uk/)
• **NHSE Apps:** [https://apps.beta.nhs.uk/](https://apps.beta.nhs.uk/)
Evaluating combinatorial innovations in healthcare

Presentation by the Test Beds National Evaluation Partner

10th July 2018
What do the Test Bed combinatorial innovations involve?

- Multiple stakeholders working in partnership
- Continual learning and evaluation
- Innovative ways of combining technology with service change
- Rapidly evolving design and implementation
Why is it important to evaluate these interventions?

- Facilitates valuable learning about what outcomes were achieved (relative to what would have happened anyway), for whom, and what could be improved upon.
- Generates robust evidence on the value for money of an investment.
- Informs future decisions about scaling up or rolling out.
Top tips for evaluation based on our work with the 7 Test Beds....tip #1

Get the right people around the table at the start to agree the objectives of the evaluation

Which aspects of the intervention will be evaluated?

What do you want to learn about?

Who should be involved?
Top tips for evaluation based on our work with the 7 Test Beds….tip #2

There is no one-size fits all method for evaluating combinatorial innovations!

Maturity of the technology / intervention
- Early development: Multiple design iterations expected
- Immature: Some changes to design expected
- Mature: Minimal changes to design expected

Stability of design

Types of evaluation
- Developmental evaluation
- Formative evaluation
- Summative evaluation

There is no one-size fits all method for evaluating combinatorial innovations!
Top tips for evaluation based on our work with the 7 Test Beds….tip #3

It is critical to understand the context

- Process evaluation
- Impact evaluation
- Economic evaluation
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TIHM for dementia

Technology Integrated Health Management

Using technology to improve the quality of life for people with dementia
TIHM for dementia: The co-designed solution

- 930,000 people in the UK have dementia; estimated > 1 million by 2025
- 1 in 4 hospital beds occupied by a person with dementia
- 22% of unplanned admissions preventable
- Dementia – a complex disease with associated multi-morbidities
- Carer burnout out key reason for care home admission
- TIHM providing **actionable clinical data to support early intervention** – leading to:
  - improve quality of life for people with dementia and carers, and;
  - reduced pressure on NHS acute services

For a better life
Reasons for choosing an RCT to evaluate TIHM

• Evaluating the effectiveness of a domiciliary IoT intervention for people with dementia and their carers

• Standard care Vs. standard care plus technology

• 204 dyads: 102 control and 102 intervention

• Primary outcome: whole system health and social costs

• Secondary outcomes: quality of life, carer stress

For a better life
The challenge of an RCT in a complex area of development

Context:

• Dementia is a complex, variable condition with many unknowns
• No blueprint – new innovation with many partners and limited time to develop
• RCT = standardisation of intervention delivery with no iterative improvements allowed

Result:

• Intervention evolved over time
• Challenge to standardisation of intervention delivery, effects could be undetectable

Solution:

• Comprehensive process evaluation leads to
  ✓ Capturing complexity
  ✓ Mapping changes over time
  ✓ Users’ experiences used to improve intervention and increase acceptability
  ✓ Understanding process by which intervention may and may not deliver, and in what context
Complex interventions require complex designs

- Research pluralism

- RCT has a place but in the context of technology and dementia co-design and reflexivity are also important

- Action research for improvement cycle (plan, act, reflect)