Understanding the operational, organisational and financial challenges in telehealth adoption through multi-disciplinary collaborative research

Dr Lizzie Coates
School of Health & Related Research
University of Sheffield

International Digital Health and Care Congress, The King’s Fund 12 July 2014
Presentation content

• Background to the research
• Outline of methods
• Key findings from across the project
• Conclusions and recommendations
Background to the research
What is telehealth?

‘Telehealth … refers to services that use various point-of-care technologies to monitor a patient’s physiological status and health conditions’

NHS England (2014)

• Multiple conceptual and operational definitions (Fatehi and Wootton 2012)
• Remote monitoring of patients at home
STEP 1
Patient provides and uploads monitoring data

STEP 2
Patient data is checked and patients who alert are triaged

STEP 3
Patients requiring follow-up are contacted by a clinician
Rationale for the MALT study

- Uptake and expansion of telehealth not developed at pace and scale anticipated
- MALT study commissioned in 2011 to identify, explore and seek to overcome key barriers and facilitators to delivering telehealth at scale:
  - Financial
  - Organisational
  - Operational
Project collaborators

Rehabilitation & Assistive Technology Group
Health Economics & Decision Science
School of Health & Related Research

Socio-Technical Centre
Centre for Innovation in Health Management

Manchester Centre for Health Psychology

Advanced Digital Institute
Outline of methods
Phases of the MALT study

**Phase 1: Map and model current services**
- Interview all stakeholders in four health services sites
- Review current practice
- Design user acceptance questionnaire
- Design financial models

**JAN 2012 – SEPT 2013**

**Phase 2: Implement, evaluate and refine**
- Implement PDSA change projects in sites
- Test financial models
- Test user acceptance questionnaire
- Develop future business models

**APR 2013 – APR 2014**

**Phase 3: Disseminate**
- Produce guides and tools to assist health and care providers, commissioners and industry
- Share findings with staff, patients, carers and wider public

**APR 2014 – NOV 2014**
## Research sites

<table>
<thead>
<tr>
<th></th>
<th>SITE A</th>
<th>SITE B</th>
<th>SITE C</th>
<th>SITE D</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Telehealth deployment</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Original introduction of telehealth</td>
<td>2007</td>
<td>2009</td>
<td>2006</td>
<td>2010</td>
</tr>
<tr>
<td>No. of telehealth units in use at end of phase 1</td>
<td>104</td>
<td>39</td>
<td>200</td>
<td>34</td>
</tr>
<tr>
<td><strong>Referral routes</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Community Matrons</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Case Managers</td>
<td>✔</td>
<td></td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Specialist Respiratory Nurses</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Specialist Heart Failure Nurses</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>GPs</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td><strong>Stakeholders</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NHS Community Healthcare Provider</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>NHS Hospital Trust</td>
<td>✔</td>
<td></td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Clinical Commissioning Group</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Equipment Manufacturer</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Local Authority</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Community Interest Group Provider</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Private Company</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
</tbody>
</table>
Phase 1 participants

<table>
<thead>
<tr>
<th>Research Site</th>
<th>SITE A</th>
<th>SITE B</th>
<th>SITE C</th>
<th>SITE D</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frontline staff</td>
<td>21</td>
<td>17</td>
<td>21</td>
<td>25</td>
<td>84</td>
</tr>
<tr>
<td>Managerial staff</td>
<td>6</td>
<td>6</td>
<td>7</td>
<td>2</td>
<td>21</td>
</tr>
<tr>
<td>Patients</td>
<td>9</td>
<td>6</td>
<td>12</td>
<td>13</td>
<td>40</td>
</tr>
<tr>
<td>Carers</td>
<td>1</td>
<td>1</td>
<td>4</td>
<td>6</td>
<td>12</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>37</strong></td>
<td><strong>30</strong></td>
<td><strong>44</strong></td>
<td><strong>46</strong></td>
<td><strong>157</strong></td>
</tr>
</tbody>
</table>
## Phase 2 participants

### 2a: Action research

<table>
<thead>
<tr>
<th>Participant Role</th>
<th>Site A</th>
<th>Site B</th>
<th>Site C</th>
<th>Site D</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Community matrons &amp; nurse specialists</td>
<td>8</td>
<td>4</td>
<td>5</td>
<td>4</td>
<td>21</td>
</tr>
<tr>
<td>Other frontline staff &amp; support staff</td>
<td>1</td>
<td>1</td>
<td>7</td>
<td>7</td>
<td>16</td>
</tr>
<tr>
<td>Clinical leads and service managers</td>
<td>5</td>
<td>1</td>
<td>3</td>
<td>5</td>
<td>14</td>
</tr>
<tr>
<td>Other managers</td>
<td>0</td>
<td>1</td>
<td>5</td>
<td>0</td>
<td>6</td>
</tr>
<tr>
<td>Patients</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>14</strong></td>
<td><strong>8</strong></td>
<td><strong>20</strong></td>
<td><strong>16</strong></td>
<td><strong>58</strong></td>
</tr>
</tbody>
</table>
Phase 2 participants

2b: Patient survey
• Six sites (4 core + 2 additional)
• Two waves (July/Aug 13 + Jan/Feb 14)
• n=266 (wave 1) n=129 (wave 2)

2c: Creative workshops – business modelling
• Two workshops in Feb 14 (n=8; n=9)

2d: Financial model testing
• Run scenarios and gather user feedback in two sites
Key findings from across the project
1. Evidence and evaluation

There are ongoing difficulties in demonstrating evidence of benefit from telehealth, and a lack of consistent and robust evaluation data.
2. Stakeholders and rationales

The stakeholder map for telehealth is complex, varies between services and is changeable over time.
3. Staff adoption

Uncertainty amongst clinical staff about the benefits of telehealth limits adoption and acceptance, especially where they act as gatekeepers to patients.
4. Patient acceptance

Uncertainty amongst potential patient and carer users about the availability and value of telehealth limits acceptance.
5. Business models

There is and will not be one single effective business model for telehealth.
6. Implementation

Existing implementation has not taken into account the complexity of the commissioning, delivery, management or acceptance of telehealth, or the links between these domains.
Conclusions and recommendations
Recommendations

1. Improved evaluation dataset needed
2. Greater recognition of complexity and diversity of stakeholders is important
3. Raise awareness of telehealth and potential benefits to clinical staff
4. Improve awareness amongst potential patients and carers to stimulate demand
5. Scenario planning can help develop business models which take into account complexity
Recommendations

6. Greater recognition of the complexity and interrelatedness of operational, organisational and financial barriers is critical first step to expanding services.
For more information

Visit our website: www.malt.group.shef.ac.uk

Follow us on twitter: @MALT_YH

Contact me directly

Dr Lizzie Coates e.coates@sheffield.ac.uk