Enabling cost-effective management of long-term conditions: mainstreaming telecare and telehealth

“Future developments – demonstrating cost-effectiveness of services”

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Independent Telecare & Assisted Living Consultant

The King’s Fund, London
Tuesday, 19th. October, 2010
Planning a Telecare/health Service

- **Strategic vision** with aims tied to local requirements & priorities
- **Service specification** defining the service offer (and quality)
- Identify service stakeholders to define organisation & delivery
- Define robust **procedures** to create an integrated service
- Offer a broad range of **telecare applications**…
- Using the most appropriate telecare/health & related assistive technologies…

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Technologies to Support Independence

- **Fixed A.T.** (Home adaptations)
- **Portable A.T.** (Tools 4 Living)
- **Environmental Controls** (Smart systems)
- **Connected A.T.** (Telecare/health)

**Fixed A.T.**
- Tailored, long lead time
- (and often expensive)
- (Home adaptations)

**Portable A.T.**
- Mass produced, quick to install (and mostly low cost)
- (Tools 4 Living)

**Environmental Controls**
- Electronic & ‘intelligent’
- (Smart systems)

**Connected A.T.**
- (Telecare/health)

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Fixed A.T. – Home Adaptations

The focus is on the property rather than on the person

Many installations are funded by LAs through Disabled Facility Grants

UK makes or sells nearly two-thirds of the world’s stair-lifts
Average cost to buy and install - £5000
Average cost to remove - £2000

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The Future Solutions to a Lack of Mobility

Low-tech, Fixed, Limited Availability

Hi-tech, Mobile & Always Available

Old versus New
Direct payment or Individual budget!

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Portable A.T. – Tools 4 Living

- Some devices needed to support telecare/health services
- Electronic devices provide reminders and advice
- Some carers don’t need sensors linked to a care phone
- We need to support more mobile lifestyles

These are examples of devices that people might buy for themselves or for a family member i.e. ideal for a retail model for service provision

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Environmental Controls - Smart systems

- Gestures can replace buttons for remote control
- Visitors can be dealt with and admitted remotely
- Domestic and personal care devices will appear
- User interfaces will be simple and intuitive
- Remote control systems will be very low cost

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Connected A.T. (Telecare/health)

- Integration of AT in Total Telecare Services
- From Reactive to Predictive Applications
- Medical Data for the Expert Patient
- Alternative Response and Support
- The Digital Revolution
- A Standard Home Platform
- Mobile Solutions
From Reactive to Predictive Applications

- Activity levels
- Sleep patterns
- Food preparation
- Washing
- Cognition/Memory
- Social interaction

High Availability Data-Rich Environment for monitoring Well-Being

Alarm-based devices -> Data monitoring devices -> Behaviour Analysis & Trends

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Collecting and Displaying Vital Signs Data for the Expert Patient
Alternative Supporters
The Digital Revolution

Platform for Novel Healthcare Applications

Cloud Computing
everything and the kitchen sink

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The Internet and the World-Wide Web
The Digital Revolution

Device Connectivity & Interoperability
The Digital Revolution

Digital Convergence
Future Telecare/health Home Platform

User interface

Env. Control

Vital Signs Monitoring

PSTN/GSM (NGN)

SAP/NHS Records

Community Response & Support Services

Telecare Centre

Activity Sensors & Actuators

Smart Utility Metering

1st Generation Alarms

Service User’s “Connected” Home

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Mobile Solutions

• Nearly everyone has a mobile phone today
• Pay-as-you go makes them a viable alternative to a landline for many people
• Additional features make some of them “smart”

Smart phones have features relevant to healthcare:
- Microphone
- Camera(s)
- Accelerometers
- GPS & GSM location
- Bluetooth (LE) & WiFi
- Increased Processing
- Phone & SMS/MMS
- Familiar Interface
- Always carried
- Open platform for innovation
- M-care “apps” are abundant

Mobile Phone Ownership by Age
Cost-effectiveness of Telecare/health Services

“A Telecare/health service will be cost-effective if

– all processes and elements are good;
– the most appropriate technologies are prescribed;
– the outcomes are as hoped for;
– delivered to enough of the right people at the right time; and
– offered at an economical price”

K.D. March 2005
Telecare Evaluation Output

How does your service rate?
## Telecare Services Outcomes

<table>
<thead>
<tr>
<th>Service Users</th>
<th>Carers</th>
<th>Social Services</th>
<th>Housing Providers</th>
<th>Health Economy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increased choice in managing risk</td>
<td>Improved peace of mind</td>
<td>Reduced/delay admissions to care homes</td>
<td>Reduced voids in sheltered housing</td>
<td>Reduced hospital admissions and readmissions</td>
</tr>
<tr>
<td>More responsive approach</td>
<td>Reduced Stress</td>
<td>Improved assessments of needs &amp; risks</td>
<td>Increased demand for special housing</td>
<td>Improved medication compliance</td>
</tr>
<tr>
<td>Improved Quality of Life</td>
<td>Improved Quality of Life</td>
<td>Fewer delayed transfers of care</td>
<td>Fewer incidents of accidental damage</td>
<td>Fewer ambulance call outs and A&amp;E presentations</td>
</tr>
<tr>
<td>Increased independence</td>
<td>Increased independence</td>
<td>Increased capacity of care system</td>
<td>New roles for wardens and support staff</td>
<td>More patients able to perform self care at home</td>
</tr>
<tr>
<td>Reduction in overall care costs</td>
<td>Opportunities for respite</td>
<td>Reduce demand for homecare services</td>
<td>Improved security of properties</td>
<td>Shorter hospital stays and rapid discharge</td>
</tr>
</tbody>
</table>
## Social Services Gains in a Sample of 50 Cases (Critical or Substantial Risk)

<table>
<thead>
<tr>
<th>Outcome</th>
<th>LA 1</th>
<th>LA 2</th>
<th>LA 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduce/delay admissions to care homes</td>
<td>6</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Improved assessments of needs &amp; risks</td>
<td>6</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td>Fewer delayed transfers of care</td>
<td>3</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Increased capacity of care system</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Reduce demand for homecare services</td>
<td>9</td>
<td>3</td>
<td>1</td>
</tr>
</tbody>
</table>

- **No. of green lights**
  - LA 1: 16
  - LA 2: 6
  - LA 3: 3

- **No. of different devices prescribed**
  - LA 1: 23
  - LA 2: 12
  - LA 3: 11

- **Weekly cost per client of providing a service**
  - £7.80
  - £6.90
  - £8.50

- **Weekly service charge**
  - £7.50
  - £4.95
  - £2.50

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# PCT Gains in Sample 50 Cases (Critical or Substantial Risk)

<table>
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<tr>
<th>Outcome</th>
<th>LA 1</th>
<th>LA 2</th>
<th>LA 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduced hospital admissions/readmissions</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Improved medication compliance</td>
<td>14</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>Fewer ambulance call outs and A&amp;E presentations</td>
<td>4</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>More patients able to perform self care at home</td>
<td>Yes</td>
<td>Yes</td>
<td>Maybe</td>
</tr>
<tr>
<td>Shorter hospital stays and rapid discharge</td>
<td>3</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>
Conclusions

• Benefits of telecare/health currently vary significantly between different services
• The outcomes depend on the target groups, and how well they are identified and recruited
• Better prescriptions for a wider range of devices and applications, lead to improved benefits
• New devices will offer “more for less”
• Integration of telecare/health with other types of AT will help with service integration
• Quality of overall service provision is likely to be the biggest indicator of level of benefits
• Cost management will become vital.
THANK YOU FOR YOUR ATTENTION

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