Telemedicine in care homes in Airedale, Wharfedale and Craven

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Our teleconsultation journey

- 9\textsuperscript{th} year
- offender health
- care in patient’s homes
- nursing and residential care
- end of life

✓ 24/7 clinical hub
✓ improving patient experience
✓ changing patient flow
✓ reducing costs
Aim of the service

- Provide, safe, effective high standards of care
- To support residents to stay at home
- Support residents, nurses and carers in the planning, and delivery of care
- Escalate to community teams out of hours
Examples of cases

- Falls
- Laceration
- Painful Shoulder
- “Chest Pain”
- Evolving Stroke
- Drowsy / “off legs”
- Medication error
Care Homes – early outcomes

- A&E Attendances 1 Year Prior to Deployment of Telemedicine: -53%
- A&E Attendances 1 Year Post Deployment of Telemedicine
- Acute Admissions 1 Year Prior to Deployment of Telemedicine: -35%
- Acute Admissions 1 Year Post Deployment of Telemedicine
- Acute Beds Days 1 Year Prior to Deployment of Telemedicine: -58%
- Acute Beds Days 1 Year Post to Deployment of Telemedicine
AWC care homes

- Telemedicine technology installed in 27 care homes with largest use of hospital resources in AWC:
  - 968 beds
  - Range: 14 to 129 beds (average 36 per care home)

- Another 21 care homes did not have telemedicine installed:
  - 557 beds
  - Range: 4 to 68 beds (average 28 per care home)
Evaluation methodology

- Uncontrolled ‘before and after’ evaluation
- Although some apparent bias, care homes without TM formed a natural control group
- Hospital activity data used to extract:
  - Non-elective admissions
  - A&E attendances
Evaluation methodology


- Care homes with TM used similar observation periods before and after installation of TM

- Care homes without TM used a median date of November 2012 i.e. ‘before’ period was Feb 11 – Nov 12 and ‘after’ period was Nov 12 – July 14
Non-elective admissions

- Residents with one or more admissions:
  - 942 in homes with TM
  - 502 in homes without TM

- Age and gender profiles of admissions similar for both groups of homes (80% were people aged 80 and over and 66% were women)
Emergency Admission Rate

<table>
<thead>
<tr>
<th>Emergency (episodes) Per care home bed/year</th>
<th>Before TM</th>
<th>After TM</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Without telemedicine</td>
<td>2.26</td>
<td>1.53</td>
<td>-0.73</td>
</tr>
<tr>
<td>With telemedicine</td>
<td>2.93</td>
<td>1.86</td>
<td>-1.07</td>
</tr>
</tbody>
</table>
Cost of Non Elective Admissions

<table>
<thead>
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<th>Cost Per care home bed/year</th>
<th>Before TM</th>
<th>After TM</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Without telemedicine</td>
<td>6215</td>
<td>4317</td>
<td>-1898</td>
</tr>
<tr>
<td>With telemedicine</td>
<td>8270</td>
<td>5026</td>
<td>-3244</td>
</tr>
</tbody>
</table>

Without TM: £1898 (31%)
With TM: £3244 (39%)
A & E Department Attendances

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<th>After TM</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Without telemedicine</td>
<td>1.13</td>
<td>0.78</td>
<td>-0.35</td>
</tr>
<tr>
<td>With telemedicine</td>
<td>1.42</td>
<td>0.79</td>
<td>-0.64</td>
</tr>
</tbody>
</table>
Cost of A & E Attendances

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</thead>
<tbody>
<tr>
<td>Without telemedicine</td>
<td>£130</td>
<td>£89</td>
<td>-£41</td>
</tr>
<tr>
<td>With telemedicine</td>
<td>£163</td>
<td>£90</td>
<td>-£73</td>
</tr>
</tbody>
</table>

£67 (31%)  
£121 (45%)
Length of stay

- Care homes with TM showed an average reduction in LOS:
  - 6.68 days ‘before’
  - 6.24 days ‘after’

- Care homes without TM showed a slight increase in average LOS:
  - 6.27 days ‘before’
  - 6.35 days ‘after’
Return on investment

- Commissioning cost of TM: £175,000
- Attributable reduction in:
  - Acute admissions 8.7% (39.2% vs 30.5%) - £1.158M
  - A&E visits 13.7% (44.8% vs 31.1%) - £0.036M

= £1,194,000 ÷ £175,000

ROI is £6.82 for every £1 spent
Telemedicine Outcomes

- Advice only
- Medication advice
- Referral to DN/HV
- Referral to ACCT
- Referral to OOH GP
- Referral to in hours GP
- Admission
- 999 Ambulance
Scale?

Key
- Care Homes
- Hospices
- Hospitals
- Medical Centres
- Own Homes
- Prisons
Analysis limitations

- Potential bias in control group
- Not able to control for confounding factors. Other interventions may also have had an impact, e.g. assess to admit scheme
- Data limitations, e.g. based on admissions from care homes rather than examining care for individuals. No access to primary, community or social care data
Recommendations

- More detailed analysis of the way in which TM interventions affect the patient pathway
- More controlled prospective study, including primary, community and social care data, matching of care homes and statistical analysis
- Review and improve data recording arrangements for care homes
Conclusions

- Significant reduction in non-elective admissions & emergency attendances from care homes with TM
- However… background reduction also observed in care homes without TM – other interventions
- Attributable benefit of 9% (NEA), 14% (A&E)
- A conservative estimate is that ROI is around £6.82 for every £1 spent
- Other benefits not quantified: improved patient outcomes/experience; feeding acute care capacity; environmental sustainability, care home staffing
Thank you