APPENDIX A

Business Case for ITT Bids

Service and Portfolio: Adult Care Services – Assistive Technology

Project Sponsor: Helen Maneuf
Budget Holder & Budget Manager: David Coolbear

Project Name: Assistive Technology – Next Steps Locality Rollout

Brief Project Outline:

SUMMARY

This bid is requesting circa £1.56m funding, front-loaded over a three-year period to rollout out an ambitious assistive technology offer to 200 people who need care to:

- Test the use of digitally enabled assistive technology as part of an individual's care plan at a larger scale;
- Enable Hertfordshire County Council to develop machine learning and analytics platforms;
- Continue to work professionals to embed assistive technologies into care planning and delivery;
- Enable a full Public Health evaluation of emerging assistive technology solutions build on the initial Proof of Concept pilot work;
- To better inform the use of AT as an integral part of Hertfordshire County Council’s care offer;
- To better inform practices relating to self-help activities (including the use of Apps) and to better inform self-funders and the preventative agenda.

Funding is required to (this is not an exhaustive list):

- Purchase the sensors, internet/mobile connectivity;
- Employ a small team to develop a system dashboard that social care professionals will use to assess the health and wellbeing of service users;
- Provide the professional and technical IT capability to deliver a successful roll out;
- Provide the support to practitioners, service users, families and other stakeholders;
- Engage Public Health to evaluate the intervention.

To test benefits realisation including:

- Deliver future financial savings by using assistive technology (in a safe and managed manner) instead of more expensive homecare packages;
- AT for use as a preventative tool (keep people on small care package/pre-care);
- Redistribution of limited homecare resources; delaying the need for 24-hour care and preventing the escalation of care needs.
- Informal carer support/stress reduction/prevention of carer breakdown.
- Getting the size/length of mainstream and Specialist Care at Home (SCAH) packages of care right for each service user.
Project Deliverables and Outcomes:
The Assistive Technology (AT) Proof of Concept has successfully shown that AT is an acceptable and feasible complementary solution.
A number of factors cemented this outcome;
• HCC developed leading-edge analytics. The introduction of new and novel techniques to visualise complex data and gain insights quickly.
• Deployment of an appropriate quantity and diversity of sensors to match the risks identified.
• Analytics requirements were driven from Hertfordshire County Council’s Social Care and Health professional engagement; allowing emerging risks and issues for the Service Users (SU) to be defined.

The potential benefits for Hertfordshire County Council of including AT within Homecare Packages include;
• AT for use as a preventative tool (keep people on small care package/pre-care).
• Redistribution of limited homecare resources; delaying the need for 24-hour care and preventing the escalation of care needs.
• Informal carer support/stress reduction/prevention of carer breakdown.
• Getting the size/length of mainstream and Specialist Care at Home (SCAH) packages of care right for each service user.

There are also potential benefits for health organisations especially where people have a health and social care joint need. Thorough planning and scoping activities involving all stakeholders will enable phase two to effectively demonstrate impact.

2020 phased roll-out Study Design:
Figure 1 represents the proposed study design for the roll-out to be conducted by Public Health. The study will involve the cohort of 200 and a control group with no AT provision other than the standard telecare offer.

At the point when 50% of the target number of SU have been recruited (and a pre-defined evaluable period has passed e.g. 6 months), there is the option to blind the data and send it to an external institution for analysis. This is a bolt on with the benefit of external validation (blinding it and analysing it internally is another option with a lower cost).

At the 50% roll-out point a report showing the results of a real-life comparison of those with AT and those without would inform a decision about whether to roll out countywide at that point (thus entering the left-hand bubble). Further decisions about how to sustain this as a BAU service for 3500-7000 SU would also be made. If an analysis from a higher percentage of the 200 SU is requested, then we would cycle around again and provide further information on which to base a decision.

The report will include a comparison of quantitative measures defined at the start (see figure 2) between the active and control groups, as well as qualitative data feeding into continual improvement of the study and future BAU rollout (green inner circle). Outcome measures will be defined in conjunction with health colleagues, to ensure we are collecting appropriate data on SU’s with a joint health and social care need.
Figure 1: Proposed study design for the incremental roll-out of Assistive Technology.

Figure 2: Evaluation Plan.

- **Continual Improvement**
  - Am I providing the same (or better) level of care?
  - Qualitative data, overlaps with monitoring
  - How do SU/Staff/Carers interact with the intervention?
  - How satisfied are the SU/Staff/Carers with the intervention?
  - What is the mechanism for change?
  - Context of the intervention e.g. external factors
  - Quality of staff training?

- **Outcome Measures**
  - How much money can I reinvest?
  - Quantitative data
    - Cost of care packages
    - Moves to residential care
    - Hospital Admission Rates
    - GP visits
    - A&E visits
    - Carer breaks/respite stays/Carer Strain Index
    - Time taken for hospital discharge/numbers through each D2A pathway
    - Number returning to hospital within 90 days
    - SU self-reported feelings of independence
    - SU and carer wellbeing
Project Costs and Savings

*Cost of the scheme (revenue and capital) and, where relevant, projected savings:*

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<th>20/21</th>
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<td>£’000</td>
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<tr>
<td>Detail</td>
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<tr>
<td>TOTAL REVENUE</td>
<td>516,275</td>
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<td>Detail</td>
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<tr>
<td>TOTAL CAPITAL</td>
<td>311,864</td>
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<td>155,329</td>
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<td>Revenue Savings</td>
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<td>Detail</td>
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<tr>
<td>TOTAL SAVINGS</td>
<td>See below</td>
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*Note:* It is highly unlikely we will now be in a position (due to COVID 19) to fill this staffing compliment so this figure will be significantly lower. We will therefore need to revisit the activities required for the rollout, in the short term, to reprioritise according to numbers of staff recruited.

Financial considerations.

The proof of concept pilot has indicated that by the targeted use of AT there are efficiencies, including financial, that can be made. Part of the proposed evaluation of the locality rollout is to test and identify efficiencies at a larger scale and to enable practitioners to consider safely reducing more expensive forms of care in place of AT. One example from the PoC pilot is Margaret.

With Assistive technology, we have the choice to install the right sensors and appropriate analytics to highlight when known and unknown risks materialise. Based on professional judgement from front line staff we predicted what would likely have happened without the use of Assistive Technology. An all-too-familiar picture of increasing dependency upon public services as health declines.

In Margaret’s journey, following analysis of AT data and in discussions with family members we were able to see a pattern of increased walking with purpose which was being followed by a panic attack resulting in Margaret calling her family in distress. This timeline shows a general reduction in activity through analysis of the AT data. Margaret has just been assessed for a cognitive impairment and had a new diagnosis of mixed dementia with associated anxiety. The AT data we analysed featured a range of sensors and highlighted an increase in visits to the toilet and walking with purpose. Margaret was subsequently diagnosed with a UTI and a chest infection and
was prescribed antibiotics. The visual below shows Margaret’s journey with AT (on the left) and what her journey could have been without AT (on the right). Whilst we have had to make a number of assumptions here, if only 40% of our assumptions are correct AT could have saved HCC circa £12k pa and Health circa £3k pa by identifying her UTI and chest infection and high levels of anxiety at an early enough stage to stop the need for a crisis intervention.

Benefits Plan - Measurement of Outcomes

Outcome Measure Data Collection Mechanisms

Qualitative data: Individual interviews, focus groups and/or targeted workshops with all stakeholders. Careline professionals' questionnaire (staff use of AT/referral process), Quality Monitoring Officer questionnaire, ACS questionnaire.

Data collection and analysis to be conducted by evaluation officer and senior evaluation officer.

Measurable, relevant and time-based objectives:

- The median cost of care package above baseline (BOBJ report) will be lower in the active compared to control group one year after the start of the intervention (evaluable period for 50% of the study cohort*).

- The number of SU moves to residential care (BOBJ report) will be significantly lower in the active vs control group one year after the start of the intervention (evaluable period for 50% of the study cohort*).

- The number of SU returning to hospital within 90 days (BOBJ report) will be significantly lower in the active vs control group one year after the start of the intervention (evaluable period for 50% of the study cohort*).

- The time taken for hospital discharge will be significantly less in the active vs control group one year after the start of the intervention (evaluable period for 50% of the study cohort*).
- The number of funded **Carer breaks/respite stays** (BOBJ report) will be significantly lower in the active vs control group one year after the start of the intervention (evaluable period for 50% of the study cohort*).
- The average self-reported score for **SU feelings of safety** (Careline administered questionnaire) will be significantly lower in the active vs control group one year after the start of the intervention (evaluable period for 50% of the study cohort*). Also measured through individual interviews, ACS administered questionnaire, QMO administered questionnaire.
- The average observed score for **SU wellbeing** (measured by SWEBWEMS on Careline administered questionnaire) will be significantly lower in the active vs control group one year after the start of the intervention (evaluable period for 50% of the study cohort*). Also measured through individual interviews, ACS administered questionnaire and proxy measures e.g. size of care package, moves to residential care.
- The average self-reported score for **SU feelings of independence** (Careline administered questionnaire) will be significantly lower in the active vs control group one year after the start of the intervention (evaluable period for 50% of the study cohort*). Also measured through individual interviews and proxy measures e.g. size of care package, moves to residential care.
- The average observed score on the **Carer Strain Index** will be significantly lower in the active vs control group one year after the start of the intervention (evaluable period for 50% of the study cohort*). Also measured through individual interviews and the ACS administered questionnaire.
- Number of **SU remaining at home to the end of their lives** (compared to those admitted to hospital) will be significantly higher in the active vs control group one year after the start of the intervention (evaluable period for 50% of the study cohort*).
- Objectives around **hospital admissions, GP visits and A&E visits** to be agreed with health colleagues (including methods of data collection).

*As a consequence of the study design, we may find favourable results within a shorter period (achieve desired outcomes).

### Project Review dates

Work is presently underway to map out the key activities required and the relevant timelines and it is presently anticipated that rollout will commence in August 2020. However, contingencies are being considered due to the COVID 19 situation, such as deploying the equipment in people’s homes as an aid to managing the present virus situation.
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<tr>
<th><strong>Significant Assumptions and Risks</strong></th>
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<tr>
<th>Assumptions/Opportunities</th>
<th>Challenges</th>
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<tr>
<td>HCC are working in partnership to provide the best and personalised care to vulnerable people living in the county</td>
<td>AT is intended to compliment and improve care packages not impact on service users or replace people</td>
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<td>Potential to promote the good work being done to support vulnerable people in the county using case studies of success stories</td>
<td>News of less homecare or other service picked up by local and national press causing reputational risk to HCC and bring into disrepute the service providers contracted by the council to support vulnerable residents</td>
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<tr>
<td>Review of contracted AT providers and strengthen contracts in the county and chance to be at the forefront of implementing the newest technologies to support health and social care now and in the future.</td>
<td>Risk that a resident is injured due to change of service provision and complains and/or brings a case against HCC</td>
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<td>Hertfordshire County Council are providing best value for money to council taxpayers, service users and to self-funding residents</td>
<td>Hertfordshire County Council receive high volume of requests for funded AT solutions and cannot cope with demand or don’t agree to fund certain criteria and so receive complaints</td>
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<thead>
<tr>
<th>Risk</th>
<th>Mitigations including:</th>
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<tr>
<td>There is a risk that the use of technology may cause harm to service users if not properly deployed and monitored</td>
<td>We have learned relevant lessons from the PoC pilot that will mitigate against this. Staff training both verbal and written material. Staff peer support. AT Champions disseminating good ideas and case studies. Regular attendance at team meetings, newsletters, service user sample selecting. Regular monitoring of the AT outputs to identify errors/alerts. Lessons learned events.</td>
</tr>
<tr>
<td>A risk that social workers and care managers do not engage as the system will depend on them making referrals making appropriate use of new technologies instead of more expensive commissioned care where this is for the benefit of the SU.</td>
<td>Pro-active engagement. AT Champions. Dissemination of exempla case studies. Service user/family feedback. Dissemination of service user outcome measures. ACSMB communications.</td>
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<tr>
<td>A risk that care providers do not engage or training for Health and Care Practitioners is not robust enough.</td>
<td>Pro-active engagement. Dissemination of exempla case studies. Service user/family feedback.</td>
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<tr>
<td>Issue</td>
<td>Response</td>
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<td>Dissemination of service user outcome measures. Lead care providers to lead on engagement with spot care providers. Hertfordshire Care Providers Association to disseminate clear messages.</td>
<td>Failure to deliver SU focussed outcomes if targeting is not right. Clear communications to professionals of what benefits AT can achieve and any limitations. AT Team to triage initial referrals. Sample 3-month review of service user outcomes.</td>
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<td>SUs and their carers are not fully engaged or do not understand/accept the benefits of using AT. Clear communications of individual benefits anticipated with AT. Clear and concise messages. Redacted dissemination of exempla case studies.</td>
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<td>SUs and their carers are not fully engaged or do not understand/accept the benefits of using AT. Clear communications of individual benefits anticipated with AT. Clear and concise messages. Redacted dissemination of exempla case studies.</td>
<td>The true impact of the locality rollout is not fully evaluated and understood to inform future rollout. Evaluation lessons learnt from PoC pilot. Continuous evaluation review. Involvement of professionals in designing evaluation framework. Targeted evaluation criteria using existing baseline datasets.</td>
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<tr>
<td>The true impact of the locality rollout is not fully evaluated and understood to inform future rollout. Evaluation lessons learnt from PoC pilot. Continuous evaluation review. Involvement of professionals in designing evaluation framework. Targeted evaluation criteria using existing baseline datasets.</td>
<td>COVID 19 delays the mobilisation of the rollout. Contingencies are being developed including the additional use of AT as part of emergency measures to cope with the present situation.</td>
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