Patient Centred Angina Management

Project Manager...Phil Chapman
Project Sponsor...Dr Phil Moore
Directorate...Planning
Finance Officer...Jenny Sinnott

Description of the project

To develop a community-based, patient-centred care programme to enable complex stable angina patients to avoid unscheduled healthcare interventions, including admissions, and to reduce scheduled angioplasty.

This is a 1 year pilot project which will be evaluated in-year to establish future potential and guide any procurement requirements.

The approach has a number of novel features, and has been implemented successfully and effectively in 2 other health communities in England. It combines elements of a number of more conventional approaches (e.g. education, CBT, comprehensive rehabilitation, optimal medical care, shared decision making) to deliver an holistic solution. Patient satisfaction and health care outcomes from other implementations have been very good.

Key elements of the approach include:

- On-going training and support for local clinicians in provision of the patient-centred service design approach, who are involved from day 1 in delivery of the programme and become increasingly self-sufficient through the first year;
- Clarity around patient selection – patients to be identified via at least (i) computer searches, (ii) discussion with GPs and practice staff, (iii) discussion with KHT cardiologists and rehab team;
- Provision of defined programmes of 1:1 and group sessions for patients throughout the year;
- Increasing patients' knowledge and understanding of their condition and confidence to self-manage and make decisions about their own treatment;
- Patients become champions for the approach with their own families, friends and communities;
- Local clinicians and the CCG become increasingly self-sufficient is delivery of the approach;
- The approach can be replicated for other long-term conditions.

PMO ID: 2013/14 – QIPP02
The service will be provided by Virtual Angina Ltd, led by Professor Mike Chester, who designed and developed the approach and has led its implementation elsewhere. The model won the NHS Nye Bevan award for Innovation and Modernisation in 2000, and in 2008 the DH said that the model is “the blueprint for long term conditions generally.” The service is uncompromisingly service excellence oriented and the approach resulted in the 2009 UK Customer Experience Business award.

**Strategic Fit**

The following is the list of Kingston CCG’s corporate priorities to 2015, together with a summary of the contribution which this project is expected to make to each:

1. **Sustainable health and wellbeing economy** – modelling projects a year 1 (full year) net saving of approx. £247,000 with a return on investment of 1.3. In the 2nd full year this is projected to increase to approx. £380,000 with RoI of 2.9. The approach is also sustainable because of its emphasis on skills transfer to local clinicians and managers. Financial sustainability may be further enhanced by extending the approach to other long-term conditions.

2. **High quality, outcome-based services** – the emphasis throughout the project is on the outcome for each individual patient. Each will respond to the programme in different ways but the expectation is that all will be better able to manage their condition going forward and more confident to make their own decisions about future treatments. There is an ethos of continuous improvement throughout the programme; patient satisfaction is continually tested with the objective that all patients are “delighted” with it. The Friends and Family test will be routinely applied at the end of each patient’s programme. The satisfaction of other stakeholders is also tested throughout, including carers, local clinical providers, patients’ own GPs, other impacted providers e.g. secondary care cardiologists, community and secondary sector rehabilitation services.

3. **Reduced health inequalities** – it is expected that a significant proportion of targeted patients will come from more disadvantaged groups across the area. After initial implementation and proving of processes there is the potential to base provision in the geographically more disadvantaged areas to assist access.

4. **Pathway approach** – prevention: primary, secondary, tertiary and quaternary - this is a prevention-oriented approach. Part of the input which patients receive is specifically around understanding of their condition to improve self-management by avoiding / minimising the causes of exacerbation. There is also input around management of symptoms which will help to reduce unnecessary / unplanned use of health services. With improved understanding and confidence the evidence is that patients make different decisions about treatments, in particular reducing elective angioplasty for symptom control – reducing use of planned secondary care interventions.

5. **Shared decision making including self-care** - this is at the heart of the approach

**Needs Assessment**

1. Palliative PCT - comparatively high rates of revascularisation in Kingston

The NHS Atlas of Variation 2011 (see page 25 of this paper) shows that there are comparatively high rates of revascularisation in Kingston and neighbouring CCGs and recommends: “Commissioners: should review: characteristics of patients receiving elective angioplasty to identify potential eligibility for OMT; protocols on appropriate use of OMT and elective angioplasty.”
2. Avoidable admissions – analyses of secondary care data

(i) Analysis in early March of SUS data to identify patients who had more than 1 emergency admission for angina and / or chest pain in a 6 month period (Sept12 – Feb 13):

<table>
<thead>
<tr>
<th>Number of readmissions</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>9</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of patients</td>
<td>169</td>
<td>33</td>
<td>7</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>217</td>
</tr>
<tr>
<td>Total admissions after 1st</td>
<td>338</td>
<td>99</td>
<td>28</td>
<td>15</td>
<td>12</td>
<td>14</td>
<td>9</td>
<td>515</td>
</tr>
</tbody>
</table>

(ii) Analysis of SUS data re PCI activity for Kingston CCG patients – elective, non-elective – emergency, non-elective – other, all providers, for 12 month periods March - February

<table>
<thead>
<tr>
<th>Admission type</th>
<th>Mar11-Feb12</th>
<th>Mar12-Feb13</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>activity</td>
<td>cost</td>
</tr>
<tr>
<td>Elective inpatient</td>
<td>79</td>
<td>351307</td>
</tr>
<tr>
<td>Non-elective – emergency</td>
<td>48</td>
<td>278856</td>
</tr>
<tr>
<td>Non-elective – other</td>
<td>44</td>
<td>241373</td>
</tr>
<tr>
<td>Total</td>
<td>171</td>
<td>871537</td>
</tr>
</tbody>
</table>

Who are the stakeholders and how have you secured buy-in?

1. Patients
   - the model has been designed bottom-up with angina patients and carers (more than 2000 patients have been involved iteratively in the design and development of the approach since 1998) using an innovative total user engagement approach;
   - the model was first presented to local Kingston patients at a joint meeting with Merton and Sutton patients and clinicians in 2007, as part of Merton & Sutton PCT’s Local Development Plan work;
   - the project was outlined to a breakout group at the Patient Forum meeting on 22/1/13. Participants agreed that the principles are appropriate and endorsed the approach as far as they were able in the limited time available;
   - the project will be the subject of a further discussion at the Patient Forum meeting on 23/4/13;
   - the project was subject of a brief, informal discussion with the (patient) chair of the KH Cardiology Patient Group, who was supportive, and welcomes a clinical presentation to that Group in due course (currently proposed for 2/5/13).

2. Commissioning Group - the project
   - is part of the wider Community Cardiology Programme and has been discussed and endorsed at meetings of that programme group;
   - has been considered on a number of occasions by the CCG’s Governing Body, both from the point of view of strategic fit and conflict of interest issues, and has been supported;
   - has been included in the 2013/14 QIPP programme from its earliest stages of development because of the above support, compelling economics and strategic fit;

3. Patients’ GPs - the project
   - has been outlined to the Council of Members and received support;
   - once the business case is approved the intention is to provide more detail including a further presentation to the Council of Members (scheduled for 21/5/13).
4. Local clinician providers
- A number of local clinicians have been approached to become involved in providing the service and a GP and practice nurse have participated in an introductory session;
- Others have been keen to participate but other commitments are currently preventing;
- Having had an initial discussion there is a good possibility that a senior KHT cardiac rehab nurse will also be involved in the provision.

5. Kingston Hospital consultant cardiologists
- Mike Chester and PC met with the 3 KHT consultant cardiologists to discuss the project on 15/2/13. The cardiologists understood immediately the patient group for whom the approach will be most suitable and were happy to discuss how the project can dovetail with their services. They support the project.

6. Secondary and community cardiac rehabilitation services
- Mike Chester and PC met with Your Healthcare’s lead cardiac rehab nurse on 15/2/13. Whilst other commitments prevent her from becoming involved in provision of the service she remains keen to be involved in any project group;
- She is keen to ensure that there is a suitable interface between the project and community rehab services, which will be covered in initial planning work once business case approval has been received;
- MC has meet with a senior KHT cardiac rehab nurse who immediately appreciated how the project could have beneficial impact, and who is exploring with managers whether / how he can become involved as one of the local providing clinicians.

7. Neighbouring CCGs
- The project may be relevant for neighbouring CCGs whose patients also attend KHT for cardiology services – particularly Merton, Richmond and East Elmbridge;
- Virtual Angina Ltd have been in discussion with Merton CCG (Sutton & Merton PCT) for some time. There is support in principle for a project there during 2013/14, and they are supportive of the approach;
- The project has been outlined by Kingston CCG to colleagues in Richmond CCG by email. Again there is interest, though a meeting which was arranged had to be postponed. This can be rearranged once support is received for the business case;
- The project has been outlined by Kingston CCG to colleagues in East Elmbridge CCG by email, but no response has yet been received. This too will be pursued once support for the business case is received;
- Surrey Downs Mid Surrey CCG has invited Virtual Angina to present the project at the locality educational event on 24 April 2013.

Options for delivering this project
- Although different providers may be in a position to provide the separate elements of the service (which are conventionally provided separately e.g. patient education, CBT, comprehensive rehabilitation, optimal medical care, shared decision making), it is felt that there will be significant benefit in securing them as an integrated whole, providing a single holistic solution for patients and other stakeholders.
- Other than Virtual Angina Ltd., it has not been possible to find any other provider who has the experience and track record in delivering this integrated solution. Searches of the internet have not yielded any suitable alternatives.
- Virtual Angina Ltd. have successfully implemented the approach in 2 other health economies in England;
As indicated previously the model developed by Virtual Angina Ltd won the NHS Nye Bevan award for Innovation and Modernisation in 2000, and in 2008 the DH said that the model is a blueprint for long term conditions generally. Professor Mike Chester is adjunct Professor of Rehabilitation and Preventative health Education and has won national awards for leading excellent patient and care experience.

Partly because there is no comparable alternative to Virtual Angina’s offering, Kingston’s Director of Public Health has been asked to review the evidence for the approach and the expected benefits. His Public Health Consultant’s report is attached, and endorses the approach.

### Financial Consequences of recommended option

#### 1. Costs

<table>
<thead>
<tr>
<th></th>
<th>Local GP providers</th>
<th>Local Nurse providers</th>
<th>Virtual Angina Limited</th>
<th>Admin</th>
<th>Other e.g. refreshments etc</th>
<th>flexible budget e.g. transport</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.6 mths initial training &amp; running</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Qtr</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>sessions pw</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>£/session</td>
<td>300</td>
<td>150</td>
<td>750</td>
<td>50</td>
<td>100</td>
<td></td>
<td>240</td>
</tr>
<tr>
<td>£/pw</td>
<td>1200</td>
<td>600</td>
<td>2250</td>
<td>100</td>
<td>200</td>
<td></td>
<td>200</td>
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<tr>
<td>weeks in 1st 6 mths</td>
<td>24</td>
<td>24</td>
<td>23</td>
<td>24</td>
<td>24</td>
<td></td>
<td>240</td>
</tr>
<tr>
<td>£ in 1st 6 mths</td>
<td>28800</td>
<td>14400</td>
<td>51750</td>
<td>2400</td>
<td>4800</td>
<td>2500</td>
<td>104650</td>
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<tr>
<td>7.12 mths running</td>
<td></td>
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<tr>
<td>Qtr</td>
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<td>2</td>
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<td>2</td>
<td>1</td>
<td>6</td>
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<tr>
<td>sessions pw</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>£/session</td>
<td>300</td>
<td>150</td>
<td>750</td>
<td>50</td>
<td>100</td>
<td></td>
<td>240</td>
</tr>
<tr>
<td>£/pw</td>
<td>1200</td>
<td>600</td>
<td>1500</td>
<td>100</td>
<td>400</td>
<td></td>
<td>400</td>
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<tr>
<td>weeks in 2nd 5 mths</td>
<td>24</td>
<td>24</td>
<td>23</td>
<td>24</td>
<td>24</td>
<td></td>
<td>24</td>
</tr>
<tr>
<td>£ in 1st 6 mths</td>
<td>23500</td>
<td>14400</td>
<td>34500</td>
<td>2400</td>
<td>4800</td>
<td>2500</td>
<td>92200</td>
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<tr>
<td>Year 1 totals</td>
<td>57600</td>
<td>28900</td>
<td>86250</td>
<td>4800</td>
<td>14400</td>
<td>5000</td>
<td>196850</td>
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<td>Year 2 and subsequent years' running</td>
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<td></td>
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<tr>
<td>Qtr</td>
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<td>2</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>sessions pw</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>£/session</td>
<td>300</td>
<td>150</td>
<td>750</td>
<td>50</td>
<td>100</td>
<td></td>
<td>240</td>
</tr>
<tr>
<td>£/pw</td>
<td>1200</td>
<td>600</td>
<td>1500</td>
<td>100</td>
<td>400</td>
<td></td>
<td>400</td>
</tr>
<tr>
<td>weeks in year</td>
<td>48</td>
<td>48</td>
<td>48</td>
<td>48</td>
<td>48</td>
<td></td>
<td>48</td>
</tr>
<tr>
<td>£ in year</td>
<td>57600</td>
<td>28900</td>
<td>18600</td>
<td>4800</td>
<td>19200</td>
<td>5000</td>
<td>133400</td>
</tr>
</tbody>
</table>

#### 2. Operational savings

<table>
<thead>
<tr>
<th>Unit saving</th>
<th>Estimated revolting door patients costs saved</th>
<th>Estimated PCIs saved</th>
<th>Estimated revolting door patients costs saved</th>
<th>Estimated PCI £ saved (unit cost includes other assoc costs)</th>
<th>Gross saving</th>
</tr>
</thead>
<tbody>
<tr>
<td>£80</td>
<td>2000</td>
<td>1800</td>
<td>5600</td>
<td>146000</td>
<td></td>
</tr>
<tr>
<td>£80</td>
<td>2000</td>
<td>1800</td>
<td>5600</td>
<td>296000</td>
<td></td>
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<tr>
<td>£80</td>
<td>2000</td>
<td>1800</td>
<td>5600</td>
<td>444000</td>
<td></td>
</tr>
<tr>
<td>£80</td>
<td>2000</td>
<td>1800</td>
<td>5600</td>
<td>616000</td>
<td></td>
</tr>
</tbody>
</table>

#### 3. Net Savings Calculation

<table>
<thead>
<tr>
<th>Training and running cost</th>
<th>Revolving door patient costs saved</th>
<th>PCIs saved</th>
<th>(unit cost includes other assoc costs - see note)</th>
<th>Net saving</th>
<th>Return on Investment</th>
</tr>
</thead>
<tbody>
<tr>
<td>£196850</td>
<td>193000</td>
<td>339000</td>
<td>247150</td>
<td>1.3</td>
<td></td>
</tr>
<tr>
<td>£444000</td>
<td>382000</td>
<td>326000</td>
<td>247150</td>
<td>2.0</td>
<td></td>
</tr>
</tbody>
</table>

In summary:

- 2013/14 full year training and running costs: £196850
- 2013/14 gross savings: £444000
- 2013/14 net savings: £247150
Total funding available to support the redesign:

2013/14 funding available through QIPP programme £182600 – projected costs revised after QIPP programme funding finalised. Some minor economies will therefore need to be found in the programme costs (to reduce from £196850).

Impact on activity in existing or other services

The project targets a reduction of 60 elective PCIs in 2013/14, which would otherwise be carried out at St George’s Hospital NHS Trust or the Royal Brompton NHS Foundation Trust. There is a range of pre and post procedure activity which would also be reduced, most notably the post procedure rehabilitation services and outpatient appointments. Work by Virtual Angina Ltd elsewhere has demonstrated that the average annual cost per patient of saved PCIs and associated activity is £5600.

The project also targets a reduction, primarily in unplanned health care, for 60 “revolving door patients”. This activity may take a variety of forms – GP consultations, GP out-of-hours consultations, use of ambulance services and attendance at A&E, often culminating in short term unplanned admission via A&E. The data in the Needs Assessment section above indicates 217 patients in the target group have had an initial admission and then multiple readmissions (515) in a 6 month period.

The initial modelling for the project included in Financial Consequences above allows for 60 of these patients to be included in the project. Work by Virtual Angina Ltd in 2005 calculated that the average annual cost per patient for this activity is £1800, which has been used in the modelling. However, the most recent DH commissioning pack for rehabilitation (March 2013) found the average patient cost per unplanned admission (including other unplanned activities) to be £3637.

Please consider whether an equality impact assessment (EIA) is required

This service development forms part of Kingston’s CCG commitment to create a positive culture of respect for all individuals, including staff, patients, their families and carers as well as community partners. The intention is, as required by the Equality Act 2010, to identify, remove or minimise discriminatory practice in the nine named protected characteristics of age, disability, sex, gender reassignment, pregnancy and maternity, race, sexual orientation, religion or belief, and marriage and civil partnership. It is also intended to use the Human Rights Act 1998 to promote positive practice and value the diversity of all individuals and communities.

An EIA is required but has not yet been completed.

Please identify the human resource requirements of the project

<table>
<thead>
<tr>
<th></th>
<th>Mths 1-6</th>
<th>Mths 7-12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Programme clinical lead (Prof. Mike Chester through Virtual Angina Ltd)</td>
<td>3 sessions pw, 23 weeks</td>
<td>2 sessions pw, 23 weeks</td>
</tr>
<tr>
<td>CCG project management</td>
<td>Approx. 1 session pw on average, 23 weeks</td>
<td>Approx. 1 session pw on average, 23 weeks</td>
</tr>
<tr>
<td>Local clinical providers</td>
<td>2 x GPs + 2 x others, 2 sessions pw, 24 weeks</td>
<td>2 x GPs + 2 x others, 2 sessions pw, 24 weeks</td>
</tr>
<tr>
<td>Others e.g. consultant cardiologists, hospital + community rehab nurses, GP and patient representatives</td>
<td>Occasional, ad-hoc</td>
<td>Occasional, ad-hoc</td>
</tr>
</tbody>
</table>
**IT and IM&T Implications**

No specific requirements. Year 1 data collection and analysis will be carried out using simple spreadsheets. This may help in specifying more particular requirements for year 2 and subsequent years.

**Key Milestones**

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project charter and initial testing within Kingston CCG</td>
<td>November 2012- January 2013</td>
</tr>
<tr>
<td>Preparatory work with stakeholders</td>
<td>January 2013 – March 2013</td>
</tr>
<tr>
<td>Initial search for local clinician participants and initial awareness sessions</td>
<td>March 2013 – April 2013</td>
</tr>
<tr>
<td>Initial patient search efforts, particularly focussing on searches of hospital data, to confirm approximate size of target patient pool</td>
<td>March 2013 – April 2013</td>
</tr>
<tr>
<td>Public Health review specified and completed</td>
<td>March 2013 – April 2013, complete by 22/4/13</td>
</tr>
<tr>
<td>Business case approved</td>
<td>26/4/13</td>
</tr>
<tr>
<td>Final support from Governing Body</td>
<td>7/5/13</td>
</tr>
<tr>
<td>Presentations to Council of Members and other stakeholders</td>
<td>21/5/13 and other during May 2013</td>
</tr>
<tr>
<td>Review, revise project plan and financials in light of decision making processes</td>
<td>End May 2013</td>
</tr>
<tr>
<td>Planning for initial sessions</td>
<td>End May 2013</td>
</tr>
<tr>
<td>1st patient group launched</td>
<td>Early June 2013</td>
</tr>
<tr>
<td>Secure 3rd and 4th clinicians for programme</td>
<td>End May 2013</td>
</tr>
<tr>
<td>Finalise with KHT consultants and Rehab services on joint working in general and patient selection in particular</td>
<td>End May 2013</td>
</tr>
<tr>
<td>2nd patient group launched</td>
<td>July 2013</td>
</tr>
<tr>
<td>1st formal project review</td>
<td>End July 2013</td>
</tr>
<tr>
<td>Complete formal review to establish effectiveness of pilot and 2014/15 requirement; implement procurement arrangements as necessary</td>
<td>End December 2013</td>
</tr>
</tbody>
</table>

**Key Risks**

<table>
<thead>
<tr>
<th>Risk</th>
<th>Mitigation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Failure to gain business case approval or Governing Body support</td>
</tr>
<tr>
<td>2</td>
<td>Resistance / opposition from stakeholder(s)</td>
</tr>
<tr>
<td>3</td>
<td>Late start – modelling of costs and savings based on first full 12 months of operation</td>
</tr>
<tr>
<td>4</td>
<td>Failure to recruit sufficient local clinicians</td>
</tr>
<tr>
<td>5</td>
<td>Failure to achieve projected activity reductions</td>
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</tr>
<tr>
<td></td>
<td>carefully with patients. Consider whether project should be suspended in-year (option available within CCG agreement with Virtual Angina)</td>
</tr>
<tr>
<td>6</td>
<td>Difficulties in establishing elements of activity reduction / cost saving</td>
</tr>
<tr>
<td></td>
<td>Explore reasons. Ensure active involvement of Information colleagues. Be creative in pursuit</td>
</tr>
</tbody>
</table>

### Performance Management

1. Weekly Lead Clinician / CCG manager informal review of progress
2. Monthly minuted review with CCG manager
3. On-going discussion and feedback with key stakeholders including on-going patient feedback from 100% of participants
4. Monthly report to Kingston CCG QIPP programme
5. Regular reporting to Kingston CCG Community Cardiology programme
6. Quarterly formal review involving key stakeholders (patient representative, GP, community and hospital rehabilitation services, KHT consultants, neighbouring CCG (?) – June 2013, September 2013, December 2013 (includes decision to continue in 2014/15), March 2014
Appendix 1  Response to Recommendations in Public Health Review 22/4/13

Section 3.1. – Patient Cohort

a. The pathway into the programme (as described above) should be confirmed and described in the business case.

(i) The patients selected for the project will be either
- Those with refractory angina i.e. poorly managed stable angina
- Those contemplating scheduled palliative PCI

(ii) They will be identified by either
- Search of SUS data (e.g. “patients who have had an more than 1 emergency admission for angina and/or chest pain in a six-month period” ref. Needs Assessment section 2)
- Identification by own GP practice (e.g. review of data in practice system, patient consultation data, “awareness” of colleagues)
- Identification within KHT cardiology department (including rehab services)
- Identification within YHC cardiac rehab services

(iii) Patients will be prioritised into the project by

a) patients listed for palliative angioplasty
b) patients with highest need / benefit using combination of
   - those with highest levels of unplanned use of services
   - scoring from brief assessment questionnaire (completed by GP + patient)
c) patients of practices in more disadvantaged areas

b. The size of the total cohort of patients who may be eligible should be estimated

- The example analysis of SUS data included in 3.1.a.ii above undertaken in March 2013 identified 217 patients in a 6 month period
- Analysis of SUS data (Needs Assessment section 2.ii. indicates 12 month elective PCIs at 58 and 79 in most recent 2 years, giving confidence that a target of 60 is reasonable. In addition there were 109 and 92 unplanned PCIs in the same 2 years respectively, and the project can be expected to have some impact on these totals too.

Based on this data and the projected service capacity (number of providing clinicians, number of groups which may be run in year 1), a target of 60 saved PCIs and a further 60 patients improving self-management of their condition has been set for year 1.

c. The patients for whom this programme is suitable must be set out in the business case. Patients must have stable angina.

Patients as identified in 3.1.a.i. above.
Section 3.2 – Description of Intervention

d. Details of the content of programme (as listed in 1 to 9 above) should be confirmed by the provider and included in the business case.

The Angina Self-Management Programme is a multi-component intervention comprising:

(i) Nurse Assessment including baseline tests including blood pressure, ECG, echo if available, weight, recent blood test results.
(ii) Diagnostic session (by Angina Self-Management Plan Medical Consultant) including history taking, current medication recorded, clinical diagnosis discussion, an explanation about angina and misconceptions, decision/consent of patient to take part in the classes.
(iii) Developing assertiveness skills and empowerment to take control of condition.
(iv) Developing skills to distinguish between angina and a myocardial infarction, and how to respond.
(v) Stress control and Relaxation techniques
(vi) Graduated exercise programme and other objective setting.
(vii) Healthy diet advice
(viii) Drugs for angina and their side effects. How to manage / start / stop angina medication. Advice that preventative drugs e.g. aspirin, statin are effective and should be continued/started (as appropriate). Optimisation of anti-anginal drugs with option to reduce doses, change combinations or stop some drugs. Programme writes to the patients GP with this information.
(ix) Revascularisation education including difference between palliative and prognostic revascularisation. Patient suitable for revascularisation are able to opt in or out of the procedure (via their cardiologist) at any time throughout the programme. The programme makes them aware of the limited evidence of additional benefit of palliative revascularisation in terms of symptom relief compared to medical therapy over time.

Quality of Life and Angina Pain scoring in carried out at beginning and end of the programme.

The Angina Management Programme is unique (compared the Angina Plan and The Heart Manual) in its delivery by Consultant level staff and General Practitioners in combination with nursing staff, rather than being primarily nursing led.

e. Provider to confirm if a six or twelve month follow up is to be included in the programme and if this sits within the total programme cost. Note any evaluation of patient satisfaction or cost effectiveness does not necessarily require further programme follow up.

The project will include a 12 month follow-up. Previous experience suggests there will be a very high level of take-up.

Section 4 – Evidence

f. The business case must state (as already verbally confirmed by the provider) that all patients remain under the care of their GP and/or cardiologist and that the above options remain open to them.

All patients remain under the care of their GP and / or cardiologist. Whilst participating in the project they will continue to have input from primary or secondary care to optimise medical therapy. The
option remains open to every patient throughout the programme to choose revascularisation if appropriate.

Section 5 – Cost Effective

g. Outcome measures / costs for health care utilisation should be collected for the Kingston programme at 0, 3 and 12 months. This will allow costs and savings to be compared (these have been discussed with Mike Chester and are listed in section 5.1 below)

The following variables will be collected as a minimum, and have been discussed with the provider:

- Patient Quality of life (SF12, SAQ, EUROQOL)
- Patient and carer satisfaction (patient experience scoring, friends & family test, …)
- Patient confidence to self-manage their condition
- Elective Revascularisation (palliative) – intention before programme, subsequent revasc at 6 mths, 1 year, 2 years.
- GP attendances for angina / all causes
- A&E attendances (all cause, angina and MI)
- Hospital emergency admissions (all cause, angina and MI)
- Hospital planned admissions (all cause, angina and MI)
- Myocardial infarction
- Death (all cause and MI)
- Angina episodes (this will give an estimate of frequency of angina in the cohort)
- Patient agreement to become formal champions
- Number of health professionals who have received training
- Costs of intervention

Note that where feasible some of these data will be collected for the 6 months prior to enrolment to enable assessment of impact.

h. This programme should have pilot status until the benefits and costs / savings in Kingston have been quantified.

This is a pilot project until at least costs / savings in Kingston have been quantified.

Section 5.1 – Monitoring & Evaluation

i. That provider submits amended measures to include as a minimum all those above (the majority of these are already planned by the provider).

As outlined in 5.g.

j. That the provider or CCG seeks to obtain measures 1 year from the beginning of the pilot in addition to 0 and 3 months.

Commitment included in 3.2.e. above
Section 6.4. – Effect on health inequalities

k. This programme should seek to reduce health inequalities by ensuring practices serving deprived populations are encouraged to participate. The programme must ensure all patients with protected characteristics, age, sex, ethnic group etc are not disadvantaged.

The commitment to encourage GP practices in the more socially disadvantaged areas of Kingston to participate is given. The potential to establish provision in these areas to improve access is also included in the main business case document.

The programme will not disadvantage patients with protected characteristics.

Section 7 – Other self-management initiatives

l. The self-management part of the Coronary Heart Disease and Angina pathways are reviewed by the CCG to ensure all commissioned programmes are aligned.

This will be carried out as part of the preparatory planning and early implementation work during May and June 2013.

PC, 23/4/13
INTRODUCTION

Purpose of Review
This review appraises the project charter for the angina management programme and makes recommendations for the programme for Kingston.

What is stable angina and what is the prognosis?
The pain of angina is the main symptom of myocardial ischemia (NICE Guideline 126). Patients with stable angina are thought to have a good prognosis; the all-cause mortality is as low as 1.5%/year (although primary care studies found all-cause mortality to be 2.8% to 6.6%/year). Patients therefore live with stable angina for many years.

METHOD FOR REVIEW
This review combines an appraisal of the paperwork supplied by Mike Chester, a comparison of the programme against the NICE Guideline for Stable Angina (which contains all high quality studies on the various interventions for angina) and discussions with Mike Chester. It was not possible to obtain any reviews of this programme by other PCTs as the relevant people to talk to in Commissioning and Public Health were not available.

THE ANGINA SELF-MANAGEMENT PROGRAMME

Cohort
The project charter states that patients selected for this programme will be either those with refractory angina or those contemplating scheduled palliative PCI. Patients will be identified from hospital data showing frequent fliers to hospital (2+ attendances/admission in past six months for angina) and referrals from cardiologists.

Recommendation: The pathway into the programme (as described above) should be confirmed and described in the business case.
Recommendation: The size of the total cohort of patients who may be eligible should be estimated
Recommendation: The patients for whom this programme is suitable must be set out in the business case. Patients must have stable angina.

1 The Angina Management Programme teaches the theory that angina pain is caused by chemicals released from heart muscle cells to signal to other cells they are at risk and to protect themselves.
2 Refractory angina = patients who have stable angina in whom revascularisation is either unfeasible or where risks are unacceptable (est 0.2% population)
3 Palliative PCI = revascularisation by PCI (percutaneous coronary intervention with balloons or stents) method for symptom control, rather than for prognostic (life-prolonging) purposes
**Intervention – description of the Angina Self-Management Programme**

The intervention is a community based outpatient education programme with an initial 1:1 session followed by four group sessions and a follow up group session at 3 months. Further follow up by the programme at either six or twelve months has not yet been confirmed.

The content of the programme is not set out in the Project Charter for Kingston, but has been gathered through discussion with Mike Chester. The classes are adapted from the ‘The Angina Plan’ for patients with angina by Bob Lewin (note the content is similar to The Heart Manual which is another supervised self-help programme used for post MI patients undergoing cardiac rehabilitation).

The Angina Self-Management Programme is a multi-component intervention comprising:

1. Nurse Assessment including baseline tests including blood pressure, ECG, echo if available, weight, recent blood test results.
2. Diagnostic session (by Angina Self-Management Plan Medical Consultant) including history taking, current medication recorded, clinical diagnosis discussion, an explanation about angina and misconceptions, decision/consent of patient to take part in the classes.
3. Developing assertiveness skills and empowerment to take control of condition.
4. Developing skills to distinguish between angina and a myocardial infarction, and how to respond.
5. Stress control and Relaxation techniques
6. Graduated exercise programme and other objective setting.
7. Healthy diet advice
8. Drugs for angina and their side effects. How to manage/start/stop angina medication. Advice that preventative drugs eg aspirin, statin are effective and should be continued/started (as appropriate). Optimisation of anti-anginal drugs with option to reduce doses, change combinations or stop some drugs. Programme writes to the patients GP with this information.
9. Revascularisation education including difference between palliative and prognostic revascularisation. Patient suitable for revascularisation are able to opt in or out of the procedure (via their cardiologist) at any time throughout the programme. The programme makes them aware of the limited evidence of additional benefit of palliative revascularisation in terms of symptom relief compared to medical therapy over time.

Quality of Life and Angina Pain scoring in carried out at beginning and end of the programme. The Angina Management Programme is unique (compared the Angina Plan and The Heart Manual) in its delivery by Consultant level staff and General Practitioners in combination with nursing staff, rather than being primarily nursing led.

**Recommendation:** Details of the content of programme (as listed in 1 to 9 above) should be confirmed by the provider and included in the business case.

**Recommendation:** Provider to confirm if a six or twelve month follow up is to be included in the programme and if this sits within the total programme cost. Note any evaluation of patient satisfaction or cost effectiveness does not necessarily require further programme follow up.
IS THE ANGINA SELF-MANAGEMENT PROGRAMME EVIDENCE-BASED?

Summary
There is an evidence base that this programme improves quality of life for patients. Individual elements of the programme are effective for example dietary advice has can prevent further progression of coronary heart disease. There is some evidence that these types of self-management programmes can reduce health care utilisation such as hospital admissions. A local evaluation of the Angina Self-Management Programme showed that some patients listed for palliative PCI will decide to delay or withdraw from this procedure after the programme. Cost effectiveness - see next section.

Detail
The Angina Self-Management Programme for Kingston is a community based development of the Refractory Angina Programme devised approximately 10 years ago. The Refractory Angina programme was undertaken at a specialist clinic in a tertiary referral centre and a study showed improvement in Seattle Angina scores, mental wellbeing, anxiety and depression. The assertion that these benefits transfer to community settings was tested in subsequent community based delivery of the Angina Self-Management Programme and similar benefits were measured for people before and after the programme, but no comparison was made with people not on the programme.

An interim evaluation by the provider in Chesterfield produced evidence that for the patients on the programme they were less anxious about their angina after the programme, three patients believed they had avoided admissions or been discharged earlier than they would have before the programme. Consultants at the local hospital thought the programme was beneficial. Patient satisfaction was high. The findings included improved quality of life, psychological, symptomatic and functional status. Costs were not considered.

The Angina Self-Management Programme shares many elements with the Heart Manual used for cardiac rehab for post-MI patients, which has been shown to improve emotional state, improve sense of control, reduce GP contacts, reduce hospital admissions at six months.

The Angina Self-Management Programme is in line with the evidence-based NICE guidelines on Management of Stable Angina provided that the following is the case:

1. People whose angina symptoms are controlled on optimal medical treatment are aware of the benefits/risks of prognostic imaging (despite lack of evidence) to identify those with three vessel disease or left mainstem disease as there is prognostic benefit in revascularisation by CABG (survival increased by 19.3 months over 10 years for patients with LMStem disease and by 5.7 months over 10 years for patients with 3 vessel disease). For these patients, no prognostic imaging is an option. Patients with medically controlled angina found not to have complex vessel disease will not gain benefit from revascularisation.

2. People whose angina symptoms are not controlled on medical therapy have their medical therapy adjusted until it is optimal.

3. People whose symptoms are not controlled on optimal medical therapy but do not have complex 3 vessel disease or LMStem disease (and therefore will not gain prognostic benefit from...
revascularisation) can make an informed choice between revascularisation (PCI is more cost effective in this group than CABG⁴) to improve angina symptoms. It is noted that previous experience of this programme in other parts of the country demonstrates than many patients choose not to have revascularisation but to use techniques taught in the Angina Management Programme to control response to symptoms.

**Recommendation:** the business case must state (as already verbally confirmed by the provider) that all patients remain under the care of their GP and/or cardiologist and that the above options remain open to them.

**IS THE ANGINA SELF-MANAGEMENT PROGRAMME COST-EFFECTIVE?**

There are no peer reviewed studies looking at the cost-effectiveness of the Angina Self-Management Programme.

An interim evaluation of the programme running in another PCT area was carried out by the provider. It did not compare costs/outcomes of patients in the programme against matched controls. However it did weigh the cost of the programme against estimated savings from reduced hospital visits (compared to previous six months) and possible revascularisation (measured as intention not to proceed with palliative revascularisation compared to intention at entering the programme). The interim evaluation shows that in the short term the programme costs less than the savings made (e.g., from less emergency admissions). It is not clear if the costs are shunted on to later years as this was not measured. The level of cost savings can only be applied to the patient group that took part – it cannot be assumed that a roll-out to the whole population of angina patients would produce such a large cost saving.

It should also be noted that cardiac rehabilitation programmes for post-MI also have similar outcomes such as reduced emergency admissions. The Expert Patient Programme in Kingston is reducing A&E attendances and GP consultations in the group that attends the EPP courses. As these programme are nurse-led and patient-led they may be cheaper per patient, but this has not been explored for this review as the interventions are for different patient cohorts.

On this basis it is important to monitor costs and outcomes over 12 months to establish if there are cost savings in Kingston.

**Recommendation:** Outcome measures/costs for health care utilisation should be collected for the Kingston programme at 0, 3 and 12 months. This will allow costs and savings to be compared (these have been discussed with Mike Chester and are listed in section 5.1 below.)

**Recommendation:** This programme should have pilot status until the benefits and costs/savings in Kingston have been quantified.

**HOW SHOULD THE PROGRAMME BE MONITORED/EVALUATED?**

A series of measures are already planned for collection. Patient satisfaction, angina pain and quality of life measures will be gathered through questionnaires at the beginning and end of the programme. A number of other measures can be drawn from hospital data and mortality records. This is a pilot not a trial. There is no randomisation of patients to this programme, but instead an opt-in. This self-selection onto the programme with comparison of before and after programme measures

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⁴ Coronary artery bypass graft
will over-estimate the benefits of the programme compared to a programme that is offered to the entire eligible angina population. Measures will be taken before, during and possibly after the programme. These measures should be taken at 0 months, 3 months and ideally at 1 year (non-questionnaire data as a minimum). The following variables should be included as a minimum, and have been discussed with the provider:

- Patient Quality of life (SF12, SAQ, EUROQOL)
- Patient satisfaction
- Patient confidence to self-manage their condition
- Elective Revascularisation (palliative) – intention before programme, subsequent revasc at 6 mths, 1 year, 2 years.
- GP attendances for angina/all causes
- A&E attendances (all cause, angina and MI)
- Hospital emergency admissions (all cause, angina and MI)
- Hospital planned admissions (all cause, angina and MI)
- Myocardial infarction
- Death (all cause and MI)
- Angina episodes (this will give an estimate of frequency of angina in the cohort)
- Patient agreement to become formal champions
- Number of health professionals trained
- Costs of intervention

**Recommendation:** that provider submits amended measures to include as a minimum all those above (the majority of these are already planned by the provider).

**Recommendation:** That the provider or CCG seeks to obtain measures 1 year from the beginning of the pilot in addition to 0 and 3 months.

**HOW DOES THE PROGRAMME SCORE AGAINST OTHER ELEMENTS OF A BUSINESS CASE PRIORITISATION FRAMEWORK?**

This review considers the following dimensions of the proposed programme: 1) Strategic fit/statutory 2) Achievability 3) Based on a needs assessment (including JSNA) 4) Effect on health inequalities 5) Public and patient engagement

**Strategic fit/statutory**
This programme is a close fit with health and wellbeing strategy for Kingston (which has long term conditions as a priority) and the CCG Commissioning plan’s strategic objectives to improve QOL for people with LTCs, and giving them information to better manage their own care.

**Achievability**
This programme has been shown to be achievable in other PCT areas.

**Based on a needs assessment (incl JSNA)**
The Atlas of Variation demonstrates a higher than expected number of people with angina undergoing palliative PCI in Kingston. The population is projected to increase over time, but most growth will be
in children, young people and the working age population. Therefore the rise of people with angina may not be as steep as seen in many other CCGs.

**Effect on health inequalities**

The project charter does not describe how the programme will impact on health inequalities. **Recommendation:** This programme should seek to reduce health inequalities by ensuring practices serving deprived populations are encouraged to participate. The programme must ensure all patients with protected characteristics, age, sex, ethnic group etc are not disadvantaged.

**Public and patient engagement**

There is no specific description in the Project Charter of how the public/patients have been involved in identifying this programme as needed in Kingston, nor in the design of the programme.

**OTHER SELF MANAGEMENT INITIATIVES**

Whilst this is a unique programme, there is considerable overlap with other provision, in particular the Cardiac Rehabilitation service and the Expert Patient Programme. Each of these services is operated and led in different ways, have different professional input, may be targeted at different patients and will have different costs. Initial discussions have been held between the Angina Self-Management Programme and other providers.  

**Recommendation:** The self-management part of the Coronary Heart Disease and Angina pathways are reviewed by the CCG to ensure all commissioned programmes are aligned.

Helen Raison, Consultant in Public Health

22nd April 2013
Attachment 2 Initial Version of Project Charter

Project Charter

Project Title: Angina self-management programme – Kingston CCG

<table>
<thead>
<tr>
<th>Prepared by</th>
<th>Date</th>
<th>Executive Sponsor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prof M Chester</td>
<td>November 2012</td>
<td></td>
</tr>
</tbody>
</table>

Project Information

<table>
<thead>
<tr>
<th>Project Aim</th>
<th>To develop a community based patient-centred care programme to enable complex stable angina patients to avoid unscheduled admissions and scheduled angioplasty. A quaternary patient-centred prevention programme</th>
</tr>
</thead>
</table>
|             | 1) To reduce the number of patients with stable angina who undergo avoidable palliative angioplasty in Kingston: Quaternary prevention.  
2) To reduce avoidable unscheduled admissions.  
3) Widen choice.  
4) Provide “proof-of-concept” training programme for patient centred community service design and evolution for Long Term Conditions. |

Rationale

It is increasingly recognised that targeted education that enables patients to fully engage in decisions that effect their health and well being delivers better outcomes.

Kingston CCG’s Commissioning Strategy plan for 2013 sets out core strategic objectives that are relevant to this proposal:
- Improve access, quality and choice of service provision across all care pathways and in appropriate settings.
- Improve the quality of life of people living with long term and complex health conditions and their carers by improving the quality, range and choice of services and giving them information to better manage their own health.
- Quaternary prevention (interventions to prevent interventions)

This proposal focusses on two subgroups of angina sufferers where current management strategies have not been shown to be cost effective. Refractory angina patients (also known as ‘heart sink,’ ‘end of line’ or ‘revolving door’ patients) and patients contemplating scheduled palliative percutaneous coronary intervention (PCI).

Refractory angina: Refractory angina patients are complex and expensive and without appropriate intervention, the natural history is of a slow progressive decline in quality of life for them and their carers. Because the condition paradoxically appears to confer prognostic advantage sufferers tend to be elderly with an extensive family network of CHD sufferers. The Cheshire and Merseyside Cardiac Network estimate a prevalence of 0.2% (iv).

Between 1998-2001 Virtual Angina developed a national award winning method of total user engagement in the design and evolution of services for refractory angina sufferers (v). Using this model at the National Refractory Angina Centre, we showed that enrolment in a targeted shared management programme stabilises angina, improves quality of life and reduces unscheduled admissions and GP attendances (vi,vii). See appendices 1 and 2.

Patient and carer service experience measures are universally positive (viii). Net annual cost savings are estimated to be around £1,800 per patient. The vast majority of patients stated that they would not have undergone previous revascularisation procedures (23 in one case) if they had been properly educated beforehand.
**Scheduled percutaneous coronary intervention (PCI):** It is now accepted that scheduled PCI for **stable** angina is palliative and does not reduce the risk of heart attacks or death compared to patient-centred angina care (**ix**,**x**). There is no evidence scheduled PCI is cost effective. The most recent economic analysis in the 2011 NICE stable angina guideline confirmed: “the chance of scheduled angioplasty being cost effective is less than 25%” (**xi**).

There is a growing concern among professional organisations that patients are undergoing palliative angioplasty procedures that are neither necessary nor appropriate according to accepted criteria (**xii**). In December 2009 the cardiac Czar told a patient support group that in his opinion 8% of PCI procedures were inappropriate. Research shows that the majority of the remainder are avoidable. Ornish and Lewin respectively enrolled patients contemplating palliative revascularisation in shared care programmes (**xiii**, **xiv**). Both found that the majority of patients were so improved that they elected not to proceed to revascularisation. In Ornish’s study the reduction in revascularisation was over 90% compared to a group who had recently undergone revascularisation. These findings were replicated at NRAC, Chesterfield and Wirral between 2001 and 2010.

The NHS Atlas of Variation (below) shows higher than average scheduled angioplasty rates for Kingston (and its neighbouring SW London CCGs) despite average or lower than average CHD prevalence (see appendix 1). The NHS Atlas states: “It has been suggested that in places with high rates of elective angioplasty some patients who would do well on optimal medical therapy (OMT) are given angioplasty” and advises: “commissioners: should review: characteristics of patients receiving elective angioplasty to identify potential eligibility for OMT; protocols on appropriate use of OMT and elective angioplasty” (**xv**). See appendices 3.

The number of scheduled angioplasty procedures has fallen over recent years, but remains significant at around 4 per 10,000 registered population.

Between March 2011 – Feb 2012 Sutton and Merton PCT (pop ~391,000) paid a total of £720,279.09 for the following OPCS codes:

<table>
<thead>
<tr>
<th>No</th>
<th>OPCS Code</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>157</td>
<td>K751-754</td>
<td>£626,022 (scheduled angioplasty)</td>
</tr>
<tr>
<td>7</td>
<td>K491-493</td>
<td>£27,466 (scheduled angioplasty to bypass grafts)</td>
</tr>
<tr>
<td>6</td>
<td>K401-404</td>
<td>£66,790 (bypass procedures)</td>
</tr>
</tbody>
</table>

For comparison during the same period Kingston CCG (pop ~190,000) paid a total of £331,964:

<table>
<thead>
<tr>
<th>No</th>
<th>OPCS Code</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>n=71</td>
<td>K751-754</td>
<td>£289,808 (scheduled angioplasty)</td>
</tr>
<tr>
<td>n=0</td>
<td>K491-493</td>
<td>£0 (scheduled angioplasty to bypass grafts)</td>
</tr>
<tr>
<td>n=4</td>
<td>K401-404</td>
<td>£42,156 (bypass procedures)</td>
</tr>
</tbody>
</table>

The costs outlined above do not include post revascularisation rehabilitation costs @ £500 per patient, nor the additional annual cost of combined anti platelet drug therapy (Aspirin plus Plasugrel or clopidogrel), nor the costs of follow on bypass surgery. In addition, the cost of repeat investigations and procedures in patients who fail to thrive are not included in these figures. The true cost of scheduled angioplasty to the CCG equates to ~£2 per registered patient.

A key objection to the implementation of patient centred optimal medical care among cardiologists is that it is not practicable within existing services. The development of alternative community services is vital to the success of the BSVB programme which is certain to include: “Major, sustained improvements in GP and community services.”

Virtual Angina addressed the transferability of the model in a PBC service development with Derbyshire PCT in 2008. In the pilot study 14 patients were offered patient-centred shared management programme delivered by a trained primary care team in a community setting as an alternative to palliative revascularisation during a pre procedure “cooling off” period. None of
the patients proceeded to have a procedure and the estimated net saving was £46,493 or £3,320 net saving per patient. Admissions were also avoided in-line with expectations (vi). The service is now fully commissioned. There were similar outcomes in a Virtual Angina PBC redesign project in Wirral. Patient and carer satisfaction ratings were extremely high with 100% net promoter scores. The cost of setting up and delivering the service for the first year is around £100,000 and £60,000 in subsequent years.

Assuming 85% of enrollees choose not to proceed to PCI the net savings achievable in Kingston during the first year is realistically above £200,00 (shown at Appendix 2). Net savings in year 2 are expected to exceed £300,000 (Appendix 4)

Key Area of Focus

<table>
<thead>
<tr>
<th>Adults in Kingston CCG with Refractory Angina and Stable Angina patients considering palliative revascularisation.</th>
</tr>
</thead>
</table>

Start Date April 2013
Projected End Date Self funding from 6 months

Project Objectives (SMART):

Statements of specific, measureable, achievable, relevant, timely outcomes

- Reduce spend on scheduled angioplasty
- Reduce number of invasive procedures
- Reduce risks (procedure-related harms)
- Improve patient experience
- Reduce anxiety
- Improve patients’ self-care skills
- Improve patients’ shared decision-making skills
- Improve patients’ and carers’ knowledge of the condition
- Reduce misconceptions among patients and carers
- Increase adherence to secondary prevention measures
- Very high user experience measures
- Improve primary prevention access to at risk groups

Reduce the cost of funding this group of admissions by more than 50%

Better patient outcomes – Zero SUI’s/Complaints

Project Scope

<table>
<thead>
<tr>
<th>Those within</th>
<th>Those without</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adults with advanced complex (refractory) angina and those considering palliative PCI ) K751 -754 scheduled angioplasty K491- 493 scheduled angioplasty to bypass grafts)</td>
<td>Children, Adults requiring revascularisation for prognostic reasons. Unstable angina, acute myocardial infarction, severe proximal “graftable” disease.</td>
</tr>
</tbody>
</table>

Expected Benefits: Benefit Measure Stakeholder

<table>
<thead>
<tr>
<th>What is the benefit?</th>
<th>What is the measure?</th>
<th>Who benefits?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduction in the number of patients choosing palliative Angioplasty</td>
<td>a) Number who defer b) Change in scheduled activity</td>
<td>Secondary care. Patient experience+ PCT/GP</td>
</tr>
<tr>
<td>Speedier access to acute angioplasty for MI patients</td>
<td>Door to procedure time</td>
<td>The individual AMI patient Secondary care</td>
</tr>
</tbody>
</table>
### Patient Centred Angina Management Business Case v3

**Date:** 24/4/13

**E1 - 22**

<table>
<thead>
<tr>
<th>Reduction in angioplasty procedure risks/serious incidents</th>
<th>No procedure = no procedure related complications</th>
<th>PCT Wider health economy</th>
<th>Patient &amp; secondary care</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patients better informed of alternatives and supported to manage their condition.</td>
<td>Before and after Questionnaire assessment</td>
<td></td>
<td>Patient &amp; secondary care</td>
</tr>
<tr>
<td>Reduced unscheduled admissions Patient waiting times reduced. Pressure on service (A&amp;E) reduced. Pressure on in-patient beds reduced</td>
<td>Before and after admission data</td>
<td></td>
<td>Patients and carers, PCT/CCG, secondary care</td>
</tr>
<tr>
<td>Increased patient satisfaction.</td>
<td>Service satisfaction scores and patient complaints</td>
<td></td>
<td>Patient &amp; relative/carers satisfaction rate increased with a responsive service and less disruption of their lives</td>
</tr>
<tr>
<td>Primary care team trained in patient-centred angina service design and delivery</td>
<td>Satisfactory completion of training programme</td>
<td></td>
<td>PCT/CCG</td>
</tr>
<tr>
<td>Development of a Continuous Improvement &amp; User engagement culture</td>
<td>User surveys</td>
<td></td>
<td>CCG</td>
</tr>
<tr>
<td>Transfer of skills to other long term conditions (e.g. COPD, heart failure)</td>
<td>New community-based self care training programmes for LTCs</td>
<td></td>
<td>CCG/LTC sufferers</td>
</tr>
<tr>
<td>Primary prevention: Health promotion in families of CHD patients attending programme</td>
<td>Increased awareness and adoption of healthy behaviours in family members</td>
<td></td>
<td>Public Health</td>
</tr>
</tbody>
</table>

#### Key Milestones (stages of the project plan):

<table>
<thead>
<tr>
<th>Milestone</th>
<th>Start Out</th>
<th>Define &amp; Scope</th>
<th>Measure &amp; Understand</th>
<th>Design &amp; Plan</th>
<th>Pilot &amp; Implement</th>
<th>Sustain &amp; Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agree Project with CCG’s</td>
<td>Dec 2012</td>
<td></td>
<td></td>
<td>March 2013</td>
<td></td>
<td>Evaluate after 6 months</td>
</tr>
</tbody>
</table>

#### Project Team:

<table>
<thead>
<tr>
<th>Role:</th>
<th>Time commitment:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consultant in cardiology/medicine</td>
<td>Virtual Angina training and support</td>
</tr>
<tr>
<td>General Manager</td>
<td>Project management</td>
</tr>
<tr>
<td>Primary Care nurse/rehab</td>
<td>Nursing steer</td>
</tr>
<tr>
<td>GP</td>
<td>Primary care support</td>
</tr>
</tbody>
</table>

#### Additional Resource Requirements:

Getting genuine stakeholder engagement is very important to the long-term success of the project. User engagement in adapting the service delivery approach is a critical aspect of the design approach.

Experience of setting up similar community-based services in Chesterfield and Wallasey shows that it is easily possible to set up and deliver a service using existing facilities that are standard in modern practice facilities with only minor (low cost) adaptations.
This is because the service is exclusively outpatient education-based, with an initial 90-120 minute one-to-one followed by 4 weekly 2 hour group sessions and ending with a follow up group 2 hour session at 3 months and an optional one to one clinic. Experience shows that nearly all patients who enrol complete the course and fewer than 1 in 10 proceed to undergo revascularisation. Importantly, the programme is designed to enable patients and carers who attend to use their knowledge to influence their (at risk) families to adopt primary prevention measures.

In the first 3-4 months three groups of 8 patients will receive treatment from Professor Chester, who is the pioneer and recognised national expert in patient-centred angina care. At the same time he will teach GPs and nurses the skills they need to run and continuously improve the programme with his ongoing support.

At Chesterfield and Wallasey the cost savings in the first 24 patients exceeded the service delivery costs for the year. It is relevant that the Wirral clinic was not set up specifically for patients considering angioplasty because the consortium was too small consequently only a small number of the Wirral patients were considering revascularisation. The rest were revolving “ordinary” angina patients who were failing to thrive in standard cardiology clinics and made frequent demands on GP and A&E services.

**Setup costs**
The main set up costs relate to Virtual Angina Ltd’s consultancy fees for service design and delivery training programme. It is reasonable to anticipate that the savings generated in the first six months of the service will exceed the set up and running costs for the first year. Sunk costs are minimal. It takes 6 months to train a team to run the programme. The education programme involves a combination of seminars, workshops and reflective learning based around hands-on clinical training. The team will be trained in adult education methods. The clinical training programme involves patients receiving treatment at the same time as the clinicians learn how to deliver and evolve the service using the patient-centred continuous improvement approach. Virtual Angina will provide long-term mentoring support and quality control.

**Running costs for 100+ new patients seen annually**
Weekly primary care staffing costs at 2 GP sessions and 2 nurse sessions. 0.5 secretarial sessions. Clinic and seminar room fees. Training in patient-centred service design, patient-centred continuous improvement, patient-centred angina management and ongoing mentoring and support will be provided by Professor Chester through Virtual Angina and Patient-Centred solutions.

**Facilities**
1. A comfortable lounge type interview room suitable for a one to one discovery interview, a break followed by brief cognitive intervention (2 hours). Two sessions a week.
2. A seminar room suitable for up to fourteen patients to receive group five two hour sessions of cognitive behavioural intervention. One session a week.
3. Standard projection facilities/flipcharts etc.

**Running costs and savings in £1000**

<table>
<thead>
<tr>
<th>Period</th>
<th>Monthly cost</th>
<th>Admissions savings</th>
<th>PCI savings</th>
<th>Net saving</th>
<th>RoI</th>
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</thead>
<tbody>
<tr>
<td>0-6 months training costs</td>
<td>17</td>
<td>43</td>
<td>121</td>
<td>62</td>
<td>0.6</td>
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<tr>
<td>6-12 months</td>
<td>9</td>
<td>72</td>
<td>203</td>
<td>218</td>
<td>3.8</td>
</tr>
<tr>
<td>year 2</td>
<td>9</td>
<td>150</td>
<td>303</td>
<td>340</td>
<td>3.0</td>
</tr>
<tr>
<td>year 3</td>
<td>9</td>
<td>150</td>
<td>303</td>
<td>340</td>
<td>3.0</td>
</tr>
</tbody>
</table>

*Includes training, office rent, 2 GPs and 2 nurses each at 1 day a week. Secretarial costs
Additional Information:

Virtual angina Limited and Patient-Centred Solution Ltd are service design consultancies that specialise in the design and delivery of patient-centred services.

Virtual Angina’s total user engagement model has been used in over a dozen service redesigns in secondary care and two successful PBC funded services (Chesterfield and Wirral). The evidence shows that not only does the model create services that delight patients and their carers, it leads to significant reductions in admission and palliative revascularisation rates as predicted by the European Society of Cardiology, American combined colleges and NICE stable angina guidelines.

The average annual cost to the CCG per patient undergoing scheduled angioplasty and rehabilitation is estimated to be over £5,613 based on the National schedule of prices (including multiple stent procedures, repeat investigations, repeat interventions, follow up visits, anti platelet therapy). The average annual per patient cost of comprehensive optimal conservative care is £966 in the first year falling to £500 thereafter. This results in a substantial increase in the estimated Return on Investment (ROI) after the initial training phase, see appendix 3.

An optimal service delivery model could enrol 107 patients in the first year. In this analysis we have estimated 66% of patients offered the service will enrol and that 85% will defer.

In our experience, it is reasonable to expect that 90-95% of procedures would be avoided if patients considering scheduled angioplasty were given the option of enrolment in a patient-centred angina programme. 107 such patients enrolled will generate in excess of £350,000 = average Return On Investment (ROI) of over 2 within the first 6 months and an average ROI of over 5 across the year. It is important that ROI estimate does not include the other health benefits of reduced emergency admissions, fewer GP visits and the benefits associated with enhanced secondary, tertiary and primary prevention.*

For patients considering palliative bypass surgery @ £8431 (including rehab) the estimated ROI exceeds 5:1. However, because bypass surgery should be commissioned through specialist commissioning redeploying these savings would have to be negotiated.

Future development

The service is easily expandable and the patient-centred service design method is applicable to long-term conditions generally (xvi). We anticipate that the CCG will want to use the savings to both expand the service and create new services using the same method.

* The trained index case has direct access to and can influence the next generation who share the CHD prone genes
Appendix 1. Effect of enrolment on unscheduled cardiac-related admissions

Monthly Cardiac Days In Hospital
before and after enrolment

Moore RK et al., J Pain Symptom Manage. 2007 Mar;33(3):310-316

Appendix 2. Effect of enrolment on unscheduled all cause admissions

Monthly unplanned bed days in the year
before and 30 months after enrolment

>15 bed days per patient per year  < 7 bed days in year 1  <6 bed days in year 2+

n=233
Appendix 3

NHS Map of variation showing mismatch between CHD prevalence and palliative PCI activity
Appendix 4. Plot of net savings assuming 75% or 95% choose not to proceed after enrolling in the programme. The 20% error bars are shown.

Appendix 5. Plot of Return on Investment (ROI) net saving divided by cost. The graph shows the predicted ROI over the first year including the first 6 month set-up period (training phase). The sudden increase at 6 months reflect an increase in throughput once the team has completed core skills training coupled to the reduction in training costs.
Appendix 6. Plot of cumulative costs vs. gross vs. net savings in second year when throughout increases and unit costs fall by 40%.

![Second year costs vs savings by month](image)

References


v National NHS Nye Bevan Award for Innovation and Modernisation 2000


viii 2009 UK Customer Experience award: Best overall organisation


x Weintraub et al. Cost Effectiveness of Percutaneous Coronary Intervention in Optimally Treated Stable Coronary Patients. J Am Coll Cardiol 2008; 52(10):921-929

xi NICE stable angina guidelines: [http://www.nice.org.uk/CG126](http://www.nice.org.uk/CG126)

xii ACCF/SCAI/STS/AATS/AHA/ASNC 2009 Appropriateness Criteria for Coronary Revascularization [http://content.onlinejacc.org/cgi/content/full/j.jacc.2008.10.005v1](http://content.onlinejacc.org/cgi/content/full/j.jacc.2008.10.005v1)

xiii Ornish D. Avoiding revascularization with lifestyle changes: The Multicenter Lifestyle Demonstration Project. Am J Cardiol. 1998 Nov 26;82(10B):72T-76T.


xvi “We must all do what we can to ensure that the lessons learned from that collaborative approach are used to develop not just other refractory angina services, but patient-centred chronic disease management generally.” Adjournment debate 15 Oct 2008, [http://www.publications.parliament.uk/pa/cm200708/cmhansrd/cm081015/halltext/81015h0012.htm](http://www.publications.parliament.uk/pa/cm200708/cmhansrd/cm081015/halltext/81015h0012.htm)