Community Cardiology Service - Reinventing Care

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Clinical Cardiology Lead
Connected care Partnership
Background – Evidence of Need

• Cardiology accounts for high volumes of OP activity in hospitals particularly follow-ups

• For Modality practices in 2015-16: 6,048 OP attendances costed £680,000 across secondary and community care

• Limited access to Cardiology diagnostics

• Lack of co-ordinated approach between primary and secondary care

• Inadequate cardiology management in primary care
Introducing - Connected Care Partnership

Birmingham Community Healthcare NHS Trust

Sandwell and West Birmingham Hospitals NHS Trust

Birmingham and Solihull Mental Health NHS Foundation Trust
The New Care Model

24/7 Single Point of Access

- Well population (80%)
- Moderately complex population (18%)
- Most complex population (2%)

Self-Care Enablement

Healthy Communities

Enhanced Primary Care

Specialist Services (Outpatients)

Referral Management

Condition Management

End of Life Care

End of Life Care

Complex Case Management

Nursing Home / Residential Care
Aim of service

- To see patients with heart conditions in familiar community settings, closer to home
- Deliver better access than current services with fewer patient clinic attendances
- Deliver better outcomes than current services
- Deliver quality care that is at par with secondary care
- Streamlined integrated care alongside local hospital with smooth transfer of investigation information and clinical care
- Deliver all the above at lesser costs than the current existing services
Patient Presents With palpitations

Waits

Sees GP

Waits

GP Refers

Waits

Hospital Receives letter

Waits

Consultant receives letter

Has 7 day ECG

Waits

Outpatients

Waits

Outpatients and decision

Waits

Has 7 day ECG

Waits

Outpatients and decision

Waits

Consider ILR

Waits

Outpatients

Waits

Hospital Receives letter

Waits

Put on waiting list

Waits

24hr ECG

Waits

Negative Test

Waits

Lost to system

Waits

Has 7 day ECG

Waits

Sees GP

Waits

GP writes letter

Waits

Dr Matthew Fay
Cardiology Service Model

- Clinical triage of all cardiology referrals
- Improve Cardiology referral pathway
- Advice and guidance/- e-consults
- GP direct access to Echo/ Holters
- GPSI specialist opinion
- Consultant/ GPSI MDT working
- Specialist Nurse follow-up
- Primary care education and up-skilling

Community cardiology Service
### Referral Criteria and Exclusions

<table>
<thead>
<tr>
<th>Service design - Phase1</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Referral Criteria</strong></td>
</tr>
<tr>
<td>▪ 24 hour Holter recording</td>
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<tr>
<td>▪ Echocardiogram</td>
</tr>
<tr>
<td>▪ 24 Hour BP recording</td>
</tr>
<tr>
<td>▪ Symptoms and signs of heart failure and positive BNP</td>
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<tr>
<td>▪ Above + prev h/o MI and positive BNP</td>
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<tr>
<td>▪ Any suspected Paroxysmal arrhythmia</td>
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<tr>
<td>▪ Age &gt; 18 yrs with suboptimal BP control despite 3 agents including diuretic</td>
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## Direct Access investigations

<table>
<thead>
<tr>
<th><strong>Echocardiography</strong></th>
<th><strong>Holter monitoring</strong></th>
<th><strong>24 hr BP monitor</strong></th>
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<tbody>
<tr>
<td>▪ Any new murmur in &gt; 18yrs</td>
<td></td>
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<tr>
<td>▪ Any new Arrhythmia esp Atrial Fibrillation</td>
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<tr>
<td>▪ Raised BNP/ Pro- BNP : &gt; 100 or &gt; 400</td>
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<tr>
<td>▪ Suspected heart failure in prev hist of MI</td>
<td></td>
<td></td>
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<tr>
<td>▪ Symptomatic palpitations- frequency Twice weekly</td>
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<td></td>
</tr>
<tr>
<td>▪ Paroxysmal Suspected arrhythmia</td>
<td></td>
<td></td>
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<tr>
<td>▪ Assess control of AF</td>
<td></td>
<td></td>
</tr>
<tr>
<td>▪ New Suspected hypertension</td>
<td></td>
<td></td>
</tr>
<tr>
<td>▪ Assess control of BP</td>
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Healthcare costs a crisis

- Healthcare costs are out of control
- Technology enabled self care

### COST (£) OF CURRENT PATHWAY

<table>
<thead>
<tr>
<th>Service</th>
<th>Cost</th>
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<tbody>
<tr>
<td>First GP visit (incl. ECG test)</td>
<td>£81</td>
</tr>
<tr>
<td>Outpatients</td>
<td>£230</td>
</tr>
<tr>
<td>24hr ECG</td>
<td>£163</td>
</tr>
<tr>
<td>7 day Holter test</td>
<td>£163</td>
</tr>
<tr>
<td>Outpatients and decision</td>
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</tr>
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<td>Outpatient and decision</td>
<td>£230</td>
</tr>
<tr>
<td>Implantable loop recorder (ILR)</td>
<td>£4,021-4,556</td>
</tr>
<tr>
<td>Second GP visit</td>
<td>£45</td>
</tr>
<tr>
<td><strong>Total (with ILR)</strong></td>
<td><strong>£1,305 (£5,861)</strong></td>
</tr>
</tbody>
</table>

### COST (£) WHEN USING KARDIA MOBILE

<table>
<thead>
<tr>
<th>Service</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>First GP visit (incl. ECG test)</td>
<td>£45</td>
</tr>
<tr>
<td>GP supplies Kardia Mobile</td>
<td>£99</td>
</tr>
<tr>
<td>Second GP visit</td>
<td>£45</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>£189</strong></td>
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</table>
Service Equipment:

- Monitor up to 40 days
- 1st day continuous ECG recording (2 channels)
- Pre-event and post-event: up to 15 minutes
- All RR intervals recorded
- ECG holter quality: 200 Hz / 10 μV
- 1 alkaline or lithium AAA battery
- Communication: Audio modulation
- ECG patient cable: 1 or 2 channels
- Recording stored on a 80th 8GB card
- Weight: 50 g w/o battery
- Dimensions: 75 x 50 x 10.5 mm
Spider Flash-T

SpiderFlash™-t is the result of the experience gained by Sorin Group in the development of non-invasive solutions. SpiderFlash-t and its analysis software, EventScope™ are two components of a single unit which enables the identification, diagnosis, and documentation of different cardiac pathologies.

SpiderFlash-t is the result of 5 years of experience in the development of ECG recording solutions.

Monitor up to 40 days
- 1st day continuous ECG recording (2 channels)
- Pre-event and post-event: up to 15 minutes
- All RR intervals recorded
- ECG holter quality: 200 Hz / 10 µV
- 1 alkaline or lithium AAA battery
- Communication: Audio modulation
- ECG patient cable: 1 or 2 channels
- Recording stored on a 8GB SD card
- Weight: 60 g w/o battery
- Dimensions: 75 x 40 x 10.5 mm

LONG TERM MONITORING UP TO 40 DAYS

Thanks to the best battery capacity possible for a device of this type, the SpiderFlash-t provides you with a new perspective on the follow-up of your patients. Whether symptomatic or asymptomatic, requiring short or long-term monitoring, SpiderFlash-t responds to your patient needs.

An AAA battery is enough to let the SpiderFlash-t record over a very long period of time. For example, SpiderFlash-t can record 2 ECG channels from 14 to 40 days.

DOCUMENT EVENTS ACCURATELY WITH LOOP MEMORY

SpiderFlash-t’s dynamic memory allows for rhythm episodes to be accurately identified regardless of their duration.

SpiderFlash-t’s memory captures the events and documents them through an ECG sample. Thanks to its loop memory, ECG onset is also recorded. ECG samples are recorded in three different ways:
- Auto triggered with pathology recognition algorithms
- Activated by the patient when a symptom is felt
- Automatically at planned times on a programmed timetable, the HeartUp software enables the programming of the SpiderFlash-t to collect the number, duration and type of ECG episode desired.

ACCOMPANY THE PATIENT

If needed, SpiderFlash-t can also communicate recorded data. By pushing the SEND button, SpiderFlash-t sends 10 seconds of ECG to any telephone number equipped with a compatible interface.
AliveCor - Kardia Mobile

• Records ECG lead I
• Takes just 30 seconds
• Live display on screen
• Works with iOS or Android phones and tablets
• Captures events immediately
• Instant analysis
• Does not require Wifi or Bluetooth
Kardia Band

• A Kardia watch strap for Apple watch
• Touch the Kardia sensor for 30 seconds for an instant ECG recording
• Works just the same as Kardia Mobile
• Email from the watch
• ECG’s are stored in your journal in the cloud with Premium service
Why use Kardia?

- Better patient compliance
  - Kardia Mobile is associated with better patient compliance than a traditional event monitor (94% vs. 58%).
- Significant cost savings
  - Current care pathway £2,650 versus £99 for Kardia Mobile
- Ease of use
  - patients are more likely to use Kardia Mobile than a traditional event monitor in social or work situations (81% vs. 33%).
- Speed
  - 30 seconds to record
  - reduces number of hospital visits
  - faster time to therapy
Patient Presents With palpitations

Waits

Sees GP

GPSI supplies AliveCor

GP Waits

Symptomatic trace

Advice and management

Dr Matthew Fay
Service Equipments contd.

Mckesson Workstation
What does the future look like?

Phase 1
- Hypertension/ Palpitation/ Heart failure diagnosis

Phase 2
- Heart failure service

Phase 3
- Ischaemic heart disease

Phase 4
- Intervention Services
Summary

• Community Cardiology service that is GPSI led and fully supported by Cardiology team at Sandwell/ City hospital

• Quality Cardiology diagnostics with latest state of the art technology imported from across the globe

• Direct access for Cardiology Diagnostics to GPs

• Unique Streamlined Integration of service and results output with secondary care

• Provision of diagnostic reports with Primary care focus

• Service that will support up-skilling of primary care
Thank you for listening
Any questions?