Baseline assessment against Chapter 8 of the NSF for Coronary Heart Disease: Arrhythmias and Sudden Cardiac Death
North West London Cardiac Network
April 2007

Introduction

In March 2005 Chapter 8 of the Coronary Heart Disease NSF set quality requirements for the treatment of arrhythmia patients and patients at risk of Sudden Cardiac Death (SCD) in the UK. The North West London cardiac network is keen to ensure that these requirements are being met across the sector, and is also concerned about the variation in ICD and pacemaker implantation rates between different primary care trust catchment areas. 2005 data from the Cardiac Networks Device Survey Group[1] shows this variation to be 24.4% across the sector. The network's aim is that this variation should be reduced to zero as soon as possible.

Chapter 8 clearly states that responsibility for meeting its requirements lies with primary, secondary and tertiary care, as is the case with all long-term conditions. It suggests that there should be close collaboration between all organisations to achieve its aims. Primary care has the responsibility of ensuring that appropriate patients are referred into the correct secondary and tertiary services for diagnosis and treatment. The chapter envisages that this triage role is carried out in arrhythmia clinics in the community, and that arrhythmia care coordinators are employed to lead and facilitate this process.

In order to get a clear picture of what services are being provided for arrhythmia patients, the network has funded a four-month project to map services against Chapter 8 requirements. The network will use this baseline assessment of service provision as a basis for any service redesign that is necessary. The results of this mapping exercise show that there are some clear priorities for the network as it implements Chapter 8 and works to ensure that every adult patient across North West London receives the treatment they need no matter where, or when, they present to the NHS.

For the purposes of this study, services in North West London have initially been measured against the markers of good practice outlined in Chapter 8. The second section of this document, the sector's capacity to deliver NSF Chapter 8 services has been measured against patient demand. The final section contains conclusions and recommendations for future action.

[1] This study is called 'A review of ICD and pacemaker implantation practice for 2004 and 2005'

Background information

Primary Care

North West London has a population of 1.8 million, and is divided into eight PCT catchment areas.

PCT	Population	No. GP practices	Main acute providers	Current cardiology waiting list issues	No. GPwSIs	No. CHD specialist nurses
Ealing	305,000	83	Ealing Hospital, St Mary's	Diagnostic waits Transfer of patients into tertiary care	0	0
Brent	330,000	74	St Mary's, North West London Hospital (NWLH), Hammersmith	Wait for stress echoes at Central Mid	1	2.53 WTE
Harrow	210,700	39	NWLH, St Mary's Harefield	No	7 (3 in training, 4 qualified)	5.5
Hounslow	212,900	59	West Middlesex, Hammersmith	No	0	0
Westminster	222,000	45	St Mary's	No	0	0
Kensington & Chelsea	186,000	44	St Mary's, Chelsea and Westminster, Hammersmith (10%), RBH[2]	No	0	0
Hillingdon	247,600	53	St Mary's, Hammersmith, RBH	No	3	2

[2] 'RBH' is used here to represent the Royal Brompton and Harefield NHS Trust. For the purposes of this document, the separate sites will be referred to as 'Brompton' and 'Harefield' where appropriate.

Hammersmith & Fulham	174,200	31	Hammersmith Hospitals, St Mary's, NWL Hospitals	No	0	0

QOF data

The number of patients with Atrial Fibrillation (AF – a type of cardiac arrhythmia), was included on the PCT QOF (Quality and Outcomes Framework) register from April 2006 onwards. It is the only statistic available to measure arrhythmia activity in primary care. However, it does not reflect the actual population with AF. Activity so far is listed below.[3]

AF1: Register of AF patients

PCT	April	May	June	July	August	Sept	Oct	Nov	Dec	Jan
Ealing	2646	2729	2762	2770	2783	2780	2765	2762	2779	2773
Brent	1904	1964	1967	1966	1973	1988	1991	1984	1999	1990
Harrow	2410	2415	2419	2427	2425	2407	2398	2372	2368	2380
Hounslow	1850	1862	1888	1892	1879	1994	1875	1867	1863	1861
Westminster	1943	2049	2039	2041	2037	2026	2027	2028	2039	2020
K and C	1553	1562	1565	1570	1555	1549	1552	1551	1552	1536
Hillingdon	2776	2781	2784	2772	2783	2772	2782	2799	2817	2828
H and F	1267	1264	1288	1297	1311	1319	1324	1316	1335	1347

[3] It should be noted that patients with AF are only a percentage of the total number of arrhythmia patients in any PCT area. However, it is the only arrhythmia-specific information available on PCT databases. Therefore this study has used the QOF information to assess any trends in referrals for arrhythmia patients.

AF2: Initial diagnosis

PCT	April	May	June	July	August	Sept	Oct	Nov	Dec	Jan
Ealing	19	42	66	91	109	125	171	203	258	313
Brent	16	33	19	61	77	93	112	132	159	204
Harrow	19	44	74	101	130	148	183	215	238	278
Hounslow	36	67	98	128	146	177	200	215	226	242
Westminster	26	59	76	105	125	139	164	191	214	221
K and C	14	33	42	50	64	78	99	121	144	174
Hillingdon	39	83	133	173	224	255	302	347	395	394
H and F	18	26	46	67	92	113	138	155	164	174

AF3: Ongoing management

PCT	April	May	June	July	August	Sept	Oct	Nov	Dec	Jan
Ealing	2048	2149	2229	2268	2305	2331	2354	2390	2426	2448
Brent	1444	1532	1557	1585	1617	1649	1673	1703	1729	1734
Harrow	1902	1945	1978	2009	2025	2035	2046	2061	2081	2083
Hounslow	1850	1860	1886	1887	1874	1878	1862	1851	1838	1817
Westminster	1942	2048	2034	2025	2014	2002	1989	1976	1981	1931
K and C	996	1049	1120	1164	1201	1234	1266	1297	1318	1286
Hillingdon	2776	2781	2778	2762	2765	2749	2756	2766	2779	2713
H and F	1265	1262	1285	1287	1300	1308	1311	1302	1317	1300

It has been documented that Atrial Fibrillation affects approximately 1% of the population[4]. Therefore the number of patients registered under AF1 should reflect this. The following graph shows that the registered number of AF patients is well below 1% of the majority of PCT populations.

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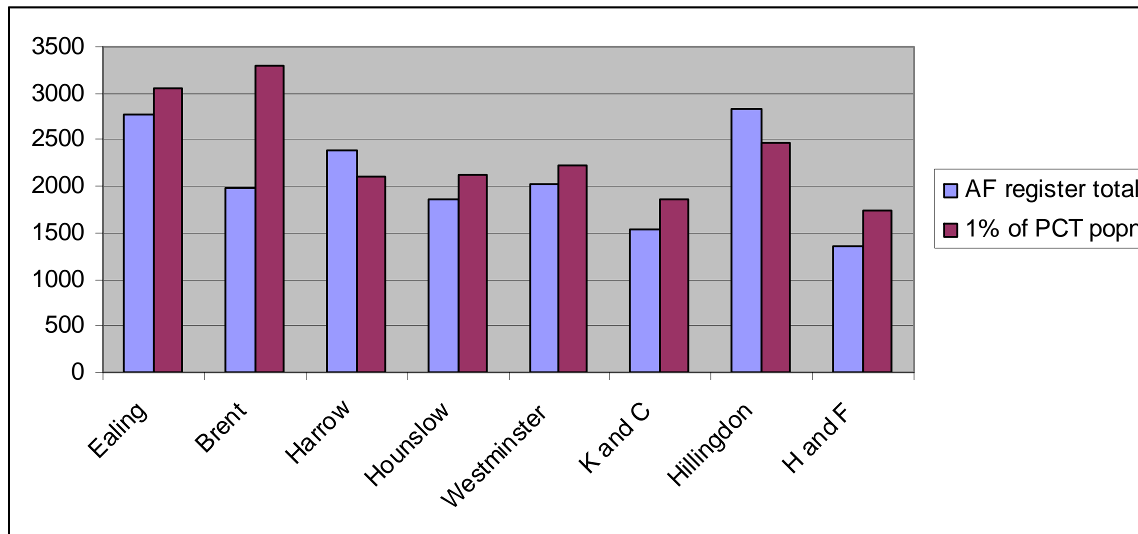
[4] NSF Chapter 8, Setting the Scene, p. 3. This is an extremely blunt measure of prevalence, and it must be remembered that these figures have not been adjusted for age or demographics.

Graph comparing AF1 totals for Jan 07 with 1% of PCT populations



This chart clearly shows that only Harrow PCT and Hillingdon PCT have AF register levels equal to or higher than the 1% that is expected. This reflects variations in ICD implantation rates that are discussed later in this paper, and indicates that there are significant AF diagnosis issues in primary care. It is clear that not all of the patients with AF in North West London are being diagnosed.

Secondary Care

There are five secondary care Trusts in North West London.

Basic Chapter 8 information

	No. of catheter labs delivering Chap 8 services	**No. of consultants delivering Chapter 8 services**	**No. of arrhythmia procedures undertaken by Trust**	**No. of specialist arrhythmia nurses employed**
Ealing Hospital NHS Trust	1 lab does occasional emergency pacing	The Trust has no specialist EP consultants[5].	0 except emergency pacing	0
Hillingdon Hospital NHS Trust	0	As above	0	0
West Middlesex Hospital NHS Trust	0	As above	0	0
North West London Hospitals NHS Trust	1 x intervention room for pacing New lab at Northwick Park Hospital for pacing. Also has CRT capacity.	As above	Single and dual chamber pacing	0
Chelsea and Westminster NHS Trust	0 but bid in for pacing lab	As above	0 – all happen at RBH	0

[5] However, all cardiology consultants see arrhythmia patients in OP clinics and as acute admissions, and therefore play a key part in delivering Chapter 8 work.

Tertiary Care

There are three tertiary care centres in North West London.

Basic service information

1. **Staff and cath lab information**

	No. of full time catheter labs delivering Chap. 8 services	No. of wte consultants delivering Chap 8 services	No. of specialist arrhythmia nurses employed by Trust
Hammersmith Hospitals NHS Trust	1	1 (1 more currently being recruited)	0
St Mary's NHS Trust	1.5	3	2 (BHF funded)
Royal Brompton and Harefield NHS Trust	3	6.4[6]	2: 1 covering devices, 1 covering EP (BHF funded)

2. **Procedures**

All the above Trusts undertake the following procedures:

- Diagnostic EP Study
- Ablation
- Single chamber pacing
- Dual chamber pacing
- Insertion of Implantable Cardiac Defibrillators (ICDs)
- Cardiac Resynchronisation Therapy (CRT)

[6] There is cross-over within this total i.e. 2 of the consultants do heart failure work as well as arrhythmia work. This 6.4 breaks out as follows: **Brompton**: 1 WTE – EP + pacing + devices + intervention; 1 WTE – EP + devices; 0.2 – C+W consultant employed by the Trust for 0.2 for pacing + devices + intervention; 0.2 – consultant employed for complex OPD pacing – no lab time; 1WTE – Heart failure consultant with 1 session for devices; 1 WTE – Heart failure consultant with no lab sessions but assess for CRT. **Harefield**: 1 WTE – EP+ devices; 1 WTE – Devices + pacing. In addition SpRs insert pacemakers.

Quality Requirement 1: Patient Support
Aim: To improve the emotional and practical support offered to patients with arrhythmias and their families.
Quality requirement: People with arrhythmias receive timely and high quality support and information, based on an assessment of their needs.

This section focuses on tertiary providers in North West London, as they are primarily responsible for supporting arrhythmia patients through their course of treatment.

Markers of Good Practice

1. People with arrhythmias receive a formal assessment of their support needs and those at significantly increased risk of anxiety, depression or a poor quality of life receive appropriate care
2. People with long-term conditions receive support in managing their illness from a named arrhythmia care coordinator
3. Good quality, timely information about arrhythmic conditions is given by appropriately trained staff

Trust	Current situation	Action needed?
St Mary's	2 BHF arrhythmia nurses see patients pre-procedure in clinic and support them during and after the procedure, in person and on the phone. A phone number is available to all patients who require help or support. Patient information: internal ICD information leaflet and BHF leaflets for all procedures.	No
RBH	1 EP and 1 Devices nurse see patients pre-procedure in clinic and support them during and after their procedure, in person and on the phone. A phone number is available to all patients who require help or support. Patient information: arrhythmia alliance leaflets on all procedures. Helpline number given to all patients.	No
Hammersmith	No specialist arrhythmia nurses are employed by this Trust, and therefore support for patients comes from other specialist nurses ie heart failure nurses.	Yes. As the Trust has no specific arrhythmia nurses staff do not have the capacity to meet marker 2. The Trust plans to put in a bid for BHF nurses under the next funding round, but should also look internally to find staff to

		support arrhythmia patients. However, it may be that the entire arrhythmia service will be configured differently when Hammersmith and St Mary’s NHS Trusts merge later in the year.

Quality Requirement 2: Diagnosis and Treatment
Aim: To ensure expert assessment of a person in whom an arrhythmia is suspected, and that an appropriate and clinically effective care pathway is followed.

This section crosses primary, secondary and tertiary care.

Primary Care
It has already been identified by this study that the levels of AF diagnosis in North West London are lower than expected. Chapter 8 suggests that a way of tackling low levels of diagnosis is to introduce community clinics to enable arrhythmia patients to rapidly access the specialist care that they need. The following table shows what community clinics are currently available for arrhythmia patients.

PCT	Community clinic details
Ealing	None
Brent	None, but a nurse-run AF clinic starting soon.
Harrow	GPwSIs run 10 community cardiology clinics per month at community health centre, covering all CHD patients including arrhythmias. 8 patients seen per session.
Hounslow	None
Westminster	None
K and C	None
Hillingdon	None
H and F	Rapid access cardiology clinic run by Charing Cross Hospital. Daily open access for all cardiology patients, including arrhythmia patients.

This shows that the majority of arrhythmia patients in North West London do not have a community rapid access arrhythmia clinic available to them.

Commissioning to meet Chapter 8 requirements

Commissioning has a key role in the implementation of NSF Chapter 8 and in the diagnosis of arrhythmias. Therefore all PCTs were asked the following questions in relation to this quality requirement. Any PCT not mentioned did not reveal any specific commissioning plans around the new Chapter.

1 What organisational plans do you have in place to ensure delivery of NSF Chapter 8?

The majority of PCTs do not have specific plans in place to ensure the delivery of NSF Chapter 8.

- Harrow PCT feels that it already meets the Chapter's requirements with their community cardiology clinics.
- Brent PCT has plans in place to start a community nurse-led AF clinic.
- Hammersmith and Fulham fund the rapid access cardiology clinic at Charing Cross Hospital, which covers arrhythmia patients.

2 What quality markers have you put in place to ensure delivery of NSF Chapter 8?

No PCTs have specific quality markers in place to ensure delivery of NSF Chapter 8. This means that none of the PCTs appear to be assessing local Trusts' performance against Chapter 8 requirements as part of their commissioning process or as part of their performance management criteria.

3 Do you commission rehabilitation services specifically for arrhythmia patients?

No rehabilitation services have been specifically commissioned for arrhythmia patients. However Harrow PCT does provide rehabilitation support to any patients referred with an ICD. Kensington and Chelsea PCT and Hammersmith and Fulham PCT feel that these patients are covered by existing hospital rehabilitation services. However, in accordance with the National Service Framework for CHD, rehabilitation would be commissioned to take place for MI and revascularisation patients only. As such it would not generally be part of the tariff for other cardiac procedures.

4 Do you have a commissioning process in place to ensure compliance with NSF Chapter 8?

No PCTs have a commissioning process in place to ensure compliance with NSF Chapter 8. All rely on existing SLAs to ensure that the requirements are met.

Secondary Care

In secondary care the majority of arrhythmia patients are seen in general cardiology clinics alongside other CHD patients. As such it is difficult to measure the impact of secondary care on the achievement of this quality requirement. However, it should also be noted that many arrhythmia patients present via other specialties such as Care of the Elderly and General Medicine. Studies have shown that these patients are not always referred into cardiology services for treatment, and that this is a potential reason for low device insertion rates[7].

North West London Hospitals, Chelsea and Westminster Hospital and Ealing Hospital run specialist clinics that include some arrhythmia patients, but this information is covered in the capacity/demand section at the end of this report.

Tertiary Care

Markers of Good Practice – Initial Treatment

1 All patients receive a hard copy of their ECG documenting their arrhythmia and a copy is placed in their records.

Trust	Current situation	Action needed?
St Mary's	Done	No
RBH	Done	No
Hammersmith	Done	No

2 Patients who survive out-of-hospital cardiac arrest and patients presenting with pre-excited atrial fibrillation are assessed by a heart rhythm specialist prior to hospital discharge.

Trust	Current situation	Action needed?
St Mary's	Done	No
RBH	Done	No
Hammersmith	Done	No

[7] Survey commissioned by the Network Devices Survey Group and presented by Janet McComb to the NWL network conference, February 2007.

3 The following patients are assessed urgently by a heart rhythm specialist:

- *Patients with syncope or any other symptom(s) suggestive of an arrhythmia and a personal history of structural heart disease or a family history of premature sudden death*
- *Patients with recurrent syncope associated with palpitations*
- *Patients with syncope and pre-excitation*
- *Patients with documented 3rd degree AV block (not associated with acute MI)*
- *Patients with recurrent syncope in whom a life-threatening cause has not been excluded*
- *Patients with documented ventricular tachycardia*

4 The following patients are referred to a heart rhythm specialist:

- *Patients with a presumed diagnosis of ventricular tachycardia*
- *Patients with Wolff-Parkinson-White (WPW) syndrome or asymptomatic pre-excitation*
- *Patients with symptomatic regular recurrent supraventricular tachycardia which is unsuccessfully treated with one type of medication or who would prefer not to take long-term medication*
- *Patients with recurrent atrial flutter*
- *Patients with symptomatic atrial fibrillation despite normal medical therapy*
- *First degree relatives of victims of sudden cardiac death who died below the age of forty years*
- *Patients with recurrent unexplained falls*

Trust	Current situation	Action needed?
St Mary's	Done	No
RBH	Done	No
Hammersmith	Done	No

Markers of Good Practice – Ongoing Treatment

1 Mechanisms are in place for urgent referral of patients with sustained or compromising arrhythmias for prioritisation of appropriate treatment.

Trust	Current situation	Action needed?
St Mary's	Urgent consultant to consultant referrals prioritised where appropriate	No
RBH	As above	No
Hammersmith	As above	No

2 ICDs are considered in patients presenting with life-threatening ventricular arrhythmias and in those without demonstrable arrhythmia but identified as being at high risk.

Trust	Current situation	Action needed?
St Mary's	Yes	No
RBH	Yes	No
Hammersmith	Yes	No

3 Catheter ablation is considered as the treatment of choice in patients presenting with sustained supraventricular tachycardia (SVT) other than atrial fibrillation, and cardioversion of recent onset atrial fibrillation (AF) is considered as early as is clinically safe

Trust	Current situation	Action needed?
St Mary's	Yes	No
RBH	Yes	No
Hammersmith	Yes	No

4 Where further hospital treatment is not recommended, a care plan is agreed between the patient, GP and the arrhythmia care team, including follow up and support as required

Trust	Current situation	Action needed?
St Mary’s	Yes. BHF nurses play key role here.	No
RBH	Yes. As above.	No
Hammersmith	Lack of arrhythmia care team makes this difficult, although a care plan is agreed.	Again, a dedicated arrhythmia nurse team would improve this situation.

Quality Requirement 3: Sudden Cardiac Death
Aim: To reduce mortality from sudden death and improve services for families who have lost a close relative

This section applies to primary care, to secondary care and to tertiary care providers across the sector. The sector will be treated as a whole as it is the network's intention that there should be one referral pathway for all these patients across North West London.

Markers of Good Practice

1. *Individuals who experience episodes of sustained palpitation and/or unexplained impaired consciousness, particularly if repeated or triggered by exercise, have rapid access to cardiac evaluation, including 12-lead and continuous ECG monitoring and 2D echocardiography*
2. *Suitable bereavement services are available for those who have lost a family member*
3. *An expert post mortem is carried out and appropriate tissue retained if informed consent is given.*
4. *Evaluation of families who may have inherited cardiac disease takes place in a dedicated clinic, with staff who are trained in diagnosis, management and support for these families. Genetic counselling and further testing is available if appropriate.*

Current situation in NWL

There are currently two established SCD clinics in North West London. The first is run at the Royal Brompton and Harefield NHS Trust by Dr. Jan Till, and began as a paediatric clinic in November 2003. The clinic is bi-monthly, and saw 86 patients in the first 9 months of financial year 06/07, with an average of 5.4 patients per clinic. Genetic testing, counselling and blood testing are available at the clinic. GPs refer direct to the service. The waiting time is currently 9 weeks. While the numbers of patients referred to the clinic has risen by 20% in the past year, this does not indicate that all potential SCD patients in North West London are being referred into this service. Many patients are referred into specialist treatment on an ad hoc basis.

The network audit established that the majority of consultants across North West London do not refer into this clinic. This is true even of consultants in the same Trust. Some consultants refer to the Inherited Cardiac Disease Clinic at St Mary's NHS Trust, which was established by Dr Amanda Varnava in December 2006. This service receives referrals from Beds and Herts as well as from other London Trusts. It runs twice a month, seeing an average of 6 patients per clinic. It has consultant EP and geneticist support, and arrhythmia nurses work closely with all the patients. Discussions are currently ongoing between RBH and St Mary's to ensure that all patients are seen appropriately.

Other patients are referred to St George's, to UCH, to Oxford or to the CRY centre for sports cardiology at Northwick Park Hospital. The latter is run by Dr Nigel Stephens, Professor William McKenna and Dr Sanjay Sharma. Its primary function is to treat elite sportsmen and to undertake research, but it also sees the families of SCD patients, and has close links to the SCD centre at Heart Hospital.

While this section of the NSF covers a relatively small number of patients, all consultants questioned agreed that the sector would benefit from a network-wide service, run on clear clinical protocols and supported by one clear referral pathway. It proved difficult to gauge GP opinions on this as no PCT was actively commissioning any SCD service. However it is clear that relevant patients would benefit from GPs following a clear referral pathway into specialist care. National guidelines[8] imply that any SCD service should include the following components:

1. Consultant cardiologists (adult and paediatric) with specific expertise and experience in the management of familial cardiac disorders that can cause sudden cardiac death.

2. Nurse specialists with training in counselling, evaluation and management of adults and children with inherited cardiovascular conditions.

3. Clinical genetic staff to provide pre- and post-test counselling and to co-ordinate DNA testing, aid in genetic data interpretation and cascade testing of at-risk family members. They will act as a gateway to genetic testing to ensure regional genetic testing budgets are used cost-effectively.

4. Echo technicians with specific training in the evaluation of inherited cardiovascular conditions.

5. In addition to these core staff, clinics need to be linked closely to electrophysiological services, interventional cardiology, cardiothoracic surgery and cardiovascular imaging departments.

6. Testing.

All inherited cardiovascular conditions centres should have access to the following:

[8] These are taken from the 'Proposal for the Establishment of Inherited Cardiac Conditions Centres' by a working group led by Professor William McKenna. This paper has been endorsed by the Department of Health's Chapter 8 Programme Board.

a) Dedicated echo service with state of the art equipment capable of performing tissue Doppler strain rate imaging and contrast echocardiography.
b) Access to and experience with cardiac magnetic resonance imaging in cardiomyopathy.
c) Exercise testing (risk stratification and diagnosis).
d) Ambulatory electrocardiographic monitoring
e) Signal averaged electrocardiograms.
f) Facilities for non-invasive or minimally invasive electrophysiology investigation (Ajmaline testing etc.).

7. The inherited cardiovascular conditions centres should have access to endorsed information sources most probably provided through links with patient groups.

Inpatient Capacity

For the purposes of this section, the network has examined how much capacity is available across the secondary and tertiary care centres for delivering arrhythmia treatment. It has been split into secondary and tertiary care.

Secondary Care

North West London Hospital NHS Trust is the only secondary care Trust undertaking arrhythmia procedures.

Current capacity

Procedure	Capacity per week
Diagnostic EP Study/ablation	0
Single chamber pacing	1
Dual chamber pacing	2
ICDs	0
CRT	0.125

Tertiary Care

Current waiting times[9]

	SMH	RBH	Hammersmith
Average elective inpatient waiting time for arrhythmia patients	Up to 13 weeks	20 weeks	Not known
Average emergency inpatient waiting time	1-2 weeks	Not known	Not known

Current inpatient capacity per week

Procedure	SMH	RBH	Hammersmith[10]
Diagnostic EP Study/ablation	14	14 sessions/21 patients	5
Single chamber pacing	2-3	20	10 slots for 'device implantation,' covering all procedures below
Dual chamber pacing	2-3	15-20 slots for this, including ICDs, CRT	See above
ICDs	2	As above	See above
CRT	2	As above	See above

[9] All information provided by the Trusts concerned from in-house waiting list figures.
[10] Hammersmith will be expanding its capacity once its new EP consultant is in post.

Numbers of procedures carried out over the past 3 years at tertiary Trusts

This study originally aimed to split this down by procedures as follows: Diagnostic EP study/ablation, CRT, ICD, Single chamber pacing, dual chamber pacing. However due to coding issues, all Trusts have found it difficult to separate out the procedures before 2006/07, when coding improved in response to payment by results. It is therefore extremely difficult to read trends in the data available. It should also be noted that the 07/06 data only runs until the end of January 2007 and therefore does not show full year activity. This was due to the time constraints of this project. This study has therefore projected the end of year figure, based on activity levels so far.

Due to these data issues, the study has taken device data from the Cardiac Networks Device Survey Group 'A review of pacemaker and ICD implantation practice in 2004 and 2005.' The source for this report is the registration forms that are filled out by a Trust whenever a device is implanted.

2004/05[11]

	Diagnostic EP study/ablation	**CRT**	**ICDs**	**Pacing**
St Mary's	Can't split this information down	n/a	n/a	n/a
Royal Brompton & Harefield	151 (Harefield) Brompton – can't split this information down	100 (HH)	60 (HH)	570 (HH)
Hammersmith	Can't split this information down	6	11	175

2005/06

	Diagnostic EP study/ablation	**CRT**	**ICDs**	**Pacing**
St Mary's	Can't split this information down	26	n/a	155
Royal Brompton & Harefield	185 (Harefield) Brompton – can't split this information down	132 (HH)	80 (HH)	516 (HH)
Hammersmith	Can't split this information down	25	25	158

[11] The Cardiac Networks Device Survey Group study runs by calendar year, whereas the Trusts collect data by financial year. Therefore the above figures do not directly tally, but this fact was not considered significant enough to prevent their use in this study.

2006/07

	Diagnostic EP study/ablation	**CRT**	**ICDs**	**Pacing**
St Mary’s	191	48	n/a	134
Royal Brompton & Harefield	510 Brompton – can’t split this information down	121 (HH)	91 (HH)	501 (HH)
Hammersmith	Can’t split this information down	20	25	158

The above data shows that CRT is rising, as is ICD implantation. Pacing is shown to be remaining at consistent levels following a slight rise between 04/05 and 05/06

IP Demand

Hammersmith Hospitals NHS Trust was the only tertiary centre able to measure referrals figures over the past three years, for ablation, ICDs and diagnostic electrophysiological study. Coding issues prevented more information being available.

Hammersmith

	Ablation	ICD	EP study
04/05	58	0	55
05/06	82	0	85
06/07 (till Jan 07 – projected)	90 (108 – projection)	14 (17 – projection)	82 (98 – projection)
Percentage rise in demand	**86%**	**17%**	**78%**

This data clearly shows an enormous rise in demand for Hammersmith's arrhythmia services, particularly as capacity has remained the same during the above period, with one consultant delivering all services. This is one possible explanation for the low device insertion rates in the Hounslow area, which receives its tertiary care from Hammersmith Hospital.

Outpatient capacity

Secondary Care

North West London Hospitals Trust

Total OP capacity per annum for treatment of arrhythmia patients at SMH outreach clinic clinics at NWP and Central Middlesex (1 per month on each site)

New patients	Follow up
50	150

Ealing Hospital runs a tilt testing service which helps diagnosis of some arrhythmia patients. The Royal Brompton also runs an outreach arrhythmia clinic at Ealing Hospital once a month. However, no statistics are available for these clinics.

Chelsea and Westminster NHS Trust run one syncope clinic, with the capacity to see five patients per week. Average waiting time is one month.

As previously stated, all other secondary care Trusts run general cardiology clinics, so it is not possible to separate arrhythmia slots from other types of patient slot.

Tertiary Care
At all 3 Trusts, patients are referred in to OP services via the following routes:

- Direct from GP
- From secondary care cardiology departments
- From secondary care – other departments

Total OP capacity

Trust	New patients	Follow up patients
St Mary's	1596	2940
RBH	1625	3750
Hammersmith	Rapid access clinic is flexible according to demand so OP capacity overall can't be measured	

	SMH	RBH	Hammersmith
Number of arrhythmia clinics run per week by specialist consultants	3	6	2
Number of specialist arrhythmia clinics run every week	3 x EP	1 x syncope 1 x paediatric arrhythmia 2 x CRT 4 x arrhythmia[12]	1 x Rapid access palpitations and syncope clinic 1 x EP clinic
Number of slots per week	108	Syncope: 3 x FU, 1 new PA/AA: 18 x FU, 1 new CRT: 5 EP: varies by consultant, but average of 10 new, 30 FU	Rapid access is open access and flexes according to numbers through the door EP: info not yet available
Percentage of appointments used per week	100%	100%. Always full and overbooked.	100%.
Average waiting time	8 – 10 weeks	Syncope – one week	Rapid access – 0

[12] Again, these clinics cross over according to consultant specialism.

		PA/AA – no waiting issues Rest – new appointment within 11 weeks	EP – info yet to be received
Number of clinics run at other Trusts/in the community	1 – Northwick Park 1 – Central Middlesex 1 – Hemel Hospital 1 – Lister Hospital, Stevenage	Winchester, Ealing, Maidenhead, Kingston, QEII	None[13]

[13] The new consultant job plan will include outreach clinics, especially at West Middlesex University Hospital, which is currently facing a shortage of arrhythmia services.

Current demand for OP Services

SMH

	Referred	**Seen new**	**Seen F Up**
04/05	979	692	2355.1
05/06	949	675	1913
06/07[14]	934 (1120 – projected figure)	644 (773 – projected figure)	1478 (1774 – projected figure)

RBH – not possible to split down this information

	Referred	**Seen new**	**Seen F Up**
04/05			
05/06			
06/07			

Hammersmith

	Referred	**Seen new**	**Seen F Up**
04/05	Unable to split down this info	250	992
05/06	Unable to split down this info	274	960
06/07	Unable to split down this info	216 (259.2 – projected figure)	826 (991 – projected figure)

These figures show that referrals have increased significantly for St Mary's over the past year. Similarly the numbers of new patients seen at the Trust has risen over the past year. Hammersmith figures have been relatively stable over the same period.

This study has unfortunately found it impossible to truly measure current OP capacity against demand due to lack of information. However it is certain that referral rates have remained steady or risen, particularly as Trusts start to run more outreach clinics to increase their patient base.

[14] It is important to note that the 06/07 data only runs until January 2007 and therefore appears lower than it is.

Finance and staffing
All three Trusts are concerned by the tariff payments currently made for CRT implants and ICDs. All find the amount paid to be significantly below their costs, especially as these procedures consume extended catheter lab time and therefore additional staff time. Similarly, the basic procedure tariffs for EPS and ablations, especially AF, don't appear to take adequate account of the cath lab/staff time involved in these procedures.

SMH and RBH are having difficulty recruiting technicians with EP experience. The shortage of cardiac physiologists is also affecting the ability to deliver services across the Trusts. As Hammersmith activity increases with a new consultant, it is concerned that it is at the ceiling of activity it can cope with if cardiac physiologist staffing levels remain as they are.

Rehab
No trusts run stand alone rehab services for arrhythmia patients. PCTs are also not commissioning rehab services for this group of patients. Chelsea and Westminster Hospital is planning to start exercise classes for arrhythmia patients in the near future.

Plans to implement NSF requirements

Hammersmith:

- Appointment of second consultant
- Refurbishment of cardiac catheter labs to create capacity needed to meet waiting time targets

SMH:

- Training 2 BHF nurses to run their own clinics, supported by consultants, and to provide comprehensive support to patients.
- Increasing catheter lab EP capacity.
- Launching Rapid Access Arrhythmia Service, June 2007.

RBH

- Training 2 BHF nurses to run their own clinics and to provide comprehensive support to patients. Developing business case for two more.
- Appointing 2 extra EP consultants to create the capacity needed to meet waiting time targets.

- Developing workforce to provide rapid access service for arrhythmia care, run by specialist nurses and cardiac physiologists

Chelsea and Westminster

- Planning to start pacing this year

NWL Hospitals

- Business case submitted for ICDs and CRT for 07/08. Not yet approved.

Ealing Hospital

- Syncope service planned.
- Arrhythmia clinic running twice a month.

West Middlesex Hospital

- Plan to develop a weekly arrhythmia clinic, run by second consultant at Hammersmith Hospital who will be based at West Middlesex for one session per week.

Device insertion rates

All the following information has been taken from the Cardiac Network Device Survey Group 'A review of pacemaker and ICD implantation practice in 2004 and 2005.'

Variation in implantation rate across North West London: 24.4%.

Device implantation rates[15]

	ICDs				**Pacemakers**			
PCT	**2004**[16]	**Deficit**	**2005**	**Deficit**	**2004**	**Deficit**	**2005**	**Deficit**
Ealing	28.3	-71.7%	40.4	-59.6%	384.7	-45.3%	397.8	-43.4%
Brent	22.6	-77.4%	31.6	-68.4%	515.6	-26.7%	328.1	-53.3%
Harrow	62.4	-37.6%	62.4	-37.6%	546.5	-22.3%	576.8	-17.9%
Hounslow	23.1	-76.9%	34.6	-65.4%	311.0	-55.8%	253.9	-63.9%
Westminster	41.6	-58.4%	36.4	-63.6%	453.2	-35.5%	397.3	-43.5%
K and C	59.8	-40.2%	46.5	-53.5%	357.9	-49.1%	315.8	-55.1%
Hillingdon	53.6	-46.4%	67.0	-33.0%	528.8	-24.8%	670.1	-4.7%
H and F	30.6	-69.4%	15.3	-84.7%	547.1	-22.2%	353.5	-49.7%

All PCT catchment areas are below expected rates for device insertion, but some are clearly facing greater issues than others. The worst affected are Hounslow, Brent, Hammersmith and Fulham and Ealing PCTs.

[15] It should be noted that these figures are collected over a calendar year, while other figures in this report have been collected over a financial year. It is felt that this discrepancy will not have a major impact on the results of this study. All figures are compared to a rate of 100.
[16] Per million population. All figures are adjusted for age and sex.

Conclusions and Recommendations

General

Accessing the data required to make this study effective has been extremely difficult. While all Trusts involved have been extremely helpful, inaccurate or generic coding has made it difficult to separate out arrhythmia procedures in a robust way. Now that Payment by Results has brought in more effective coding, it is hoped that this will no longer be the case.

This study has operated against a background of a challenging financial and organisational situation in several North West London PCTs. While organisations are restructuring and imposing severe financial constraints on all budgets, it is difficult to focus on planning services and it appears that Chapter 8 has passed under the radar for the majority of organisations. In conversation with the PCTs it was noted that the majority expected secondary and tertiary care to meet the relevant requirements with no active commissioning seen as necessary to ensure that Chapter 8's quality requirements are met. This goes against the central tenet of the Chapter itself, which places considerable emphasis on the need for primary care to consider the needs of these patients when planning services. Similarly, the idea of the arrhythmia care coordinator is only being embraced by tertiary care.

However it is also clear that Trusts are working hard to deliver innovative new services to meet the needs of this group of patients. Four arrhythmia BHF nurses have been appointed, and are engaged in supporting arrhythmia patients pre and post procedure. Some are also running their own clinics. New consultant appointments at the Hammersmith and at Royal Brompton and Harefield NHS Trust will increase capacity further. Rapid access clinics are available in Harrow PCT and Charing Cross Hospital.

The overall picture, where data allows it to be seen, is that demand is rising for arrhythmia services, but that capacity is increasing too.

Recommendations

Quality Requirement 1: Patient support

- That more arrhythmia care coordinators are appointed to guide patients through their treatment as and when they are needed. Priority areas would be Hounslow, Ealing, Hammersmith & Fulham and Brent PCTs.

Quality Requirement 2: Diagnosis and Treatment

- That more rapid access arrhythmia clinics are developed across the sector, whether these are based in primary care or in the acute sector. It is essential that these clinics are based in areas that are currently registering the lowest levels of device implantation ie Hounslow, Ealing, Hammersmith and Fulham and Brent to try to address diagnostic issues.
- That the network runs education sessions for GPs to try to increase awareness of arrhythmia symptoms and diagnosis. Again, this should be linked to the areas currently facing difficulties. The network ran an arrhythmia awareness day for GPs in April 2007, and another will run in October 2007.
- That commissioners engage with Chapter 8 and work to ensure that it is implemented. It is noticeable that stroke occurs in 5% of AF patients, and that device implantation could contribute to cost savings for PCTs in the long term, through reduced hospital admissions for stroke.
- That commissioners ask for information on performance against Chapter 8 as part of their contracts with all Trusts and assess results against quality markers.
- That all organisations actively recruit cardiac physiologists and EP technicians, to ensure that shortages don't affect services.
- That primary, secondary and tertiary care work together to ensure that the arrhythmia patient pathway is made as consistent and effective as possible across the sector, and that this pathway is signed off by all organisations concerned.
- That rehabilitation services for arrhythmia patients are commissioned by PCTs to ensure that they receive appropriate support post treatment.
- That Trusts examine their internal referral processes to ensure that arrhythmia patients referred via other specialties, ie general medicine or care of the elderly, are referred on to cardiology services for the treatment the need.
- That the network and Trusts take every opportunity raises the issue of the discrepancy between tariff funding for arrhythmia treatments, and the cost of delivering that care to the Department of Health until the issue is resolved.

Quality Requirement 3: Sudden Cardiac Death

I. That the network highlights to the Department of Health the need for quick, efficient and low cost genetic screening to support SCD services.

II. That the network liaises with local providers to develop one referral pathway for SCD patients, supported by robust protocols and referral criteria. The current situation, in which three separate services are running within the sector, is confusing for GPs and does not fit with the aims of national guidelines from the Department of Health. The latter suggest that each sector should have a maximum of one SCD centre.

III. Once this pathway is in place, the network should publicise the service across the sector and recommend it to commissioners. This service should include all the elements listed in national guidelines.