

## Cardiology Developments in North West London

### Summary Paper

1. Organisations in North West London agreed to improve cardiac services by adopting new clinical practice and solving problems in patient access to revascularisation procedures. This paper describes approaches which have been developed in a series of meetings with cardiologists and operational managers for -
  - 1.1 ensuring that patients with acute coronary syndrome, who may need revascularisation, gain access to diagnosis and treatment as quickly as possible.
  - 1.2 introducing primary angioplasty for patients presenting with ST elevation myocardial infarction [STEMI]:
2. A crucial outcome of the discussions, which have involved cardiologists and service managers from almost every acute hospital, is broad agreement that North West London must develop a sector-wide approach to the development and coordination of cardiac services, including tackling the current issues.
3. It has become quite clear in the discussions that have taken place that some patients are waiting in hospital for cardiac surgery as well as for cardiology procedures. Further work is needed to tackle the delays in providing patient's with faster access to surgery.

### Developing cardiology services and tackling problems

#### Acute coronary syndrome

4. In North West London, most patients with acute coronary syndrome are seen quickly and existing arrangements work well. But some patients wait far too long in their local hospital for access to diagnosis [angiography] and treatment – balloon angioplasty or cardiac surgery. Acute patients at some local hospitals in North West London can wait several weeks for access to diagnosis and treatment. Problems have been greatest at Ealing [for angiography and angioplasty and surgery] and North West London Hospitals [for angiography and angioplasty and surgery], but there is pressure elsewhere in the sector.
5. Robust arrangements are in place to transfer patients from a local hospital to a cardiac centre for diagnosis and treatment as follows –
  - Hillingdon to Harefield
  - Chelsea and Westminster to Royal Brompton
  - West Middlesex to Hammersmith (treat and return)
  - Central Middlesex to St Mary's (treat and return)
6. Northwick Park has tried to become more self-sufficient and to build up its own cardiology services based on its single catheter laboratory. The Hospital has links with St Mary's Hospital, where it sends more complex patients and those requiring cardiac surgery, and with Harefield Hospital.

7. Steps have been taken in the last few weeks to tackle the build up of acute patients at Ealing Hospital. A number of patients have been successfully transferred to the Royal Brompton Hospital for treatment. In addition Ealing and Hammersmith have agreed to establish a day case treat and return transfer arrangement for acute patients which, when tested and fully operational, will take four patients a week. These arrangements are not yet in operation but it is essential that they are successfully put in place as soon as possible.
8. As a result of growth in demand, some pressure is developing on the arrangements between West Middlesex and Hammersmith and between Central Middlesex and St Mary's. Some centres are finding it difficult to meet demand from their local hospitals. Reasons include resources and shortage of day case/recovery beds, alongside pressure on catheter laboratory capacity and staff. Hammersmith have started to offer day case treat and return transfer sessions to Ealing. Both Hammersmith and St Mary's are installing a third catheter laboratory during 2005 which, whilst helping to support primary angioplasty, will also provide additional capacity for other patients.
9. It is essential to have in mind that all four cardiac centres have similar day case arrangements in place with hospitals outside North West London. These are as follows –
  - Royal Brompton with Heatherwood and Wexham Park Hospitals in East Berkshire, Queen Mary's Hospital, Roehampton and Royal Surrey Hospital, Guildford.
  - Harefield with Slough, Luton and Dunstable Hospital, Queen Elizabeth II, the Lister and Watford Hospitals, in Hertfordshire.
  - Hammersmith with Wycombe and Stoke Mandeville Hospitals.
  - St Mary's with Hemel Hempstead and Watford Hospitals.

This means that some day case sessions in catheter laboratories and some day case beds are reserved for patients from these hospitals.

### **Primary angioplasty**

10. North West London has been invited by the Department of Health to be a pilot to evaluate a sector-wide system for organising and providing primary angioplasty. The sector has responded positively to the invitation, in line with agreement reached by Chief Executives. Discussions have been held with clinicians and managers from acute trusts and cardiac centres and with the London Ambulance Service [LAS] about how to organise primary angioplasty so that -
  - this form of treatment is available for all North West London residents;
  - a workable system is established which means that all four cardiac centres are not on call out of hours at the same time;
  - arrangements for primary angioplasty take account of the need to maintain services for patients with acute coronary syndrome and for elective patients.
11. Agreement has been reached as follows –
  - 11.1 primary angioplasty should be organised on a North West London-wide basis, as should other cardiology services.
  - 11.2 all four cardiac centres will provide primary angioplasty for the populations they serve (organised so that all of the NWL population has access to this service), on

- the basis that, as far as possible, patients will be taken from their home by ambulance direct to a cardiac centre for immediate diagnosis and treatment.
- 11.3 all four centres will provide primary angioplasty during the day – perhaps from 8.00 am to 8.00 pm.
- 11.4 two centres will be on call out of hours – Harefield and one of the other three centres who will be open as part of an agreed rota.
12. Work is now underway as follows –
- 12.1 clinicians and the trusts are working with the LAS to identify and agree a basis for providing primary angioplasty during the day and out of hours. This will include a basis for sharing on call between the three inner West London centres and developing workable rotas for clinicians and other cardiology staff.
- 12.2 trusts are working out the cost of running services on call.
13. If the Department of Health decides that North West London will be a pilot for this treatment response [and this seems very likely], the pilot will formally begin in April 2005. This means that practical arrangements will need to have been agreed and issues about costs resolved by March.

### **Tackling the problems as a sector**

- 14 Chief Executives agreed that patients with acute coronary syndrome should not have more than 48 hours to wait for access to diagnosis and treatment. This objective is strongly supported by clinicians from almost every acute hospital who have attended recent meetings, as a goal to work towards as quickly as possible.
- 15 Clinicians and managers have also agreed that –
- a sector-wide approach is essential if we are to manage the introduction of primary angioplasty and tackle delays in the treatment of acute patients:
  - existing arrangements between hospitals and cardiac centres should form the basis for organising services to provide rapid access for acute patients:
  - there should be a central system for sharing information about catheter laboratory capacity so that, for the relatively small number of acute patients who experience delays in gaining access to diagnosis and treatment, arrangements can be made for them to be taken to an alternative cardiac centre.
- 16 A clear work plan has emerged: -

### Clinical guidelines

- 16.1 clinicians differ in how they classify patients with acute coronary syndrome and how they decide the urgency with which patients need treatment. Cardiologists have agreed that they should adopt a consistent approach in assessing the risk of patients with acute coronary syndrome.
- 16.2 an assessment and risk assessment tool has been agreed as the basis for a North West London referral form and is now being amended to reflect comments from cardiologists. Once agreed this will need to be used by all hospitals when referring patients to a cardiac centre. It will ensure that all patients are assessed and referred to centres in an objective and equitable manner. The forms will be collected centrally for audit so that robust clinical information is available on all

acute patients seen within the sector. This will include individualised clinical risk, appropriateness of referral, patterns of referral and outcome measures. This information will enable a more detailed assessment to be made of the future requirements and changes which may need to be put in place across the sector to effectively manage non-elective cardiology admissions. The costs of collecting this information centrally can be funded in the first instance via cardiac modernisation monies, but alternative sources will need to be identified to sustain the process following evaluation at the end of a six month period.

### Cardiology capacity

- 16.3 As part of this process, clinicians also agreed that the sector should collect more detailed information from each of the centres about the number of available catheter laboratory slots each day for non-elective cardiology patients and the number of non-elective patients who actually underwent diagnosis/treatment in each centre on a daily basis. This will incorporate all catheter laboratory non-elective activity including angiography, angioplasty and pacing/device implants.

### Central arrangements

- 16.4 as mentioned above most local hospitals have in place robust inter-hospital transfer arrangements for acute patients. What seems quite clear, however, is that these arrangements need to be supplemented by a system for urgently transferring acute patients who cannot be seen within them.
- 16.5 with some reservations, clinicians and operational managers agree that a central mechanism for placing acute patients within a unit which can offer fast access to a catheter laboratory should be established quickly.
- 16.6 The detail of how this mechanism will work is now being agreed. The core of a mechanism is as follows –
- a. trusts provide up to date information about available capacity and beds;
  - b. the central co-ordinator will arrange a bed/catheter lab slot in a centre with capacity so that the transfer of the patient could be arranged quickly;
  - c. clinicians support the transfer of their patients to a cardiac centre with which they have no historic clinical links;
  - d. sensible arrangements for returning patients to their referring hospital once their procedure is completed and they are clinically ready to be moved. These mirror the existing arrangements that support inter-hospital treat and return transfers at some centres;
  - e. the funding of such transfers need to be quite clear and agreed by all PCTs and trusts.

### Costs and savings

17. In principle funding arrangements within service level agreements and as determined by the “payment by results” mechanism, should cover the costs of treating patients who need angiography and angioplasty whether on an emergency or planned basis. This includes the additional costs of treating elective patients within national waiting times, three months from April 2005. In practice trusts report issues about obtaining the level of funding required. Until there is a sector-wide process for commissioning these services

[Department of Health sees this as a Cardiac Network function, as it is already in some SHAs] there must be some agreed process for resolving funding issues.

18. The situation is complex for several reasons –
  - 18.1 North West London has the highest intervention rate for revascularisation in the country, though this does not approach the levels reached elsewhere in other developed countries. Managing patient demand and clinical need within existing revascularisation levels is difficult for PCTs.
  - 18.2 primary angioplasty has the effect of replacing the “planned” treatment of acute patients by their emergency care. There should be no additional costs for carrying the same procedures, but additional costs do arise for trusts in running 24 hour on call cardiology services, (particularly in ensuring that all staff groups providing this service are compliant with the EWTD).
  - 18.3 the impact of primary angioplasty and faster access to diagnosis and treatment for acute patients is to reduce the time patients stay in local hospital beds. This reduces costs for cardiology services, but trusts find it difficult or impossible to release this as savings because of other pressures they face, including increases in general emergency admissions. Savings can generally only be released where beds are closed.
19. The national pilots being set up by the Department of Health will evaluate the impact of primary angioplasty on cardiology services. It is already clear from work done in North West London that about half of the patients for whom primary angioplasty is appropriate are taken to a cardiac centre during the day and half out of hours. The evaluation in the sector will identify the impact of primary angioplasty on the treatment of patients requiring revascularisation. This includes the impact on the number of acute patients who wait in hospital for urgent diagnosis and treatment and on the number of bed days taken up by cardiology revascularisation patients. Both are expected to reduce.
20. In principle therefore, the introduction of primary angioplasty and action to speed acute patient access to diagnosis and treatment should have a major impact by lowering costs in local hospitals. The additional costs – of an on call system for primary angioplasty and of patient transfer for acute patients [which includes the transport costs and the cost of a nurse escort] - should be more than outweighed. The issue for the sector is how to meet the additional costs and to set savings against these costs.

### **Cardiac surgery**

21. Work that has been done to date has focussed on cardiology patients, since most of the service issues relate to access to catheter laboratory procedures. Discussions have, however, made it clear that there are problems in access for patients who require cardiac surgery. These problems include delays in access to surgery in a cardiac centre which result in patients having to wait in a hospital bed for longer than clinically appropriate. Again the issues are clinical risk, when patients have to wait longer than appropriate and the unnecessary use of beds in local hospitals.
22. One problem is the absence of agreed clinical protocols for preparing patients prior to transfer for surgery. These are essential if clinical time and resources are to be used in the most efficient way. Work has begun in some centres to develop such protocols. It would be sensible to support work that would lead to a consistent approach being taken

across North West London. Further work is needed to determine whether a central mechanism such as that proposed for speeding access to catheter laboratories is also necessary for patients awaiting cardiac surgery. Work also needs to be done to examine the feasibility of shared surgical waiting lists amongst the Consultants within the Cardiac Centres to ensure fair and equitable access to services.

### **Conclusions – Next Steps**

23. Chief Executives are invited to note the progress that has been made. The next stage of work will require the full, active support of all organisations and their clinicians. PCTs and acute trusts are therefore asked formally to endorse an approach that involves –
  - 23.1 setting up a sector-wide primary angioplasty service and organising cardiology and cardiac services for the sector as a whole to speed access for acute patients with the goal of achieving a maximum of 48 hours quickly:
  - 23.2 adopting a North West London-wide approach to planning cardiac capacity. This means that individual trusts and their PCT should not be developing a strategy in isolation from the wider sector strategy:
  - 23.3 developing a consistent basis for assessing the clinical risk of patients with acute coronary syndrome who are suitable for inter-hospital transfer for diagnosis and treatment and agreeing a referral form that all units must use:
  - 23.4 setting up a central mechanism for sharing information about catheter laboratory capacity as a basis for hospitals to arrange urgent patient transfers outside their normal arrangements when delays are otherwise likely to occur:
  - 23.5 supporting work to address issues about costs and savings on the basis that the introduction of primary angioplasty and providing faster access for patients with acute coronary syndrome are clinically necessary goals.

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### Cardiology activity and capacity in North West London

1. North West London has four cardiac centres [the Royal Brompton and Harefield Hospitals serve separate catchment populations and operate largely independently.] These centres serve both a resident population and the populations of a number of local hospitals around North West London. The Royal Brompton Hospital receives patients from even further afield.

#### CHD Capacity in North West London

3. There are a total of 12 catheter laboratories in operation across the sector as follows –

**Hammersmith Hospitals** – has 2 catheter laboratories. Also has a C Arm Image intensifier which is used to provide additional capacity when the main laboratories are under pressure. A third laboratory is due to be developed and opened during 2005.

**St Mary's Hospital** - 2 catheter laboratories currently working 5 days a week as well as on call. There is a mobile laboratory working 2 days a week, but this is only suitable for angiography. A third laboratory is due to be opened during 2005.

**Royal Brompton and Harefield Hospital** - 4 catheter laboratories at the Royal Brompton Hospital and 3 at Harefield Hospital.

**North West London Hospitals** - Northwick Park Hospital has 1 catheter laboratory. This is used for angiography and straightforward [less complex] angioplasty.

#### **Ealing Hospital**

Ealing has access to a Diagnostic Imaging Room for 3 days per week allowing them to undertake some angiography for their non-elective admissions. There are plans to develop a Catheter Lab via New Opportunities Funding during 2005.

Table 1: Overall NHS Hospital Activity

		2000 01	2001 02	2002 03
Angiography	Royal Brompton & Harefield	5,804	6,125	6,819
	Hammersmith	2,649	2,452	2,746
	St Mary's	1,813	1,444	1,299
	NWLHs	766	897	964
	Total	11,032	10,918	11,828
CABG	Royal Brompton & Harefield	1,525	1,522	1,371
	Hammersmith	662	590	555
	St Mary's	561	542	471
	Total	2,748	2,654	2,397
PTCA	Royal Brompton & Harefield	1,582	1,812	2,046
	Hammersmith	802	827	1,048
	St Mary's	822	921	814
	Total	3,206	3,560	3,908

Source: Hospital Episode Statistics HES 2 system Department of Health

**Table 2: Number and percentage of NHS hospital Trusts workload attributed to residents of North West London, 2000 01 to 2002 03**

		Hammersmith Hospital		Royal Brompton & Harefield		St Mary's		NWLHs	
Angiography	2000 01	1,900	71.7%	1,364	23.5%	948	52.3%	724	94.5%
	2001 02	1,585	64.6%	1,465	23.9%	900	62.3%	776	86.5%
	2002 03	1,697	61.8%	1,500	22.0%	834	64.2%	887	92.0%
Revascularisation	2000 01	855	58.4%	873	28.1%	757	54.7%		
	2001 02	790	55.8%	858	25.7%	733	50.1%		
	2002 03	919	57.3%	851	24.9%	732	57.0%		

Source: Hospital Episode Statistics HES 2 system Department of Health

Flow matrix tables of activity for the combined period 2000 01 – 2002 03 for revascularisation and angiography are shown on Tables 7 and 8 below.

**Table 3: Angiography activity flow table 2000 01 to 2002 03 combined**

LA of residence	Hammersmith Hospital	Royal Brompton & Harefield	St Mary's	NWLHs	Sub total	All Other NHS Trusts	Total
Brent	79	220	1,006	656	1,961	172	2,133
Ealing	2,608	245	177	181	3,211	262	3,473
Hammersmith and Fulham	716	329	33		1,078	107	1,185
Harrow	47	542	103	1,446	2,138	162	2,300
Hillingdon	162	1,720	33	86	2,001	60	2,061
Hounslow	1,427	223	23	11	1,684	341	2,025
Kensington and Chelsea	107	648	333	-	1,088	154	1,248
Westminster	36	402	974	-	1,412	343	1,756
North West London residents	5,182	4,329	2,682	2,380	14,573	1,601	16,181
Other London	554	2,691	319	161	3,725		
South East	1,809	5,447	174	6	7,436		
Eastern	77	4,970	882	55	5,984		
South West	31	449	23	3	506		
All Others	194	862	476	15	1,547		
<b>Total</b>	<b>7,847</b>	<b>18,748</b>	<b>4,556</b>	<b>2,627</b>	<b>33,778</b>		

Note: - (dash) indicates cells between with 1-5 have been suppressed together with the next smallest cell to provide a non disclosive table  
Source: Hospital Episode Statistics HES 2 system Department of Health

**Table 4: Revascularisation flow table 2000 01 to 2002 03 combined**

LA of residence	Hammersmith	Royal Brompton & Harefield	St Mary's	Total	All Other NHS Trusts	Total
Brent	47	281	774	1,102	109	1,211
Ealing	1,277	136	152	1,565	34	1,599
Hammersmith and Fulham	323	124	17	464	41	505
Harrow	29	715	321	1,065	160	1,225
Hillingdon	70	808	39	917	36	953
Hounslow	737	162	25	924	80	1,004
Kensington and Chelsea	54	225	228	507	71	578
Westminster	27	131	666	824	164	988
North West London residents	2,564	2,582	2,222	7,368	695	8,063
London	348	969	247	1,564		
South East	878	2,799	148	3,825		
Eastern	71	2,847	1,064	3,982		
South West	118	384	14	516		
Foreign (Incl. Isle Of Man & Chan	129	161	383	673		
All Others	376	116	53	545		
<b>Total</b>	<b>4484</b>	<b>9858</b>	<b>4131</b>	<b>18473</b>		

Source: Hospital Episode Statistics HES 2 system Department of Health