Training Programme Information for Posts in Cardiothoracic Surgery at ST3 Level

Recruitment 2012

This document has details of all of the training programmes in the UK/Eire/Scotland areas.

Entry requirements for all placements are in line with the Modernising Medical Careers Person specification which can be found on the MMC website: http://www.mmc.nhs.uk/ and the Applicant Guide.

Details of the full curriculum for Cardiothoracic Surgery ST3 can be found on the Intercollegiate Surgical Curriculum Programme (ISCP) website: https://www.iscp.ac.uk/Default.aspx

Further details will be available from your new employing organisation once you have accepted an offer of a post.

<table>
<thead>
<tr>
<th>East of England</th>
<th>East Midlands</th>
</tr>
</thead>
<tbody>
<tr>
<td>London (North Thames)</td>
<td>London (South Thames)</td>
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<tr>
<td>Northern</td>
<td>Northern and Northern Ireland</td>
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<tr>
<td>North West and Mersey</td>
<td>Scotland</td>
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<tr>
<td>Severn and Peninsula</td>
<td>Wales/West Midlands</td>
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<tr>
<td>Wessex/Oxford</td>
<td>West Midlands</td>
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<tr>
<td>Yorkshire and the Humber</td>
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</tbody>
</table>

Any information not included in this document should be available from specific deanery websites.
East of England

Deanery Rotation Base(s)

<table>
<thead>
<tr>
<th>HOSPITAL</th>
<th>LOCATION</th>
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<tbody>
<tr>
<td>PAPWORTH HOSPITAL</td>
<td>PAPWORTH, CAMBRIDGE</td>
</tr>
<tr>
<td>NORFOLK &amp; NORWICH UNIVERSITY HOSPITAL</td>
<td>NORWICH, NORFOLK</td>
</tr>
</tbody>
</table>

Deanery information

The East of England Deanery supports around 4,000 medical and dental serving a population of 5.6 million. We aim to inspire excellence in all our trainees to ensure our patients receive the highest standard of safe clinical care. The Deanery also maintains effective quality management of postgraduate medical and dental education and training, and promotes faculty development for our trainers.

EOE Deanery Map

Cardiothoracic Surgery in East of England Deanery

Rotation Information

The East of England Training Programme in Cardiothoracic Surgery rotates between:

- Papworth Hospital NHS Foundation Trust (*10 educationally-approved posts in Adult Cardiac Surgery, Thoracic Surgery & Cardiothoracic Transplantation*) and
- Norfolk & Norwich University Hospital (*2 educationally-approved posts in General Thoracic Surgery*).

Trainees are rotated between posts every 6 month on 1st January and 1st July. During the first 3 years of specialty training, each trainee generally spends (not necessarily in the following order):

- 18 months in Adult Cardiac Surgery at Papworth
- 6 months in General Thoracic Surgery at Norwich
- 6 months in General Thoracic Surgery at Papworth
- 6 months in Transplantation at Papworth

Exposure to congenital cardiac surgery is optional and could be arranged as a period of Out of Program Training (OOPT).

Trust Generic/Specialty Information

Papworth Hospital is the largest Cardiothoracic Centre in the United Kingdom, performing more than 2100 cardiac operations and 450 thoracic surgical procedures annually. There are 5 operating rooms, 32 Critical Care beds and a further 85 ward beds for the exclusive use by cardiothoracic surgery.
Surgical staff include:
  ● 14 Consultant Surgeons
  ● 8 Surgical StRs
  ● 5 Transplant StRs
  ● 1 National Cardiothoracic Transplant Senior Fellow
  ● 11 Surgical Care Practitioners
  ● 8 SHOs (Foundation Trainees or Core Trainees)

Patient services include:
  ● Adult cardiac surgery, specialist services include:
    o Surgical Maze procedure and Radiofrequency Maze procedure
    o Off-pump coronary artery bypass grafting (OPCAB)
    o Minimally invasive coronary artery bypass (MIDCAB)
    o Mini- sternotomy aortic valve replacement
    o Minimally invasive mitral valve surgery
    o Trans-catheter aortic valve insertion (TAVI)
  ● Pulmonary thrombo-endarterectomy (PTE) for chronic thromboembolic pulmonary hypertension
  ● Cardiopulmonary transplants including:
    o Ventricular Assist Devices as bridge-to-transplant
    o Cardiac and respiratory extra-corporeal membrane oxygenation (ECMO)
    o Ex-vivo lung perfusion (EVLP) for re-conditioning of donor lungs

Approximately 38% of the cardiac procedures and 15% of the thoracic surgical procedures are performed by the trainee or the middle grade doctor under direct supervision at Papworth. Apart from the surgical exposure and training, the trainees attend outpatient clinics for training, attend daily Consultant-led ward rounds on ITU when on call, and on most occasions present at the weekly cardiac case conference, attend the thoracic MDT and the daily In-House Urgent MDT.

There are 2 separate duty rotas - one for cardiothoracic surgery and the other for transplantation.

a) Cardiothoracic Surgery:
   1 in 8 or 9 rota that is EWTD compliant – full shift
b) Transplantation:
   1 in 5 on-call rota (non-resident): EWTD compliant.

Of the 14 posts, 9 are deanery funded and 11 are educationally- approved

Norfolk & Norwich University Hospital has the capacity to perform more than 1200 thoracic surgical and oesophageal procedures in a year. Depending on the experience of the trainee, up to 45% of thoracic surgical procedures are performed by the trainee under direct supervision. Apart from this, the StR gets the opportunity to attend clinics (2 per week per trainee), be exposed to patients on ITU and attend up to 5 MDTs a week, which include patients with lung cancer and GI pathologies.
Surgical staff include:

- 3 Consultant Thoracic Surgeons
- 3 Surgical StRs
- 2 SHOs (Foundation Trainees or Core Trainees)

One in three on call rota: EWTD compliant
Two StR posts are deanery funded and educationally approved

**Teaching**

All Consultant Surgeons are dedicated trainers, delivering curriculum-based training on a day-to-day basis.

- Steven Tsui is the Regional Training Program Director, an Examiner for the FRCS C-Th exam and member of the FRCS (CTh) exam question writing group
- David Jenkins is the RCS (Eng) College Tutor for Core Surgical Trainees, as well as a member of the FRCS (CTh) exam question writing group
- Stephen Large is the Clinical sub-Dean in charge of the medical student program at Papworth Hospital as well as a member of the FRCS (CTh) exam question writing group

Assigned Educational Supervisors (AES) include:

- Catherine Sudarshan
- Max Codispoti
- Suku Nair
- Filip van Tornout

**Hospital-based teaching programme**

- There is a weekly **Cardiac Case Conference** chaired in rotation by each Consultant Surgeon, where various topics are presented and discussed.
- There is a fortnightly **Journal Club**, where trainees select a paper for presentation and discussion, moderated by Consultant Surgeons in rotation
- There is a monthly There is a monthly **Regional Educational Program** based on the Intercollegiate Surgical Curriculum Project syllabus for Cardiothoracic Surgery to which all trainees in the rotation are required to attend. This is coupled with the monthly audit meeting, where cases are presented and discussed in a multi-disciplinary forum.
- There is a monthly **Transplant teaching meeting** and a separate monthly Transplant journal club.
- A **Formal Regional Wet-lab Training** is organised twice a year. This is held in one of the operating rooms in Papworth Hospital and attended by all trainees in the rotation (see inserted photographs)
Additional **Anatomical Wet-labs** are organized in Papworth and in the Anatomy department of the University of Cambridge.

**Trainee Support & Assessment**

In the East of England Cardiothoracic Surgical training programme, assessment of training and trainee progression is considered of paramount importance. As the trainee joins the programme, an Assigned Educational Supervisor (AES) is appointed by the Regional Training Programme Director (TPD). The AES to trainee ratio is not more than 1:3 at any time. Apart from the AES, Clinical Supervisors (CSs) are also allocated to the trainee as he/she rotate through the programme. There is constant interaction between the AES and CSs discussing the trainee performance and implementing changes that would improve training. AESs conducts feedback both ways between the CSs and the trainee.

Assessment of training and progress is an on-going process in our training rotation. The initial meeting between the trainee and the AES takes place within the first two weeks of taking up a post. At this meeting the training goals are agreed and are clearly documented. A trainee induction pack is handed over to the trainee as well. The AES and TPD will facilitate the trainee achieve these goals. The experience of the trainee is assessed by the AES at the initial meeting and this is communicated to the CSs so that they can optimise the individuals training.
Further meetings between the AES and trainee take place every fortnight, the duration of which is about 1 hour. Assessment of training during these meetings is strictly by monitoring workplace-bases assessments that the trainee has completed. PBAs, CBDs, SDOPS, mini-CEXs and mini-PAT are the assessment tools we use to assess training and progression. Logbooks are also reviewed at these meetings to assess out-patient clinic attendance and attendance of formal teaching sessions such as wet labs and presentations. A minimum of 20 WBAs (except mini-PAT) over each 6 months is considered the minimum required. Mini-PAT is conducted annually.

During the AES-trainee meetings, time spent in audit and research is also assessed. All trainees are expected to attend at least 1 Consultant-supervised clinic per week where they see both new and follow up patients. They are also encouraged to participate in departmental audit activities and research during their half a day per week protected time.

A formal interim meeting is conducted between the AES and the trainee to assess progression of training after 3 months in post. If performance of the trainee is not satisfactory, remedial steps are advised and enacted upon by the AES. A formal end-of-term final assessment is conducted towards the end of the 6 months’ training period. All trainees maintain a detailed portfolio (both electronic and paper-based) which is regularly reviewed by the AESs.

**GMC Annual Trainee Survey**

For the second year running, the Cardiothoracic Surgical Training programme in the East of England has obtained the highest score in the UK in “overall satisfaction”.

![Graph depicting various hospital trusts with scores]

Papworth Hospital NHS Foundation Trust
Royal Brompton and Harefield NHS Foundation Trust - Royal Brompton...
Guy’s and St Thomas’ NHS Foundation Trust
Imperial College Healthcare NHS Trust - Hammansworth Hospital and...
University Hospitals Birmingham NHS Foundation Trust - Queen...
Great Ormond Street Hospital For Children NHS Trust
Nottingham University Hospitals NHS Trust - Cey Campus
The Newcastle Upon Tyne Hospitals NHS Foundation Trust - Freeman...
University Hospitals Coventry and Warwickshire NHS Trust
University Hospitals Bristol NHS Foundation Trust - Bristol Royal Infirmary
Oxford Radcliffe Hospitals NHS Trust
East Midlands

Deanery Rotation Base(s)

<table>
<thead>
<tr>
<th>HOSPITAL</th>
<th>LOCATION</th>
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<tr>
<td>Glenfield Hospital</td>
<td>Leicester</td>
</tr>
<tr>
<td>City Hospital</td>
<td>Nottingham</td>
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</tbody>
</table>

This is a newly restructured programme based around the Cardiothoracic centres in Nottingham and Leicester under the East Midlands Deanery. This programme is approved for those trainees who wish to become a Specialist Thoracic surgeon, reflected in the internationally recognised higher training in thoracic oncology (lung, pleura and oesophagus)

The programme commences with 4 years in Core Cardiothoracic Surgery including an ITU module; an attachment in Congenital surgery and exposure to adult and paediatric ECMO. In addition there is wide exposure to basic adult thoracic and cardiac surgery. Our aim is to give unrivalled comprehensive preparation for the FRCS(CTh) exam.

In the 2012 Round we will be accepting two trainees.

Rotation Information

Training Program Director – David Waller, Consultant Thoracic Surgeon, Glenfield Hospital, Leicester.

Thoracic Training Faculty – John Duffy, Andrzel Majewski (Nottingham), Apo Nakas, Sri Rathinam (Leicester)

Cardiac Training Faculty – David Richens, Raj Jutley, Ian Mitchell (Nottingham), Prof Tom Spyt, Leon Hadjinikolau (Leicester)

Congenital/ECMO Training Faculty – Giles Peek, Attilio Lotto (Leicester)

Expected rotation arrangements for this programme are:

ST3 : 3 months ITU module (Intensive Care Society approved) in Leicester (supernumerary, supervised by Intensivist Dr Allsager, surgical on-call); 9 months basic cardiac surgery in Leicester (Mr Hadjinikolau)

ST4 : Basic pleuropulmonary surgery in Nottingham (Mr Majewski)

ST5 : 6 months intermediate adult cardiac surgery in Nottingham [Mr Richens, Mr Jutley]; 6 months Congenital cardiothoracic surgery/ECMO in Leicester [Mr Peek].

ST6 : Intermediate pleuropulmonary surgery in Leicester [Mr Waller, Mr Nakas]

These placements are discretionary based upon competency attainment and career progression

ST7 : Advanced oesophageal surgery in Nottingham [Mr Duffy]

Trust Generic/Specialty Information

Glenfield Hospital, University Hospitals of Leicester (UHL)

The Cardiothoracic Unit is sited at the Glenfield Hospital. UHL is a university teaching hospital affiliated with Leicester University Medical School. At present the Cardiac Surgical Unit has 49 surgical beds, 23 adult intensive care beds and 10 paediatric intensive care beds. There are five operating theatres. The Cardiothoracic Unit serves the southern half of the East Midlands SHA, which comprises a population of 2.8 million people. The Unit provides a comprehensive medical and surgical service for patients with cardiac and thoracic disease, including congenital heart disease, but excluding transplantation. The annual cardiac surgical workload comprises 1000 operations for acquired heart disease, 300 operations for congenital heart disease. 80 patients were treated at the regional unit for extra corporeal membrane oxygenation based at this hospital.

The Thoracic Surgical Unit has 22 beds including 5 integrated HDU beds. The full range of pleuropulmonary surgery is performed for Leicestershire, Northamptonshire, South Staffordshire and South Derbyshire together with national referrals for mesothelioma surgery. Annual workload comprises: 800 thoracic surgical procedures including 35 radical mesothelioma resections and 30 LVRS procedures. Over 15% of all major lung cancer resections are performed by VATS. Trainees carried out 60% of all lung cancer resections last year.

University Hospitals of Leicester NHS Trust - Glenfield Hospital:
Cardiac: 2 training posts, 1 in 7 resident rota (currently 1 LAT)
Congenital: 1 training post; supernumerary (currently 1 LAT)
Thoracic: 2 training posts, 1 in 5 non-resident rota (currently 1 NTN, 1 OOPT)

Nottingham University Hospitals, City Hospital Campus

Nottingham University Hospitals is a major provincial teaching hospital. There are 1207 beds on the City campus. The City Hospital provides a wide range of specialties but there is no Accident and Emergency Department on the campus. When current developments are completed, it will have over 1,400 beds, making it one of the largest hospitals in Europe. All these beds are located on one 85 acre campus, with outpatient facilities and all support services. The hospital employs 4,500 staff, deals with 55,000 inpatients per annum, including day patients, and over 180,000 outpatients per year.

There are several regional specialties: Cardiac Surgery, Thoracic Surgery, Renal Dialysis and Transplantation, Burns and Plastics, Cytogenetics and neonatal Medicine and Surgery.

Over 750 major thoracic operations are performed each year including 60 major oesophageal resections. Over 800 cardiac cases are performed each year through a 16 bedded critical care unit which is staffed by nurse practitioners allowing the trainee surgeons to run a non-resident on-call rota.
Nottingham University Hospitals NHS Trust – Nottingham City Hospital

**Cardiac**: 2 training posts, 1 in 5 rota. *(currently 2 LATs)*  
**Thoracic**: 2 training posts, 1 in 5 non-resident rota *(currently 1 ST3, 1 LAT)*

**Teaching**

In addition to the local MDTS and weekly departmental teaching sessions the rotation has an organized, comprehensive regional teaching program including a biannual Midlands Cardiothoracic Surgical Meeting which encompasses hands-on training and abstract competitions.

Below is an example of the program:

East Midlands Regional Teaching Programme 2010/11

<table>
<thead>
<tr>
<th>Date</th>
<th>Organizer</th>
<th>Venue</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>September 2010</td>
<td>S Rathinam</td>
<td>Sept 3rd Glenfield Hospital CEC</td>
<td>Midlands Cardiothoracic Surgical Meeting</td>
</tr>
<tr>
<td>October 2010</td>
<td>G Peek</td>
<td>Nov 5th Glenfield Hospital CEC</td>
<td>Congenital Cardiothoracic Surgery</td>
</tr>
<tr>
<td>November 2010</td>
<td>R Jutley</td>
<td>Dec 3rd City Hospital, Nottingham</td>
<td>Cardiac Surgical wetlab – coronary anastomosis</td>
</tr>
<tr>
<td>January 2011</td>
<td>D Richens</td>
<td>Jan 14th City Hospital, Nottingham</td>
<td>Cardiothoracic Trauma</td>
</tr>
<tr>
<td>February 2011</td>
<td>A Nakas</td>
<td>Glenfield Hospital</td>
<td>Surgery for mesothelioma</td>
</tr>
<tr>
<td>March 2011</td>
<td>A Majewski</td>
<td>March 4th West Midlands</td>
<td>Midlands Cardiothoracic Surgical Meeting</td>
</tr>
<tr>
<td>March 2011</td>
<td>A Majewski</td>
<td>City Hospital, Nottingham</td>
<td>The principles of lung cancer surgery</td>
</tr>
<tr>
<td>April 2011</td>
<td>J Duffy</td>
<td>April 8th City Hospital, Nottingham</td>
<td>Oesophagaeal surgery</td>
</tr>
<tr>
<td>May 2011</td>
<td>L Hadjinikolau</td>
<td>Glenfield Hospital</td>
<td>Aortic surgery</td>
</tr>
<tr>
<td>June 2011</td>
<td>A Martin Ucar</td>
<td>City Hospital, Nottingham</td>
<td>Surgery of the airways</td>
</tr>
<tr>
<td>July 2011</td>
<td>D Waller</td>
<td>Glenfield Hospital</td>
<td>The role of surgery in emphysema</td>
</tr>
</tbody>
</table>
Summary

The East Midlands offers a compact, comprehensive training program by a closely co-ordinated committed faculty. We have an almost perfect record in our trainees passing the FRCS(CTh) exam first time and have placed 9 of our last 10 CCT holders into Consultant posts. We accept that training a general cardiothoracic surgeon is no longer feasible and will aim to train Consultants with highly developed specialist interests.
London (North Thames)

Deanery Rotation Base(s)

<table>
<thead>
<tr>
<th>HOSPITAL</th>
<th>LOCATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Royal Brompton</td>
<td>Sydney Street, SW3 6NP</td>
</tr>
<tr>
<td>Imperial (Hammersmith)</td>
<td>Du Cane Road, W12 0HS</td>
</tr>
<tr>
<td>Imperial (St Mary’s)</td>
<td>Praed Street, W2 1NY</td>
</tr>
<tr>
<td>London Chest Hospital</td>
<td>Bonner Rd, E2 9JX</td>
</tr>
<tr>
<td>Great Ormond Street</td>
<td>Bloomsbury, WC1N 3JH</td>
</tr>
<tr>
<td>The Heart Hospital</td>
<td>Westmoreland Street, W1G 8PH</td>
</tr>
<tr>
<td>Harefield</td>
<td>Hill End Road, Harefield</td>
</tr>
<tr>
<td>St Bartholomew’s</td>
<td>West Smithfield, EC1A 7BE</td>
</tr>
</tbody>
</table>

Cardiothoracic training in London has undergone significant changes over recent years brought about by enthusiastic and committed trainers and supported by the London Deanery and STC at all levels. The North and South Thames programmes facilitate access to all areas in the London region, allowing for a comprehensive training experience over a very wide range of surgical and academic options. London has an established excellence for training amongst junior doctors, as was shown by 6 out of the top 9 NTN appointments last year choosing this as their top preference.

Rotation Information

Training is delivered at local level by designated education supervisors and overseen and coordinated by an elected group of trainers consisting of the following:

Programme Director               Mr Alex Shipolini
                                    London Chest Hospital

Deputy Programme Director         Mr Richard Trimlett
                                    The Royal Brompton Hospital

Head of School of Surgery         Professor Nigel Standfield
                                    London Deanery

Chair of STC                      Mr EEJ Smith
                                    St George’s Hospital

The North Thames Programme offers a complete range of cardiac and thoracic operations in all 6 adult care hospitals. Interests in aortic/arch work, mitral valve repairs, TAVI and EVAR, OPCAB and mini bypass allow for specialist training. Thoracic surgical experience ranges from major anatomical lung resections to VATs procedures, mesothelioma surgery to endobronchial stenting with laser and cryo cancer management. Paediatric cardiac surgery can be experienced at two sites and paediatric thoracic surgery including specialist tracheal resection and reconstruction work is performed at GOS. Cardiac and pulmonary transplantation is available at Harefield and together with the Brompton, both sites offer LVAD and ECMO mechanical support programmes. All institutions have established academic
programmes with access to clinical and basic sciences facilities. Trainees can choose to undertake a period of formal research leading to a higher degree or they can engage with existing clinical, science or audit projects. Encouragement and assistance is given to the trainees to submit work for presentations and publications, forming part of their annual evaluation.

A curriculum based Pan Thames education programme is now established, where NTNs and other interested trainees receive dedicated consultant lead teaching using lectures, interactive sessions, wetlabs and simulators. The programme also incorporates two regular cardiothoracic RSM meetings per year, where invited international speakers discuss the latest topics. A senior thoracic programme is being set up for dedicated ST7/8 trainees who have passed the exit FRCS exam and are looking for specialist thoracic training prior to CCT. This will rotate through all the recognized thoracic centres in London and also invite the Basildon cardiothoracic centre which can provide high volume mesothelioma surgery. It is envisaged to have one trainee per annum appointed through a competitive interview process and open to all national trainees.

The NTNs are provided with education contracts at the start of their rotation and progress is monitored and logged using the ISCP web site. There are 3 annual London STC meetings including representatives from the SAC and trainees. Standards are maintained through regular ARCP/RITA interviews but trainees are also encouraged to have more informal discussions with their supervisors to ensure that personal training and development is discussed. This allows for appropriate matching of trainers with trainees to be made so that optimum training experience is attained. If focused training is required, a meeting is convened between the trainee, TPD and trainer and a suitable plan is formulated. A policy exists in North Thames to facilitate for ST7/8 trainees to be excluded from the routine on-call commitments so to maximise training prior to CCT. Specialist experience in EVAR and aortic hybrid surgery is available at the Heart and The Royal London, heart/lung transplantation at Harefield, Level 3 trauma experience at The London and St Mary’s, angio and echo simulators with regular TOE courses at the London Chest and the Heart.

The London School of Surgery regularly visits and assesses the hospitals with Core and Specialist Trainees. The trainees are interviewed and encouraged to comment anonymously on their training opportunities within the programme. The visit also looks at IT and library access and checks for EWDT compliance. A report is compiled and sent to the Chief Executive, detailing the findings and suggesting changes or giving commendations. Funding from the Deanery is discretionary and may be withdrawn if standards are not met.

North Thames currently has a total of 14 NTNs. It remains the firm conviction of all the trainers to continue improving and expanding the programme while maintaining the high standards required to train the next generation of cardiothoracic surgeons.

Training jobs in North Thames:

<table>
<thead>
<tr>
<th>Hospital</th>
<th>Current No. of NTNs</th>
<th>Approved No. of NTNs</th>
<th>Current No. of CT1/2s</th>
<th>Approved No. of CT1/2s</th>
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North Thames has 3 separate core training programmes overseen by the Deanery. These are general surgical rotations which offer 4 month stints at CT1 or 6 month stints at CT2 in cardiothoracic surgery. There is no ST run through option. These placements are often over subscribed as the trainees recognise the good surgical experience on offer, a chance to get ITU management experience and the general enthusiasm for teaching by the trainers. The hospitals currently having core trainees include Barts, London Chest, Royal Brompton, Harefield and Hammersmith.

**Non NTN clinicians:**

<table>
<thead>
<tr>
<th>Hospital</th>
<th>Clinical Fellow</th>
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<th>SCP</th>
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* SCPs in training

**Core trainee data:**

North Thames has 3 separate core training programmes overseen by the Deanery. These are general surgical rotations which offer 4 month stints at CT1 or 6 month stints at CT2 in cardiothoracic surgery. There is no ST run through option. These placements are often over subscribed as the trainees recognise the good surgical experience on offer, a chance to get ITU management experience and the general enthusiasm for teaching by the trainers. The hospitals currently having core trainees include Barts, London Chest, Royal Brompton, Harefield and Hammersmith.

**Trust Generic/Specialty Information**
Learning opportunities in the region:

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<th>Education opportunities for NTNs</th>
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<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Flexible training</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
</tbody>
</table>

Cardiac Training:

<table>
<thead>
<tr>
<th>Hospital</th>
<th>Total</th>
<th>Other</th>
<th>CABG All</th>
<th>CABG Trainee</th>
<th>AVR All</th>
<th>AVR Trainee</th>
<th>MVR All</th>
<th>MVR Trainee</th>
<th>CABG+Valve All</th>
<th>CABG+Valve Trainee</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barts and London Chest</td>
<td>1163</td>
<td>93</td>
<td>718</td>
<td>287 (40%)</td>
<td>135</td>
<td>21 (16%)</td>
<td>78</td>
<td>8 (10%)</td>
<td>139</td>
<td>18 (13%)</td>
</tr>
<tr>
<td>Brompton</td>
<td>757</td>
<td>24</td>
<td>435</td>
<td>186 (43%)</td>
<td>155</td>
<td>40 (26%)</td>
<td>67</td>
<td>2 (3%)</td>
<td>76</td>
<td>13 (17%)</td>
</tr>
<tr>
<td>Hammersmith</td>
<td>900</td>
<td>77</td>
<td>552</td>
<td>50 (10%)</td>
<td>147</td>
<td>10 (7%)</td>
<td>66</td>
<td>0 (0%)</td>
<td>58</td>
<td>2 (4%)</td>
</tr>
</tbody>
</table>
These figures represent cases performed by trainee as first operator.

All trainees will operate or assist in 100% of allocated theatre time. They will perform a part of the operation in 91% of all cases e.g. open, close, IMA etc.

The numbers can vary significantly with the level of experience amongst the trainees. The Hammersmith figures are skewed by an NTN being present for only 6 months in the year and the rest of the trainees being junior.

**Thoracic training:**

Total number of thoracic cases for North Thames as detailed:

<table>
<thead>
<tr>
<th>Total Thoracic work</th>
<th>Hospital</th>
<th>Lung resections pneumonec tomy - lobectomy - wedge - mets</th>
<th>VATs</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>All Trainee</td>
<td>All Trainee</td>
<td></td>
</tr>
<tr>
<td>389</td>
<td>Barts and London Chest</td>
<td>86 (58%)</td>
<td>73 (61%)</td>
<td>230</td>
</tr>
<tr>
<td>991</td>
<td>Brompton</td>
<td>274 (34%)</td>
<td>53 (43%)</td>
<td>664</td>
</tr>
<tr>
<td>355</td>
<td>Hammersmith</td>
<td>39 (31%)</td>
<td>126 (55%)</td>
<td>226</td>
</tr>
<tr>
<td>1220</td>
<td>Harefield</td>
<td>214 (71%)</td>
<td>286 (65%)</td>
<td>720</td>
</tr>
<tr>
<td>681</td>
<td>Heart</td>
<td>220 (37%)</td>
<td>337 (51%)</td>
<td>124</td>
</tr>
<tr>
<td>3636</td>
<td></td>
<td>833 (45%)</td>
<td>875 (57%)</td>
<td>1924 (63%)</td>
</tr>
</tbody>
</table>

Other procedures include: endoscopy, thymectomy, decortication, lung transplant, endobronchial stents, pectus repairs, trauma, lung volume reduction and chest wall reconstruction.

**Barts and The London NHS Trust (BLT)**
General: BLT is composed of Barts and the London Chest hospitals. There are a total of 9 consultants working between the two sites. Being part of the same Trust allows for easy interchange of staff so training opportunities can be optimised. The work comprises of adult cardiac and thoracic surgery with interests in aortic/arch, TAVI, mitral valve repair, VATS, chest wall reconstruction and some mesothelioma surgery. The Royal London offers a Level 3 casualty department with a dedicated trauma team and cardiothoracic trainees are frequently involved with chest trauma.

Monthly audit and training days are held jointly where consultants and trainees interact over teaching and training issues. Weekly curriculum based teaching at the London Chest is commended by the trainees (ref Appendix 1 and 2). Regular cardiac and thoracic MDTs take place weekly and the trainees are encouraged to see new and follow up patients in clinics. TOE and angio simulators are available at the London Chest and wet labs are organised as part of pan Thames training or local education events on both sites. In 2014 both hospitals will merge into one new block at the Barts site. This will consolidate training experience for both NTN and non NTN doctors allowing for a more efficient on-call arrangements which will further improve surgical time for trainees.

### Barts and The London NHS Trust

<table>
<thead>
<tr>
<th>Cardiac Procedures</th>
<th>Number performed</th>
<th>Trainee as first operator (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CABG only</td>
<td>718</td>
<td>237 (33%)</td>
</tr>
<tr>
<td>CABG + Valve</td>
<td>139</td>
<td>18 (13%)</td>
</tr>
<tr>
<td>CABG + Valve + Other</td>
<td>15</td>
<td>1 (7%)</td>
</tr>
<tr>
<td>CABG + Other</td>
<td>13</td>
<td>1 (8%)</td>
</tr>
<tr>
<td>AVR</td>
<td>135</td>
<td>18 (13%)</td>
</tr>
<tr>
<td>MVR</td>
<td>73</td>
<td>8 (11%)</td>
</tr>
<tr>
<td>TAVI</td>
<td>38</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>Other</td>
<td>33</td>
<td>4 (10%)</td>
</tr>
<tr>
<td>Overall</td>
<td>1071</td>
<td>266 (25%)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sub-procedures</th>
<th>% performed by trainees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sternotomy</td>
<td>86</td>
</tr>
<tr>
<td>LIMA harvest</td>
<td>85</td>
</tr>
<tr>
<td>Aortic cannulation</td>
<td>69</td>
</tr>
<tr>
<td>Top end</td>
<td>42</td>
</tr>
<tr>
<td>Bottom ends</td>
<td>35</td>
</tr>
<tr>
<td>Chest closure</td>
<td>91</td>
</tr>
</tbody>
</table>

### Thoracic Procedures

<table>
<thead>
<tr>
<th>Thoracic Procedures</th>
<th>No.</th>
<th>Trainee</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pneumonectomy</td>
<td>10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lobectomy</td>
<td>67</td>
<td>52</td>
<td>58%</td>
</tr>
</tbody>
</table>
Other higher surgical trainees: There are currently 7 non NTN registrars on each site. A further research registrar is available to cover nights and weekends on both sites. The registrars have currently jointly opted out of the EWTD and all agreed to training run at 2A band rota. This has allowed for more theatre time and better continuity of care. However, there is current pressure from senior Trust management to be compliant with a 48 hrs week. If this is implemented it will require 10 registrars per site, the consultants involved with training and education have affirmed that at this stage the current NTNs will be taken out of the registrar rota and will have their training time protected.

Junior staff: There are a total of up to 4 CT1/2 places between Barts and the London Chest. The allocation is decided internally with free choice given to the trainees. The London Chest rota is composed of 4 surgical CT/SHOs, 4 medical SHOs and 6 Surgical Care Practitioners (SCPs) shared between both sites. The SCPs are currently in training but are expected to be qualified within 2 years. Their role is to help with training of CT doctors in vein harvesting and other basic surgical procedures, provide ward and clinic cover and be part of the on-call at night. This has allowed for a much better theatre time allocation for the surgical trainees.

Other information: There are monthly joint training days and each institution has a weekly teaching sessions. Wet lab sessions occur at the London Chest with the presence of at least one consultant as a mentor. The junior trainees are encouraged to complete at least one audit and submit a publication during their stay. Both sites have junior doctor offices with internet access and printers. Study leave is given for attendance of appropriate courses, meetings and examinations.

Trauma – The Royal London has a Level 3 Trauma centre allowing senior trainees to be involved. Completion of the DSTS course at the RCS forms part of the required training.

Research options exist at the Charterhouse site where a new Heart Research Centre has just been completed. A number of previous trainees have obtained higher degrees from this institute.

The Heart Hospital

General: The Heart has developed greatly over the past two years as confirmed by a recent Deanery visit. The consultant numbers have been increased with two new appointments and its reputation as a leading research institution firmly re-established by the addition of Professor Chris McGregor previously Chief at Mayo Clinic. The hospital provides adult cardiac and thoracic work. There is a developing endovascular work in collaboration with UCL, a large HOCM work load, a recently started TAVI programme and a regular GUCH list by a visiting congenital surgeon.
There is a strong VATs thoracic interest and several regional thoracic MDTs available to trainees. Research and development is well supported and now driven by Professor McGregor, this is backed up with the close and long standing academic links with the world renowned Hatter Institute at UCL.

<table>
<thead>
<tr>
<th>Cardiac Procedures</th>
<th>Number performed</th>
<th>Trainee as first operator (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CABG only</td>
<td>470</td>
<td>218 (46%)</td>
</tr>
<tr>
<td>CABG + Valve</td>
<td>109</td>
<td>27 (25%)</td>
</tr>
<tr>
<td>GUCH</td>
<td>53</td>
<td>3 (6%)</td>
</tr>
<tr>
<td>Complex</td>
<td>57</td>
<td>6 (11%)</td>
</tr>
<tr>
<td>AVR</td>
<td>216</td>
<td>76 (35%)</td>
</tr>
<tr>
<td>MVR</td>
<td>105</td>
<td>25 (24%)</td>
</tr>
<tr>
<td>TAVI</td>
<td>12</td>
<td>0</td>
</tr>
<tr>
<td>Total:</td>
<td>1083</td>
<td>355 (33%)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Thoracic Procedures</th>
<th>No.</th>
<th>Trainee</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pneumonectomy</td>
<td>3</td>
<td>82</td>
<td>37%</td>
</tr>
<tr>
<td>Lobectomy</td>
<td>82</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wedge resection</td>
<td>135</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VATs</td>
<td>337</td>
<td>172</td>
<td>51%</td>
</tr>
<tr>
<td>Total</td>
<td>557</td>
<td>254</td>
<td>46%</td>
</tr>
</tbody>
</table>

**Educationally approved places:** There are a total of 3 Deanery educationally approved places. The Heart have 1 NTN, Kelvin Lim who has attained CCT and is getting further specialist experience in EVAR and aortic work (*Appendix 2*). The post CCT post is excluded from the normal on-call rota to maximize training time.

**Other higher surgical trainees:** There are further 8 registrars participating in the rota which makes it EWTD compliant.

**Junior staff:** Currently there are no Core trainees at the Heart but there is considerable interest from UCL.

**Other information:** IT support includes access to multiple computers, desk space in dedicated study room and access to electronic journals at the RSM. There are weekly teaching sessions covering curriculum based topics. A “Masterclass” bimonthly event is being set up where local trainees are invited to attend teaching on specified topics utilising the availability of wet lab and simulator facilities.

**EVAR** – The endovascular programme has flourished to a point where it is attracting national and international interest.

Imperial (comprising Hammersmith and St Mary’s)
**General:** Hammersmith hospital is now part of Imperial College and last year amalgamated with St Mary,s. With the addition of two extra consultants including Professor Angelini from Bristol, it has become one of the biggest units in London. The centre offers full range of adult and thoracic surgery with specialist interests in mini bypass, OPCAB, minimally invasive surgery including robotics and a TAVI programme.

<table>
<thead>
<tr>
<th>Cardiac Procedures</th>
<th>Number performed</th>
<th>Trainee as first operator (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CABG only</td>
<td>552</td>
<td>50 (9%)</td>
</tr>
<tr>
<td>CABG + Valve</td>
<td>58</td>
<td>2 (4%)</td>
</tr>
<tr>
<td>Complex</td>
<td>69</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>AVR</td>
<td>147</td>
<td>10 (7%)</td>
</tr>
<tr>
<td>MVR</td>
<td>66</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>TAVI</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>Total:</td>
<td>907</td>
<td>62 (7%)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Thoracic Procedures</th>
<th>No.</th>
<th>Trainee</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pneumonectomy</td>
<td>1</td>
<td>12</td>
<td>31%</td>
</tr>
<tr>
<td>Lobectomy</td>
<td>23</td>
<td>70</td>
<td>55%</td>
</tr>
<tr>
<td>Wedge resection</td>
<td>15</td>
<td>70</td>
<td></td>
</tr>
<tr>
<td>VATs</td>
<td>126</td>
<td>70</td>
<td>55%</td>
</tr>
<tr>
<td>Total</td>
<td>165</td>
<td>82</td>
<td>50%</td>
</tr>
</tbody>
</table>

**Junior staff:** There are 2 CT1/2 positions and 4 FY2 placements. Help and encouragement is given to all the trainees in a supportive and academically very active environment.

**Other information:** There are ample opportunities for trainees to see new patients in the weekly cardiothoracic surgery clinics. The clinics contain a variety of pathology and are an excellent environment for teaching and assessment in the form of case based discussions. Trainees are expected to see new patients and discuss management with their consultant. There are two doctors offices – one on the CICU and one on ward. The trainees have access to IT facilities within the Imperial College Healthcare NHS Trust as well as Imperial College London facilities within the Imperial College Hammersmith campus library.

Weekly teaching programme on Friday mornings is designed to cover the entirety of the cardiothoracic surgery syllabus. Talks are given by visiting lecturers and also by junior staff. The Hammersmith Hospital has hosted several wet labs in the past and in fact was one of the earliest supporters of the Wet Lab project (please see website for letters of support). The trust has recently developed a surgical skills lab in the postgraduate department. This has laparoscopic simulators, mainly for general surgeon and gynaecologists but also has potential to be used for thoracoscopic training. We are hoping to use these facilities to setup wet lab skills stations for CT/ST trainees.
There is a weekly Joint Cardiology-Cardiac (JCC) conference at the Hammersmith Hospital. Trainees are given numerous opportunities to attend weekly thoracic MDTs at Hammersmith, St.Mary’s, West Middlesex and Ealing Hospitals.

**Intensive Care** - One of the great strengths of the Hammersmith Cardiothoracic surgery training is the exposure and experience of managing the surgeon led cardiothoracic intensive care unit. Hammersmith is in a unique position to offer excellent intensive care experience for junior (ST3-6) trainees.

**Minimally invasive surgery** - With the recent appointment of Mr Marco Solinas, for minimal access mitral surgery, there are excellent opportunities for all trainees to be exposed to this novel technique. In addition with the presence of leading mitral valve surgeon, Mr Punjabi and the volume of over 100 mitral valve procedure performed annually, the Hammersmith would be an excellent place for a senior pre or post CCT trainees to develop their interest in mitral valve surgery.

**Trauma** - The recent designation of St. Mary’s Hospital as a Major Trauma centre for London and South East will increase the exposure of trainees to the management of thoracic trauma. There is a newly developed trauma ward and cardiothoracic trainees will be part of the full trauma team, under the supervision of a Trauma Consultant at St. Mary’s.

**Academia** - The Hammersmith Hospital has a very strong track record and worldwide reputation for high quality cardiac surgery research. Imperial College Healthcare NHS Trust was the UK’s first Academic Health Sciences centre and represents one of the country’s leading cardiovascular research units. The academic profile of the unit has been strengthened by the recent appointment of Professor Giani Angelini from Bristol. There are close ties with Imperial College and the National Heart and Lung Institute, Cardiovascular Sciences Division headed by Professor Dorian Haskard. A new cardiovascular sciences block for the NHLI is being built on the Hammersmith site which will further enhance the excellent environment for translational research. A new large animal facility has also been constructed which will enable translational research using porcine models which will be an excellent opportunity for surgical trainees considering research projects for higher degrees. The academic cardiac surgery unit at the Hammersmith has a long tradition of training many generations of cardiothoracic surgery trainees and we aspire to continue to attract the brightest and most talented surgeons.
Harefield Hospital

**General:** Harefield enjoys a worldwide reputation as a leader in transplantation and innovation in cardiothoracic surgery. It offers the full range of adult cardiac and thoracic procedures and is the only institution in London to have a heart and lung transplant programme. There is a separate thoracic department with a high throughput of activity with interest in endobronchial work. Other areas of interest include OPCAB and minimally invasive cardiac surgery. There is a well established research unit with a large basic sciences lab.

<table>
<thead>
<tr>
<th>Cardiac Procedures</th>
<th>Number performed</th>
<th>Trainee as first operator (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CABG only</td>
<td>498</td>
<td>240 (48%)</td>
</tr>
<tr>
<td>CABG + Valve</td>
<td>254</td>
<td>23 (21%)</td>
</tr>
<tr>
<td>Complex</td>
<td>66</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>AVR</td>
<td>165</td>
<td>34 (7%)</td>
</tr>
<tr>
<td>MVR</td>
<td>59</td>
<td>3 (5%)</td>
</tr>
<tr>
<td><strong>Total:</strong></td>
<td><strong>928</strong></td>
<td><strong>60 (32%)</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Thoracic Procedures</th>
<th>No.</th>
<th>Trainee</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pneumonectomy</td>
<td>9</td>
<td>137</td>
<td>71%</td>
</tr>
<tr>
<td>Lobectomy</td>
<td>117</td>
<td>241</td>
<td>83%</td>
</tr>
<tr>
<td>Wedge resection</td>
<td>88</td>
<td>659</td>
<td>91%</td>
</tr>
<tr>
<td>VATs</td>
<td>286</td>
<td>241</td>
<td>83%</td>
</tr>
<tr>
<td>Other</td>
<td>720</td>
<td>659</td>
<td>91%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1220</strong></td>
<td><strong>1037</strong></td>
<td><strong>85%</strong></td>
</tr>
</tbody>
</table>

Some of the other procedures:

- Thymectomy 6
- Lung transplant 43
- Decortications 35
- Pectus repair 5
- LVRS 5
- Endobronchial cryo 98
- Endobronchial stent 38

**Educationally approved places:** There are 2 Deanery approved thoracic posts but the evidence suggests that there is ample opportunity for cardiac training. The rota is non resident and EWTD compliant.

**Other higher surgical trainees:** There are 3 thoracic registrars who are non resident, the rest cover the cardiac and transplant side.

**Junior staff:** The SHO rota has 1 CT1 post as part of the general surgical rotation. The rest of the SHO rota is covered by trust grade doctors and two SCPs.
Other information: Regular teaching meeting include weekly journal club in cardiac and thoracic surgery, weekly X-ray teaching meeting, weekly teaching thoracic MDT and option for 2 further MDTs out of region. There are 6 teaching ward rounds weekly, 2 each for each thoracic trainee and 1 clinic weekly per thoracic trainee with on the spot training and assessments by the consultant.

There is an excellent library on site with access to Medline and OVID. Links with Mount Vernon and Imperial allow for both thoracic and cardiac based research to be carried out.

Funding has been obtained for a new training centre which will allow regular teaching/wet labs/simulators in both cardiac and thoracic surgery along with chest medicine.

The Royal Brompton

General: The Brompton has a long established reputation as a cardiothoracic institution of excellence. It offers all adult cardiac and thoracic procedures plus paediatric cardiac surgery and interests in aortic/arch procedures, MV repair, robotic and minimally invasive surgery. The research options have improved even more with the Brompton joining Imperial College.

<table>
<thead>
<tr>
<th>Cardiac Procedures</th>
<th>Number performed</th>
<th>Trainee as first operator (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CABG only</td>
<td>435</td>
<td>186 (43%)</td>
</tr>
<tr>
<td>CABG + Valve</td>
<td>76</td>
<td>13 (19%)</td>
</tr>
<tr>
<td>Complex</td>
<td>24</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>AVR</td>
<td>155</td>
<td>40 (26%)</td>
</tr>
<tr>
<td>MVR</td>
<td>67</td>
<td>2 (3%)</td>
</tr>
<tr>
<td><strong>Total:</strong></td>
<td><strong>757</strong></td>
<td><strong>241 (32%)</strong></td>
</tr>
<tr>
<td>LIMA</td>
<td>450</td>
<td>355 (79%)</td>
</tr>
<tr>
<td>Radial Artery</td>
<td>38</td>
<td>32 (84%)</td>
</tr>
<tr>
<td>Sternotomy</td>
<td>546</td>
<td>425 (78%)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Thoracic Procedures</th>
<th>No.</th>
<th>Trainee</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pneumonectomy</td>
<td>7</td>
<td>68</td>
<td>25%</td>
</tr>
<tr>
<td>Lobectomy</td>
<td>121</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wedge resection</td>
<td>29</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Metastectomy</td>
<td>117</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VATs</td>
<td>53</td>
<td>23</td>
<td>43%</td>
</tr>
<tr>
<td>Other</td>
<td>644</td>
<td>417</td>
<td>67%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>991</strong></td>
<td><strong>346</strong></td>
<td><strong>27%</strong></td>
</tr>
</tbody>
</table>
**Educationally approved places:** The Brompton has 5 Deanery approved posts with 3 NTNs presently in place. The system has a separate on-call thoracic rota who are nonresident. The cardiac rota is 3 tiered with 3 “senior” registrars, 2 NTN and 1 FTTA who are nonresident, supported by 8 resident registrars. The rota is EWTD compliant.

**Junior staff:** The Brompton has 8 approved CT1/2 places as part of the general surgical rotation, currently 3 are vacant. Further support is provided by 3 SCPs.

**Other information:** The Brompton runs regular wet lab sessions under Mr Trimlett’s supervision and further theatre simulator experience is available at St George’s. Weekly teaching sessions and journal clubs are organised by the senior trainees. Thoracic and cardiac MDTs occur weekly in house and there are further options out of the region.

International meeting on Aortic Surgery and TAVI have been organized by Professor Pepper, Mario Petrou and Neil Moat.

4 trainees have completed higher degrees over the last 3 years and two more are currently engaged with PhDs.

**Teaching**

**Curriculum based Pan Thames Education Programme 2011-12**

RSM Valve Symposium  
18-19 November 2010

Mitral Valve Disease – London Chest Hospital  
Monday 13 December 2010

Ischaemic Heart Disease – King’s College London  
Friday 28 January 2011

STCS Meeting  
London 20-22 March 2011

Case based scenario day - London Chest Hospital  
Tuesday 26 April 2011

RSM Meeting Friday 24 June 2011

Simulator clinical training – St George’s Hospital  
Friday 29 July 2011

Aortic Surgery (Thoraco abdominal) – St Thomas’ Hospital  
Friday 16 September 2011
Lung Cancer (Diagnosis and Management) – Brompton
Friday 28 October 2011

RSM Meeting November 2011

Perfusion Workshop – Hammersmith
Friday 11 December 2011

Mesothelioma / Chest Wall Surgery / Tests – Guy’s
Friday 27 January 2012

Aortic Valve Disease and Aortic Dissection - London Chest Hospital
Monday 12 March 2012

STCS and ACTA joint meeting Manchester
April 2012

Benign Thoracic Disease – Harefield
Friday 1 June 2012

**Academic activity:**

<table>
<thead>
<tr>
<th>Hospitals</th>
<th>Academic leads</th>
<th>Associated Institutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barts and London Chest</td>
<td>Prof A Timmis – cardiology</td>
<td>Charterhouse</td>
</tr>
<tr>
<td></td>
<td>Prof R Schilling – electrophysiology</td>
<td>Cardiovascular Science</td>
</tr>
<tr>
<td></td>
<td>Prof A Mathur – stem cells</td>
<td>Queen Mary University</td>
</tr>
<tr>
<td></td>
<td>Prof T Warner – basic science</td>
<td></td>
</tr>
<tr>
<td>Heart</td>
<td>Prof C McGregor - clinical</td>
<td>UCL</td>
</tr>
<tr>
<td></td>
<td>Prof D Yellon – basic science</td>
<td></td>
</tr>
<tr>
<td>Bromton and Harefield</td>
<td>Prof J Pepper</td>
<td>Imperial College</td>
</tr>
<tr>
<td>Hammersmith</td>
<td>Prof G Angelini</td>
<td>Imperial College</td>
</tr>
<tr>
<td></td>
<td>Sen Lec Mr T Athanasiou</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Prof N Peters – electrophysiology</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Prof D Haskard</td>
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</tr>
</tbody>
</table>
London (South Thames)

Deanery Rotation Base(s)

<table>
<thead>
<tr>
<th>HOSPITAL</th>
<th>LOCATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guy’s Hospital</td>
<td>Great Maze Pond, London SE1 9RT</td>
</tr>
<tr>
<td>King’s College Hospital</td>
<td>Denmark Hill, London SE5 9RS</td>
</tr>
<tr>
<td>Royal Sussex County Hospital</td>
<td>Eastern Rd, Brighton, East Sussex BN2 5BE</td>
</tr>
<tr>
<td>St George’s Hospital</td>
<td>Blackshaw Rd, London SW17 0QT</td>
</tr>
<tr>
<td>St. Thomas’s Hospital</td>
<td>Lambeth Palace Rd, City of London SE1 7EH</td>
</tr>
</tbody>
</table>

Deanery information

The South Thames Programme provides a comprehensive range of operations in adult cardiac, paediatric cardiac and thoracic surgery. In addition to routine procedures, the programme provides specialist training in off-pump CABG, mitral valve repair, surgery for aortic root (including valve preserving procedure), arch surgery and de-branching techniques, trans-catheter valve implantation, mini-bypass, mini aortic valve replacement, VATS lung resection, surgery for mesothelioma and Norwood operation. Some of these specialist areas have been highlighted in the last addition of the Blue Book. In the South Thames programme, specialist training in imaging, including echocardiography, by spending time in the echo lab, also obtaining endovascular and cardiological techniques by spending time in the catheter lab, are also provided. These training opportunities have been discussed with the cardiologists, vascular interventionalists and radiologists and the placements are confirmed.

Teaching

i. Trainers

General
All the consultants of the rotation have completed TtT, TAIP and have registered with ISCP. All these courses were approved by the Deanery and were either completed at the Deanery or the relevant teaching hospitals. All the educational supervisors have also completed ‘Managing the trainees in difficulty’ course. All consultants involved in research have completed ‘Good Clinical Practice’ course.

The chairman of the Intercollegiate Speciality examining Board, Cardiothoracic Surgery, Mr. EEJ. Smith is Consultant Cardiothoracic Surgeon at St. George’s Hospital.

The London School of Surgery is committed to this process and equivalent of 0.25 PA is planned for cardiothoracic surgeons who are educational supervisors. This has already been implemented in some of the job plans.
There is strong link between cardiothoracic surgery trainers and other trainers in anaesthesia, cardiology (particularly imaging), vascular surgery (particularly endovascular management) and catheter based techniques. The training of these associated specialities has been discussed with the respective trainers and there is already a well defined period in the curriculum for the trainees to attend these subspecialties. Some of the specialist registrars in the rotation are already receiving training in, eg. trans-catheter aortic valve implantation and endovascular stenting. Furthermore, one of the existing NTNs, Mr. Neil Roberts (training number SHF/029/202/N) had taken 6 months out and is trained in endovascular therapy.

In addition, there is a well defined training programme both on intensive care units and post-graduate centres for insertion and management of Swan Ganz, haemofiltration and ventilation.

**Guy's**

**Educational supervisor:** Mr. Tom Routledge FRCS – Consultant Thoracic Surgeon

<table>
<thead>
<tr>
<th></th>
<th>TtT</th>
<th>TAIP</th>
<th>ISCP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Miss. Karen Harrison-Phipps FRCS Consultant Thoracic Surgeon</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mr. Tom Routledge FRCS Consultant Thoracic Surgeon</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Miss. Juliet King FRCS Consultant Thoracic Surgeon</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mr. Loic Lang-Lazdunski FRCS Consultant Thoracic Surgeon</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

**Evidence for Curriculum based training (cont.)**

**King's**

**Educational supervisor:** Mr. Jatin Desai, FRCS – Consultant Cardiac Surgeon

<table>
<thead>
<tr>
<th></th>
<th>TtT</th>
<th>TAIP</th>
<th>ISCP</th>
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</thead>
<tbody>
<tr>
<td>Mr. Jatin Desai FRCS Consultant Cardiac Surgeon</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mr. Olaf Wendler FRCS Consultant Cardiac Surgeon</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Mr. Lindsay John FRCS Consultant Cardiac Surgeon</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Mr. Mike Marrinam FRCS Consultant Cardiothoracic Surgeon</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Mr. Ranjit Deshpande FRCS Consultant Cardiac Surgeon</td>
<td></td>
<td></td>
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</tbody>
</table>
**RSCH**

**Educational supervisor:** Mr. Uday Trivedi, FRCS – Consultant Cardiac Surgeon

<table>
<thead>
<tr>
<th></th>
<th>TtT</th>
<th>TAIP</th>
<th>ISCP</th>
</tr>
</thead>
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<tr>
<td>Mr. Jonathan Hyde FRCS</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Consultant Cardiac Surgeon</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mr. Uday Trivedi FRCS</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Consultant Cardiac Surgeon</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mr. Andrew Cohen FRCS</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Consultant Cardiac Surgeon</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mr. Michael Lewis FRCS</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Consultant Cardiac Surgeon</td>
<td></td>
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<td></td>
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</table>

**St. George’s**

**Educational supervisor:** Mr. Ian Hunt, FRCS – Consultant Thoracic Surgeon

<table>
<thead>
<tr>
<th></th>
<th>TtT</th>
<th>TAIP</th>
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</thead>
<tbody>
<tr>
<td>Professor Marjan Jahangiri FRCS</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Consultant Cardiac Surgeon</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mr. V Chandrasekaran FRCS</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Consultant Cardiac Surgeon</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mr. Mazin Sarsam FRCS</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Consultant Cardiac Surgeon</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mr. Robin Kanagasabray FRCS</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Consultant Cardiothoracic Surgeon</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mr. E E J Smith FRCS</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Consultant Cardiothoracic Surgeon</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mr. Ian Hunt FRCS</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Consultant Thoracic Surgeon</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Miss. Carol Tan FRCS</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Consultant Thoracic Surgeon</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**St. Thomas’**

**Educational supervisor:** Mr. Vinnie Bapat, FRCS – Consultant Cardiac Surgeon

<table>
<thead>
<tr>
<th></th>
<th>TtT</th>
<th>TAIP</th>
<th>ISCP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mr. Fik Shabbo FRCS</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Consultant Cardiac Surgeon</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mr. Graham Venn FRCS</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Consultant Cardiac Surgeon</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mr. Chris Young FRCS</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Consultant Cardiac Surgeon</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mr. James Roxburgh FRCS</td>
<td>+</td>
<td>+</td>
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</tr>
</tbody>
</table>
Consultant Cardiac Surgeon
Mr. Vinnie Bapat FRCS
Consultant Cardiac Surgeon
Mr. Chris Blauth FRCS
Consultant Cardiac Surgeon
Mr. David Anderson FRCS
Consultant Cardiac Surgeon
Mr. Conal Austin FRCS
Consultant Cardiac Surgeon

ii. Training programme and trainee activity profile

Cardiac training

The trainees contribute to all the cases and all the centres involved in South Thames Deanery. This figure varies from a minimum of 50% for non-NTN to a maximum of 96% for NTN. Please note that some of the units on the rotation have not had an NTN for the past two years. The following table shows the number of cases performed by both NTN and non-NTN trainees for complete cases and when part of the cases was performed, eg. open and closed chest, harvesting of conduits.

Cardiac cases performed by trainees

<table>
<thead>
<tr>
<th></th>
<th>King's</th>
<th>RSCH</th>
<th>St. George's</th>
<th>St. Thomas'</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complete cases</td>
<td>-</td>
<td>20%</td>
<td>39%</td>
<td>30%</td>
</tr>
<tr>
<td>NTN</td>
<td>7%</td>
<td></td>
<td>11%</td>
<td></td>
</tr>
<tr>
<td>non NTN</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Open chest NTN</td>
<td>-</td>
<td>75%</td>
<td>86%</td>
<td>42%</td>
</tr>
<tr>
<td>NTN</td>
<td>50%</td>
<td>75%</td>
<td>72%</td>
<td>&gt;60%</td>
</tr>
<tr>
<td>non NTN</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Close chest NTN</td>
<td>-</td>
<td>75%</td>
<td>85%</td>
<td>45%</td>
</tr>
<tr>
<td>NTN</td>
<td>50%</td>
<td>75%</td>
<td>69%</td>
<td>&gt;60%</td>
</tr>
<tr>
<td>non NTN</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LIMA harvest NTN</td>
<td>-</td>
<td>90%</td>
<td>94%</td>
<td>&gt;40%</td>
</tr>
<tr>
<td>NTN</td>
<td>50%</td>
<td>40%</td>
<td>86%</td>
<td></td>
</tr>
<tr>
<td>non NTN</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cannulation NTN</td>
<td>-</td>
<td>90%</td>
<td>85%</td>
<td>&gt;40%</td>
</tr>
<tr>
<td>non NTN</td>
<td>50%</td>
<td>40%</td>
<td>54%</td>
<td></td>
</tr>
</tbody>
</table>

Obviously, the performance of complete cases depends on the grade of trainee. Their training progression is assessed by detailed study of their educational contract. Their progression is also assessed bi-annually through the RITA/ARCP process at the London Deanery.

The teaching of new procedures, eg. harvesting of LIMA and cannulation is invariably performed by the consultants. The performance of complete cases is fully supervised by the consultants.
There are bi-annual courses on circulatory support including management if IABP and ventricular assist device at St. George’s, Royal Brompton and Hammersmith hospital. Although the latter two hospitals are part of the North Thames Deanery, all trainees are encouraged to attend the courses.

**Congenital training** - Trainees in the South rotation have ample opportunities for training in congenital heart disease at St. Thomas’ Hospital. The current NTN is performing up to 30% of cases.

**Endovascular therapy** – There is well established endovascular training at both St. George’s and St. Thomas’ hospitals. These include training in trans-femoral and trans-apical aortic valve implantation, basic catheter techniques and training with vascular surgery for endovascular techniques. These training opportunities are already in place and the NTN are actively taking part.

**Cardiac advanced life support (CALS)** – Two of the hospitals (St. George’s & St. Thomas’) have established these courses and have been running them since March 2010.

**ii. Training programme and trainee activity profile**

**Thoracic training**

Guy’s and St. George’s hospitals provide dedicated training in thoracic surgery. There is also training for thoracic surgery available at King’s College. The majority of the endoscopic procedures, minor and medium range thoracic cases, opening and closing thoracotomy for major operations are performed by the registrar in training. All the procedures are fully supervised by the consultants.

In addition, the programme trains the more senior of the registrars in resection of lungs, VATS lobectomy and extended resections. Evidence of progression of training from these two units is that 3 of the NTNs in the last 2 years on the programme have obtained consultant posts in major teaching hospitals.

**Thoracic cases performed by trainees**

<table>
<thead>
<tr>
<th></th>
<th>Guy’s</th>
<th>St. George’s</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total no. of cases</strong></td>
<td>54%</td>
<td>41%</td>
</tr>
<tr>
<td><strong>Endoscopic procedures</strong></td>
<td>30%</td>
<td>85%</td>
</tr>
<tr>
<td>(mainly stenting, this is done by consultants)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>VATS procedures</strong></td>
<td>65%</td>
<td>48%</td>
</tr>
</tbody>
</table>
### Thoracotomy (open & close)

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Pass Rate 1</th>
<th>Pass Rate 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thoracotomy</td>
<td>75%</td>
<td>80%</td>
</tr>
<tr>
<td>Lobectomy</td>
<td>85%</td>
<td>75%</td>
</tr>
</tbody>
</table>

### iii. Evidence for quality of training programme

All the units have received regular visits from the Deanery in the past 3 years. The visits are part of routine inspection by the Deanery:

**Guy’s Hospital** – The quality of training for both registrars in thoracic surgery and core surgical trainees was thought to be very high.

**St. George’s Hospital** – The unit was visited in 2009. It was thought that the quality of training for both registrars in cardiothoracic surgery and core surgical trainees was very high. The visit involved interviews with trainees. The trainees who were interviewed by the Deanery were chosen randomly ensuring unbiased reporting. Following the visit an extra core trainee level 3 was awarded for cardiothoracic surgery.

**King’s** – The quality of training was thought to be good. Some recommendations were made, which are already met by trainers.

### NTNs appointed to Consultant jobs

- **Mr. Ian Hunt**, NTN South Thames Deanery – appointed as Consultant Thoracic Surgeon at St. George’s Hospital, May 2009
- **Miss. Carol Tan**, NTN South Thames Deanery – appointed as Consultant Thoracic Surgeon at St. George’s Hospital, November 2009
- **Mr. Neil Roberts**, NTN South Thames Deanery – appointed at Consultant Cardiac Surgeon, The Heart Hospital University College of London, September 2010

### Number of first time passes in the intercollegiate specialty examination

2009/2010 - 8 out of 9 first time passes. The one candidate who failed at first attempt passed at 2nd attempt.

One of the non NTNs (Mr. Kaushik Mandal) has successfully entered a senior residency programme in Cardiothoracic Surgery at Johns Hopkins Hospital in Baltimore, USA and will be completing his Chief Residency in 2011.

**Number exceeding period of grace: 0**
MD (Res) and PhD qualification, 2009/2010

King’s College, MD (Res), 3 awarded

St. George’s, 3 MD (Res) and 3 PhD awarded

Appointments at national selection

2009 - 2 of the core surgical trainees in South Thames Deanery were successful in obtaining cardiothoracic NTN. They both came in the top 5.

2010 - 3 of the core surgical trainees in South Thames were successful in obtaining NTN. This included the highest ranking candidate and the second ranked who was awarded ACL/CAL position.

Evidence for curriculum based teaching

i. Learning opportunities within the programme

The following table shows attendance of trainees in new outpatient, follow-up and multidisciplinary meetings. On average the attendance of trainees in new patient clinic to follow-up clinic is a 3.7.

Other training activities (for more specific details please see under each unit)

<table>
<thead>
<tr>
<th></th>
<th>Guy's</th>
<th>King's</th>
<th>RSCH</th>
<th>St. George's</th>
<th>St. Thomas'</th>
</tr>
</thead>
<tbody>
<tr>
<td>New patient clinic</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Follow-up clinic</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>MDM</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
</tbody>
</table>

Guy’s, St. George’s and St. Thomas’ Hospital have one dedicated teaching day per week. More specifically:

Guy’s Hospital - Guy’s hospital has a large onsite medical school library with extension journal collection. Access to internet in the registrar room with four computers and printers are available. There is a weekly post-graduate teaching programme.
St. George’s Hospital - The unit has a strong research section with seven to eight full time research fellows at any one time, funded by various grant bodies aiming for higher research degrees. The unit has established research collaboration with Imperial College, James Black Centre at King’s College and University College London. Every week the registrars and SHO equivalents are given a copy of the most relevant and important paper published in cardiothoracic literature to study. There are wet lab facilities available at all times in the post graduate centre. There is a weekly MDM with cardiologist, anaesthetists and intensivists, there is a weekly imagining meeting for heart failure and another weekly meeting on echocardiography and review of complex cases. These are in addition to weekly MDM of thoracic surgery where attendance by thoracic teams is mandatory. There is also a didactic lecture once a week on various aspects of cardiovascular medicine and surgery.

There is a detailed weekly TAVI meeting which is sometimes incorporated into the general MDM for cardiothoracic surgery. Registrars present regularly at all these meetings.

Simulation laboratory – There is a simulation laboratory based at St. George’s providing training for all core and specialist trainees across London. This is an advanced lab with particular attention and interest given to cardiothoracic surgery.

St. Thomas’ Hospital – There is a formal teaching session with cardiologists one evening per week. Because of the volume of TAVI cases performed and involvement in teaching and training new centres across Europe and US the trainees have the opportunities to get involved as first assistants in these procedures. There are 4 MDM sessions per week including joint meetings with cardiology echocardiography meeting, TAVI meeting (fortnightly) and aortic meeting with vascular and interventional radiologists.

Training facilities (wet lab, simulation lab, library)

There are wet lab facilities at St. George’s and St. Thomas’ Hospitals. All units have access to IT, journals on-site and excellent library facilities affiliated with their universities. Specific wet labs and teaching sessions have been organised every four months at St. George’s Hospital representing South Thames Deanery and Royal Brompton Hospital / London Chest and The Heart Hospital representing North Thames Deanery. This involves teaching on various aspects of surgery for coronary artery disease, valvular heart surgery. Furthermore there have been teaching sessions using simulators on these programmes. The programme has also included using video assisted equipment.

There is a detailed weekly TAVI meeting which is sometimes incorporated into the general MDM for cardiothoracic surgery. Registrars present regularly at all these meetings.

Regional Academic Teaching Programme, national and international meetings

St. George’s Hospital organises the Valve Technology Symposium which attracts national and international delegates and it is offered to all trainees in the London
Deanery at significantly reduced registration fees. St. Thomas’ and King’s College Hospital organised a London Valve symposium with St. George’s Hospital contributing to it, discussing all aspects of transcutaneous valve therapy. This attracts up to 800 national and international delegates.

There are also two symposia per annum of the cardiothoracic section of the Royal Society of Medicine available to all trainees.

All trainees from both North and South Thames Deanery are encouraged to attend the symposia at significantly reduced rate. The teaching sessions, organised every two months, for all trainees of London Deanery require compulsory attendance. The attendance is encouraged and facilitated by all consultants.

All NTNs and some non NTNs are strongly encouraged to attend the annual meeting of Society of Cardiothoracic Surgery of Great Britain and Ireland. This may have meant reducing the staffing at each unit to a skeleton level, but we have obtained 100% attendance of NTNs in 2009 and 2010 meetings.

In addition, all NTNs are encouraged to submit abstracts to all relevant international meetings and attend at least one meeting. All NTNs attended at least one international meeting of high quality in 2009 and 2010. 75% had at least one abstract for presentation at these meetings. Evidence of the abstracts is provided in the following sections.

ii. Academic activity

Research and Academic Activity

There are opportunities for all cardiothoracic registrars and also doctors in their core surgical training to take part in clinical, basic science and clinical trials research. The Deanery provides excellent facilities for these individuals to either enter research before their specialist training or take a period out of their formal programme.

In addition the basic research provided by St. Thomas’s, King’s College and St. George’s Hospital; St. George’s Hospital provides a comprehensive range of research for trainees in cardiology and cardiothoracic surgery. In the last 8 years 15 candidates have registered for MD (Res) and PhDs and 12 have completed and have been awarded their degrees.

There is strong collaboration between all the hospitals and respective universities. Some of these collaborations include Department of Cardiac and Vascular sciences, St. George’s University of London, James Black Cardiovascular Centre at King’s, Cardiovascular Research Institute at St. Thomas’ Hospital and the Rayne’s Institute at University College of London.

More specifically, the following individuals have entered research programme aiming for a higher research degree. They have been registered at St. George’s University of London and their primary supervisor has been Professor Marjan Jahangiri.
These projects have been funded from various research grant bodies included The British Heart Foundation, Heart Research UK, The Royal College of Surgeons of England and Marfan Association.

**Trainee assessment and progression**

- At the start of their placement, the trainee is given an educational contract. The contents of which are discussed in detail with the trainee and specific targets are set for 3 monthly periods. The trainees meet with their educational supervisors at these regular intervals and the goals achieved and not achieved are reviewed with necessary action points. If there are specific problems the trainee would meet with their educational supervisor +/- their respective consultant at shorter intervals.

- There are also regular meetings at the Deanery and London School of Surgery where the progression of individual trainees are discussed. All trainees attend 6 monthly RITA/ARCP assessment at the Deanery. Their progression is assessed by a panel at each RITA meeting. All trainees are given targeted assessment at each RITA assessment. These are examined in detail. For the past 3 years none of the trainees have had a set back of have failed their assessment or found to have not made satisfactory progress.

All trainees who took the intercollegiate examination have passed their exams, 8 out of 9 at their first attempt.

3 have been appointment to consultant positions. None have exceeded their period of grace. 1 trainee was awarded and endovascular fellowship by The British Society of Cardiology and Vascular surgery. 6 have completed their MD (Res) degree and PhD within 2 -3 years of start date, submitted and passed their respective examinations.

**Further information**

In summary, The South Thames Programme, London Deanery provides an extremely comprehensive and world class programme in clinical and academic cardiothoracic surgery. This is evidenced by providing training in all aspects of adult cardiac and thoracic surgery and paediatric cardiothoracic surgery. These areas encompass several sub-specialities, cutting edge techniques, well integrated with cardiothoracic anaesthesia, intensive care, cardiology and vascular surgery. In addition, the programme provides excellent training in academic cardiac surgery with a very high output as outlined in this application. These are combined with high volume of surgery and an ethos and dedication to training which is encouraged and assessed by the School of Surgery in London. Furthermore, the trainee is exposed to planned didactic teaching, wet lab and simulation facilities designed for all trainees in London and tailored to improve specific areas of the curriculum. To support this application the following documents are attached:

- Statements by trainees
- Contracts for training
• Copies of trainees log books.
• Reports and minutes of STC meetings
• Reports and minutes of RITA/ARCP assessment
• Teaching program and conferences (www.valvetechnology-sgh.co.uk)
**Northern**

Deanery Rotation Base(s)

<table>
<thead>
<tr>
<th>HOSPITAL</th>
<th>LOCATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freeman</td>
<td>High Heaton, Newcastle-upon-Tyne</td>
</tr>
<tr>
<td>James Cook</td>
<td>Middlesbrough</td>
</tr>
</tbody>
</table>

**Deanery information**

The Deanery is situated in the North East and has two centres for training. The Deanery is pro-active with numerous free courses available for leadership and management preparation. In addition support is given to the Consultant body to ensure they are the best trainers. The TPD attends regular school of surgery and quality assurance meetings to ensure the best training is given. The HR administrative work is performed by the sub-contracted Lead employment Trust.

**Rotation Information**

Within the 6 year training the trainee will rotate at least once to the other centre. Most trainees stay for a minimum of one year. Travel and relocation expenses are given.

**Trust Generic/Specialty Information**

Each site has a library with e-access to many cardiothoracic journals. James Cook has 6 trainers and Freeman 12. Most have been on TtT courses and are ISCP-registered. There is a Trust education department at each hospital.

**Teaching**

Each site provides adult cardiothoracic training, with Freeman also providing transplantation and congenital training.

There are weekly teaching days on each site covering the syllabus and this includes journal clubs.

Recently we have started regional teaching specifically aimed at the trainees taking the Cardiothoracic part III exam to ensure that they are best prepared. There have also been wet-labs established and there is a cadaveric lab which can be used in addition. There is ongoing work piloted by Cardiothoracic surgery into surgical simulation.
Northern Ireland and Northern Deanery

Deanery Rotation Base(s)

<table>
<thead>
<tr>
<th>HOSPITAL</th>
<th>LOCATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Royal Victoria Hospital, The Belfast Trust</td>
<td>Belfast</td>
</tr>
<tr>
<td>James Cook Hospital</td>
<td>Middlesbrough</td>
</tr>
<tr>
<td>Freeman Hospital</td>
<td>Newcastle</td>
</tr>
</tbody>
</table>

Deanery information

The Northern Ireland Deanery is responsible for post-graduate medical training in Northern Ireland and the Northern Deanery is responsible for the same in the North East of England and Cumbria.

Rotation Information

Expected rotation arrangements for this programme are:

This application for a NTN is for a training rotation in a new consortium incorporating the Northern and Northern Ireland deaneries which will offer the training in the full range of cardiothoracic surgery and will combine the best aspects of both established training programmes.

The Northern Deanery provides a comprehensive training in Cardiothoracic Surgery delivered to trainees across two sites, in Middlesbrough (James Cook Hospital) and Newcastle (Freeman Hospital - Thoracic, Congenital, Adult Cardiac, and Cardiothoracic Transplantation and Device training). The Northern Ireland Deanery provides training in all aspects of Cardiac and Thoracic surgery except transplant, on one site in the Belfast Trust.

Over the last three years, both deaneries have embraced the practicalities of the Intercollegiate Surgical Curriculum Project, the European Working Time Directive, and the new intake of ST3 and, in the Northern Deanery, Academic Clinical Fellow trainees. The consortia can offer committed training to match the training opportunities of each trainee.

The training programme will be 4 years in the Northern Ireland Deanery and two in the Northern. Training will Adult Cardiac and Thoracic in Northern Ireland. In the time in the Northern region, training in congenital surgery and transplantation will be available depending on the chosen career intentions of the trainee.

Trust Generic/Speciality Information

The Royal Hospitals is Northern Ireland's biggest and best known hospitals complex. Almost two thirds of the Northern Ireland population live within 40 minutes travel from the 70 acre site which is situated only a few minutes drive from Belfast city centre. The Cardiac Surgery Unit at the Royal Hospitals Trust is a specialised regional service, established in 1968, serving a Northern Ireland population of 1.7 million. The Unit performs all aspects of Cardiothoracic Surgery except transplantation and
ECMO. Over 1000 cardiac cases and around 400 open thoracic procedures are performed each year.

The Freeman Hospital opened in 1977 and is the only centre in the UK to offer all forms of adult and paediatric cardiothoracic surgery as well as heart and lung transplantation. The Freeman is also a centre for artificial heart technologyhe Regional Cardiothoracic Centre

The cardiothoracic unit at the James Cook University Hospital, part of the South Tees NHS Trust, is a specialised regional service, established in 1993, serving a population of 1.5 million stretching from Whitehaven in Cumbria to North Yorkshire, Teesside and Durham

**Teaching**

In the Northern Deanery, formal teaching comprises weekly departmental and monthly regional training. There is the availability of simulation laboratories and cadaver rooms as well as established wetlabs. There are business cases to establish High-definition VATS equipment to allow trainees to review their operating in a critical way under supervision. A recent well-attended successful faculty meeting ensured that all trainers are working as one, in relation to current educational standards, and this will be repeated each year. The deanery has accepted cardiothoracic trainees from other deaneries for independent validation, and for left-handed training. In addition, Newcastle University offers a Post-graduate Certificate in Clinical Medical Research that can be taken part-time over the course of 12 months, and the Faculty will offer the opportunity to take this course to any new Cardiothoracic trainee.

In the Northern Ireland Deanery, there is a strong tradition of supportive mentoring with a particular focus on supervised operative training. The feedback from the trainees about training in Belfast is invariably positive. All study leave requests which are appropriate to the trainees needs are granted with funding. For both Cardiac and Thoracic surgery there is access to wet lab training in the RCSI and there are formal teaching programmes in term time.
**North West and Mersey**

The North West and Mersey cardiothoracic programmes are geographically adjacent to each other and have formally joined in August 2009 to form the North West Consortium.

Given the size of the consortium and the sub specialty strengths of the consortium, a template for both cardiothoracic training and pure thoracic training programme is submitted.

**The programme involves the following centers:**

<table>
<thead>
<tr>
<th>HOSPITAL</th>
<th>LOCATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liverpool Heart And Chest Hospital</td>
<td>Liverpool</td>
</tr>
<tr>
<td>Alder hay Children’s Hospital ( SAC educational approval due )</td>
<td>Liverpool</td>
</tr>
<tr>
<td>University Hospital South Manchester Foundation Trust (UHSM)</td>
<td>Manchester</td>
</tr>
<tr>
<td>University Hospital Central Manchester Foundation Trust (CMMC)</td>
<td>Manchester</td>
</tr>
<tr>
<td>Lancashire Heart Centre, Victoria Hospital</td>
<td>Blackpool</td>
</tr>
</tbody>
</table>

Liverpool has a long tradition in ‘Thoracic Surgery’ and boasts some of the pioneering names in the specialty. The Liverpool Heart and Chest Hospital, one of the largest single centre cardiothoracic units in the United Kingdom, is an autonomous single specialty Foundation Trust on the site of Broad green Hospital, one of the two designated teaching hospitals in Liverpool, offering tertiary services in Cardiothoracic Surgery, Cardiology and Chest Medicine to a population of 2.8 million people in Merseyside, North Wales and the Isle of Man as well as parts of Lancashire and Cheshire.

The Mersey Cardiothoracic Training Programme has always been and will continue to be committed to provide as comprehensive a training experience as possible. The Liverpool Heart and Chest Hospital's cardiac surgical programme provides for all adult cardiac procedures except for transplantation and aims to perform around 2000 procedures over the current financial year (2009/10). The service has a number of particular strengths including:

- Off-pump coronary artery bypass surgery – one of the largest experiences in the UK and Europe
- A comprehensive mitral repair programme including radiofrequency ablation
- A large programme of aortic surgery including thoracoabdominal procedures and a significant amount of endovascular procedures
- Epicardial pacing
- A transcatheter aortic valve implantation programme with both transfemoral and transapical approaches.
The thoracic service offers a comprehensive programme and is scheduled to perform over 700 major operations in the current financial year (2009/10). Apart from providing the standard thoracic procedures the service also has a large esophageal practice with close collaboration with the upper gastrointestinal surgeons. Over the years there have been ad hoc arrangements with Manchester and the Alder Hey Children’s Hospital to provide some exposure to transplantation and pediatrics. These areas have been recognized as weaknesses and have now been addressed by amalgamating the training with the North Western Deanery (North West Training Consortium). This started on 1\textsuperscript{st} August 2009 and although in its infancy shows enormous promise. The main reason for this move is to provide a comprehensive training experience with a combined programme that will ‘iron out’ and improve on what each of us provide separately. In addition, we will offer our trainees a different ‘outlook’ that a single centre exposure will always lack. Mersey can also offer pediatric exposure with the pediatric surgeons very keen to collaborate and Alder Hey expected to be given educational approval in the next few months. The two Deaneries retain the numbers under the aegis of the respective Programme Directors but training is now directed by a single STC.

**Six Year Cardiothoracic Training Rotation:**

- Two years in Liverpool (CTC / Alder hay)
- Two years in Manchester (UHSM / CMMC)
- One year in Blackpool
- One year in CTC / UHSM / CMMC / Blackpool / Alder hay / OOPE depending on area of subspecialty training.

**Six Year Thoracic Surgery Training Programme:**

- Two years in thoracic surgery Liverpool (CTC)
- Two in thoracic surgery in UHSM
- One year cardiac surgery (Blackpool / CMMC / Liverpool)
- One year OOPE (minimally invasive / esophageal / lung transplant / tracheal) depending on subspecialty interest

The above programme is a template and is subject to change to suit individual trainee requirements

The North West Consortium will provide most comprehensive training in cardiothoracic surgery with opportunities to develop subspecialty interest in thoracic surgery, transplantation, esophageal surgery, pediatric surgery, aortic, mitral valve and off pump surgery. Close links with Manchester University, Paterson’s Institute of research (Christie Hospital) along with the excellent transplant research lab offer excellent opportunities to pursue academic aspirations. The programme will offer opportunities to actively participate in the Northwest Cardiac / Thoracic surgery audit, North West Quality improvement programme, North West Thoracic Society meeting and North West regional teaching programme. The Northwest consortium will also offer excellent high quality educational resource which is highlighted below.
North West Consortium Educational Resource

- North West Regional Teaching Programme (08/09/10) with attendance record (Liverpool / Manchester)
- Wet lab sessions as part of teaching programme (Liverpool/ Blackpool)
- Regular wet labs/workshops covering CABG, MVR, AVR, Mitral valve repair and Aortic root replacement (Liverpool / Blackpool)
- North West Cardiothoracic Course for Senior SPR's (2005 to date)
- Mitral Valve Symposium (Blackpool)
- National TOE Course (UHSM)
- Thoracic Forum Manchester 08
- Imaging in cardiothoracic / esophageal surgery (Liverpool)
- Perfusion in cardiac surgery (Liverpool)
- Difficult Scenarios in Cardiac, thoracic and esophageal surgery (Liverpool)
- Viva practice for FRCS (C/Th) (Liverpool)
- Terms and techniques for aortic surgery for trainees (Liverpool)
- Lung cancer MDT (7/8), Cardiac MDT, Transplant MDT
- FRCS (C/Th) Examiners
- Weekly teaching meetings at UHSM/ Blackpool / CMMC
- Biweekly teaching meetings at Liverpool

Strengths of North West Consortium include the following:

- ability to provide comprehensive training in cardiac, thoracic, pediatric and transplantation
- ability to fully train a cardiac or thoracic surgeon
- ability to provide subspecialty training in Off pump, Aortic, Mitral valve and Esophageal surgery
- geographic location of hospitals in the programme
- ability to provide training to suit needs of trainee with compliant Rota (high trainer / trainee ratio)
- Excellent Educational Resource as above
- Twice a year Assessments
- Track record of high pass rate at FRCS(C/Th) and Consultant appointments
- Opportunities for academic development of Trainees
- Excellent Training environment
- Trainee Representation on Regional training committee
- Excellent Trainee feedback
- Deanery / School of surgery support
- Centre for Intercollegiate exam (Liverpool / Manchester)
- Themed cardiothoracic core training programme (18 months cardiothoracic / 6 months generic training)

UHSM (Wythenshawe hospital)
- Clinical fellow: 5
- Staff grade / Associate specialist: 3
- Transplant fellows: 4
CT1/ CT2 : 3
Trust fellow ( SHO grade ) : 3
Rota: 1:9 partial shift EWTD compliant

CMMC (Manchester Royal Infirmary)
Clinical fellow : 7
CT1/CT2/F1: 3
Rota: 1:8 partial shift EWTD compliant

Lancashire Heart centre (Blackpool)
Clinical fellow : 7
CT1 / CT2: 2
Trust grade ( SHO ) : 3
Rota: 1:9 24 hr resident on call EWTD compliant

Liverpool Heart and Chest Hospital:
LAT: 2
Clinical Fellow: 7
Specialty doctor : 3
CT1: 3   FTSTA: 3   F2: 3
Trust SHO: 1

Training in Cardiac Surgery

UHSM: October 07 to September 10
- Cardiac surgery : % of cases done by middle grades : 19.8%
- % of cardiac cases done by NTN ( yr 6 ) (august 09 to September 10):
  110 / 165 ( 63% )
- % of heart retrievals done by middle grades ( April 06 to Dec 09 ) – 100%
- % of heart Implants done by middle grades : 2 / 55

Lancashire Cardiac Centre :
- Cardiac surgery : % of cases done by middle grades : 10.3%
- Significant Contribution of ST3 ( Sternotomy / IMA / Cannulation / Decannulation ) : > 90%
- Significant Contribution of ST4 ( CABG / VALVE performed under supervision ) : 56% CABG, 62% of isolated AVR

CMMC:
Cardiac surgery: 554/2263 (21%)
Percentage of cases done by ST5 in 09/10:

Liverpool Heart and Chest Hospital: January 2006 to October 2010
- % of cardiac operations done by middle grades : 18%
- % of cardiac operations done by senior numbered trainees : 35%
The chart below also clearly shows that trainees at the same level of seniority and exposed to the same educational infrastructure have a different focus (cardiac or thoracic) and progress at differing rates.

**Training in Thoracic surgery**

**UHSM  September 07 to October 10**
- Thoracic Surgery: % of all cases done by middle grades : 40%  
- % of thoracic cases done by NTN (yr 6) (August 09 to September 10): 76% includes 20 VATS lobectomy  
- % of lung retrieval done by middle grades (April 06 to Dec 09): 100 %  
- % of lung implants done by middle grades (April 06 to date): 30 / 76 (39 %)

**Lancashire cardiac centre:**
- % of thoracic cases performed by middle grade : 20%

**Liverpool Heart and Chest Hospital: January 2006 to October 2010**
- % of all cases done by middle grades : 25%  
- % of all cases done by senior numbered trainees : 55%

The chart below also clearly shows that trainees at the same level of seniority and exposed to the same educational infrastructure have a different focus (cardiac or thoracic) and progress at differing rates.
South East Scotland

Deanery Rotation Base(s)

<table>
<thead>
<tr>
<th>HOSPITAL</th>
<th>LOCATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Royal Infirmary of Edinburgh</td>
<td>Edinburgh</td>
</tr>
<tr>
<td>Aberdeen Royal Infirmary</td>
<td>Aberdeen</td>
</tr>
<tr>
<td>Golden Jubilee National Hospital</td>
<td>Clydebank, Glasgow</td>
</tr>
<tr>
<td>Royal Sick Childrens Hospital</td>
<td>York hill, Glasgow</td>
</tr>
</tbody>
</table>

Deanery information : South-East Scotland

The Lister
11 Hill Square
Edinburgh EH8 9DR
Tel: 0131 650 2609

South East of Scotland Deanery

Welcome to the South East Region of NHS Education for Scotland, based at the Lister in Edinburgh. The Lister first opened its doors in the 1960s as the Edinburgh medical community's memorial to Lord Lister, the founder of antiseptic surgery and previous Professor of Surgery at the University of Edinburgh. Originally pivotal to the delivery of postgraduate medical education of doctors from Edinburgh, Scotland and beyond, the Lister is now the home of the SE Region of NES. Conveniently situated in the centre of Edinburgh, the Lister is also a popular venue, offering training and meeting facilities for use by professionals from South East Scotland and further a field. Maintaining close contact with GP and Dental colleagues, the University of Edinburgh and the medical Royal colleges, to-day the Lister represents the spirit of co-operation so necessary for the effective management and provision of training to healthcare professionals. NES South East Region looks forward to hosting an increasing number of multi-disciplinary events.

Postgraduate Dean

Biography

Base: The Lister
PA: June Lawson
Rotation Information

Expected rotation arrangements for this programme are:

- **ST3** - Year: Either at Royal Infirmary of Edinburgh or Aberdeen Royal Infirmary
- **ST4** – Paediatric Surgery: 6 months post – Royal Sick Children’s Hospital, Glasgow
- **ST4** – Thoracic Surgery: 6 months post – Golden Jubilee National Hospital, Glasgow
- **ST5** – Adult Cardiac Surgery – 12 months post - Golden Jubilee National Hospital, Glasgow
- **ST6** – Adult Cardiac Surgery – 12 months post - Golden Jubilee National Hospital, Glasgow
- **ST7 & ST8** – Adult Cardiac / Thoracic surgery – Royal Infirmary of Edinburgh
- Exceptions to rotation arrangements: Paediatric Surgery can be optional and Thoracic surgery block could be offered for 12 months.

Trust Generic/Specialty Information

Royal Infirmary of Edinburgh:

About the unit

The cardiothoracic unit at the Royal Infirmary of Edinburgh is a specialised supra-regional service, which moved to its current, state of the art facility in 2003. It is a tertiary referral centre, dealing with patients from all over Scotland. The Royal infirmary of Edinburgh is nationally and internationally well renowned for offering excellent training in cardio-thoracic surgery.

The Edinburgh Cardio-Thoracic Unit provides a regional service for approximately 1.5 million populations in Lothian, Fife and Border Areas. The work of the unit is carried out at the Royal Infirmary Cardiothoracic Unit, which deals with all open-heart surgery, surgery of the great vessels, trauma and thoracic surgery including pulmonary and some oesophageal surgery.

The Royal Infirmary (RIE) is a major teaching hospital on a green field site in the South East of the city of Edinburgh built in 2003. It comprises 25 wards, 869 beds, and 24 operating theatres, and is equipped with modern theatre and critical care equipment and monitoring. Within the main building is a dedicated, multidisciplinary, 5 theatre day surgery complex. The hospital provides for most specialities and is the centre for:

- General surgery with a focus on the upper GI tract
- Vascular surgery
- Hepato-biliary and Transplant medicine and surgery
- Cardiac and Thoracic surgery
- Elective and trauma Orthopaedics surgery
- Neonatology
- Obstetrics & Gynaecology
- Cardiology
- Renal Medicine
- Sleep Medicine
- Regional major Accident and Emergency centre.

There is a Combined Assessment Unit which takes unselected GP or direct emergency referrals, and from A&E. CAU includes the Dept of Liaison Psychiatry and the Scottish Poisons Bureau and Treatment Centre. There are full supporting Laboratory and Diagnostic Radiology Services (including CT, MR, Ultrasound and NM and PET scanning will be available in 2008). There is a full range of lecture theatres, a library and AV facilities.

University of Edinburgh:

The University of Edinburgh was established in 1582 and is one of the largest in the United Kingdom located on a number of prominent sites in Scotland’s capital city. It is Scotland’s premier research university, graded within the top six multi-faculty British Universities in the last national research assessment exercise (90 percent of its academic staff were in units rated 4, 5 or 5*). It has 3,000 academic staff, over 16,000 undergraduate and over 4,000 postgraduate students and an annual expenditure of over £261M for teaching and research. The University is organised into 3 Colleges: Humanities and Social Science, Medicine and Veterinary Medicine, Science and Engineering. Edinburgh University School of Medicine is located within the premises of Royal Infirmary.

Services provided
Adult Cardiac Surgery
Thoracic Surgery

No. Surgeons who undertake adult heart surgery: 6

Departmental Staff: Current

Training Grade surgeons (middle grade): 2

Career Grade surgeons (middle grade): 10

Advanced training VATS Fellow: 1

Foundation Year 1 – Thoracic surgery: 3

Foundation Year 2 – Cardiac surgery: 6
Clinical nurse practitioners – 4

Surgical Care practitioners - 4

Bed capacity:

ITU/ HDU beds: 22, Wards: 24

Consultant Anaesthetists: 11

Service Provision: Outcomes: 2009 - 2010

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Number</th>
<th>Mortality</th>
</tr>
</thead>
<tbody>
<tr>
<td>CABG</td>
<td>507</td>
<td>1.7%</td>
</tr>
<tr>
<td>CABG &amp; VALVE</td>
<td>113</td>
<td>3.01%</td>
</tr>
<tr>
<td>Valve replacement</td>
<td>258</td>
<td>2.3%</td>
</tr>
<tr>
<td>*Others</td>
<td>62</td>
<td>10.1%</td>
</tr>
<tr>
<td>Total</td>
<td>940</td>
<td>2.67%</td>
</tr>
</tbody>
</table>

*Complex, high risk and emergency procedures

Rates of survival after all cardiac surgery: Extracted from: Heart surgery in the United Kingdom, Care Quality commission: http://heartsurgery.cqc.org.uk/

Operations for 3 years ending March 2009: 2794 operations performed: Actual survival rate 96.7%

2008/09 alone: Actual survival rate 97.3% as expected (1050 operations, with expected survival rate range 94.7 - 98.1%)

Rates of survival after aortic valve replacement operations

Operations for 3 years ending March 2009: 438 operations performed: Actual survival rate 98.2%

2008/09 alone: Actual survival rate 98.9% as expected (184 operations, with expected survival rate range 92.7 - 100.0%)

Rates of survival after heart bypass (CABG) operations

Operations for 3 years ending March 2009: 1598 operations performed: Actual survival rate 98.0%

2008/09 alone: Actual survival rate 98.1% as expected (588 operations, with expected survival rate range 96.0 - 99.5%)

Out of 1598 coronary bypass surgery cases carried out at Royal Infirmary of Edinburgh, 94.12% used the left internal mammary.

Post-operative length of stay
Out of 1598 patients admitted to Royal Infirmary of Edinburgh, 9.39% stayed longer than 14 days.

Thoracic surgery: 2009-2010

<table>
<thead>
<tr>
<th>Lung Resections</th>
<th>200</th>
</tr>
</thead>
<tbody>
<tr>
<td>Video Assisted Major lung resections</td>
<td>70</td>
</tr>
<tr>
<td>Other procedures</td>
<td>850</td>
</tr>
</tbody>
</table>

A total number of 1100 thoracic surgical procedures were performed. Of these 200 were Lung resections. During this period, 70 video assisted major lung resections were performed. Since the commencement of programme, 600 major lung resections were performed using video as an assist.

2. West of Scotland Regional Heart and Lung Centre, Golden Jubilee National Hospital:

Location:
Department of Cardiothoracic Surgery,
Beardmore Street,
Clydebank,
West Dunbartonshire,
G81 4HX

No. Surgeons who undertake adult heart surgery: 11

Departmental Staff:

Training Grade surgeons (middle grade): 3(ST6 & SpR’s – Yrs 7&8), 4 – LAT ST1, LAT ST2 posts

Career Grade surgeons (middle grade): 12

Foundation Year 2: 2

Clinical nurse practitioners: 6

Surgical Care practitioners: 3

ITU’s x 2: 2 Short stay – 11 beds, long stay-11 beds

HDU beds: 22

Consultant Anaesthetists: 11
About the unit

The West of Scotland Regional Heart and Lung Centre, based in Clydebank, is a dedicated unit for planned and urgent operations and procedures. One of the largest heart and lung centres in the UK, it combines existing heart services at the Golden Jubilee with cardiothoracic (heart and lung) services previously provided by Glasgow’s Western and Royal Infirmary and thoracic (lung) services from Hairmyres Hospital in Lanarkshire. Spread over three floors of the Golden Jubilee National Hospital, facilities at the centre all include seven theatres and four cardiac catheterisation (cath) labs - special x-ray rooms for the diagnosis and treatment of blood vessel blockages around the heart. The new centre is also home to three of our national services - the Scottish Advanced Heart Failure Service (including the heart transplant unit), the Scottish Pulmonary Vascular Unit and the Scottish Adult Congenital Cardiac Service.

Services provided

Adult Cardiac Surgery
Thoracic Surgery
Adult Congenital Cardiac Surgery

<table>
<thead>
<tr>
<th>Adult Cardiac Surgery</th>
<th>CABG: 702</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CABG + Valve: 192</td>
</tr>
<tr>
<td></td>
<td>CABG + Valve + Other: 72</td>
</tr>
<tr>
<td></td>
<td>Valve: 340</td>
</tr>
<tr>
<td></td>
<td>Valve + Others: 40</td>
</tr>
<tr>
<td></td>
<td><strong>Total: 1349</strong></td>
</tr>
<tr>
<td>Thoracic Surgery</td>
<td>Major Procedures including Lung Resections: 479 cases</td>
</tr>
<tr>
<td></td>
<td><strong>Total Numbers including the staging procedures: 1500 cases</strong></td>
</tr>
<tr>
<td>VAD programme</td>
<td>6 VADS in last calendar year</td>
</tr>
<tr>
<td>Transplant Programme</td>
<td>5 Transplants in last calendar year</td>
</tr>
</tbody>
</table>

Operations for 3 years ending March 2009: Extracted from: Heart surgery in the United Kingdom, Care Quality commission: http://heartsurgery.cqc.org.uk/

Out of 2978 coronary bypass surgery cases carried out at Golden Jubilee, 72.2% used the left internal mammary.

Post-operative length of stay: Out of 2978 patients admitted to Golden Jubilee, 8.53% stayed longer than 14 days.

3. Royal Hospital for Sick Children:

Dalnair Street
Yorkhill
Glasgow
G3 8SJ

The Royal Hospital for Sick Children has 266 inpatient beds, 12 daycase beds, and handles approximately 90,000 out-patients, 15,000 in-patients, 7,300 daycases and
35,000 A&E attendances every year. The hospital provides care for newborn babies right up to children around 13 years of age.

Within the community Yorkhill Division provides a wide range of services from four Child Development Centres at - Bridgeton Health Centre, Possilpark Health Centre, Drumchapel Health Centre and the new Southbank Centre in the Gorbals. These centres run various clinics dealing with speech, hearing, emotional or behavioural problems, as well as organising immunisation programmes in local schools. A wide range of staff provide these services, including consultant community Paediatricians, psychologists, occupational therapists, speech & language therapists and school nurses amongst others.

In its role as a major academic institution, the Division is home to a number of University departments as well as internationally acclaimed research groups. The Division’s significant commitment to the teaching and training of new doctors, nurses, midwives and other health professionals, ensures that highly trained NHS staff are ready to care for the mothers and children of tomorrow.

Consultant Surgeons: 4

Service Provision:

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>Congenital Cardiac Surgery</td>
<td>320 Cardiac Cases including closed and Open heart procedures</td>
</tr>
<tr>
<td>ECMO Service</td>
<td>15-20 cases per year with 2 LVADs done during last year</td>
</tr>
</tbody>
</table>

3. North of Scotland Cardiothoracic Surgery Unit, Aberdeen Royal Infirmary

Provides adult cardiac and thoracic surgical services in the north of Scotland including Orkney and Shetland. Located at the Aberdeen Royal Infirmary Foresterhill site, the unit also has satellite outpatient facilities at Ninewells Hospital, Dundee and Raigmore Hospital, Inverness.

Services provided

Adult Cardiac Surgery
Thoracic Surgery

Location:
North of Scotland Cardiothoracic Surgery Unit (NOS-CTS),
Aberdeen Royal Infirmary,
Foresterhill,
Aberdeen,
AB25 2ZN

No. Surgeons who undertake adult heart surgery: 4

Departmental Staff:

Training Grade surgeons (middle grade): 1(ST3), 3 – LAT ST2, LAT ST1posts
Career Grade surgeons (middle grade): 3

Foundation Year-2: 2

Clinical nurse practitioners: 3

Surgical Care practitioners: 3

ITU/ HDU : 11 beds

**Rates of survival after all cardiac surgery:** Extracted from: Heart surgery in the United Kingdom, Care Quality commission: [http://heartsurgery.cqc.org.uk/](http://heartsurgery.cqc.org.uk/)

Operations for 3 years ending March 2009: 1766 operations performed

2008/09 alone: Actual survival rate 97.9% as expected (613 operations, with expected survival rate range 94.6 - 98.8%)

Rates of survival after heart bypass (CABG) operations:

Operations for 3 years ending March 2009: 1118 operations performed: Actual survival rate 98.3%

2008/09 alone: Actual survival rate 98.6% as expected (366 operations, with expected survival rate range 95.2 - 99.8%)

Out of 1118 coronary bypass surgery cases carried out at Aberdeen Royal Infirmary, 93.11% used the left internal mammary.

Out of 1118 patients admitted to Aberdeen Royal Infirmary, 9.57% stayed longer than 14 days.

Rates of survival after aortic valve replacement operations:

Operations for 3 years ending March 2009: 228 operations performed

2008/09 alone: Actual survival rate 96.4% as expected (84 operations, with expected survival rate range 89.6 - 100.0%)

**Teaching**

**Royal Infirmary of Edinburgh: Co-ordinator:** Mr S Prasad

1. MDT meetings – Cardiac & Thoracic surgery – Every Friday

2. Educational Meetings: Friday 2pm

3. Mortality & Morbidity meetings: 2nd Friday
4. Grand Rounds – Wednesday

5. Honeyman- Gillespie lectures – Once a month

**West of Scotland Regional Heart and Lung Centre, Golden Jubilee National Hospital:**

Co-ordinator: Mr Alan Kirk

1. Educational Meetings: Friday: 1:30pm

2. Mortality & Morbidity meetings:

3. MDT meetings: Adult Cardiac – Valvular Heart Disease, Coronary Heart Disease & Thoracic surgery. Heart Failure and Transplantation meetings

4. WET LAB: Facilities exists at Golden Jubilee National hospital for a one to one and independent sessions

**Royal Sick Children’s Hospital, York Hill, Glasgow: Co-ordinator: Mr K MacArthur**

MDT meetings

**Regional Teaching: Faculty for cardio-thoracic Education & Training**

**WET Lab:** 1) Hands on sessions with a dedicated faculty of Consultant surgeons – 4 monthly intervals

2) Facilities exists at Golden Jubilee National hospital for a one to one and independent sessions

**Future Goals:** Establishment of all day reaching programme once every 3 months, Mock VIVA’s for Exams

**Supra regional:** Additional Training opportunities: Surgical simulation, Paris and Hamburg Thoracic surgical courses

Success denominators:

**Strengths:**

1. Achievements:
   - 5 trainees have been appointed as consultants within the last 3 years
   - 1 trainee has successfully completed training – RITA-G and awaiting award of CCT and entry in to specialist register.
   - 1 trainee received CESR- Article 14- entry in to Specialist register

2. Success of these trainees is primarily due to consultant educational supervisors who are known to be excellent trainers.
3. Regular teaching and academic sessions are available at all centres inclusive of wet labs for hands on experience and video conferencing between all centres.

Rotation of trainees between centres and placements to achieve training in specific competencies set out in curriculum

Support to courses and funding by the Deanery and programme:

Cardiac Surgery:

1. Birmingham Review course
2. Coronary artery anastomosis workshop - Liverpool
3. Covedien course – Off Pump/ Mitral valve
4. CALS
5. Sorin- Wet Lab – AVR/MVR & CABG
4. Learning through Experience – STR/ SPR training days- Scottish Training programme – Wet Labs & Presentations- 3 monthly
5. Royal College courses – Basic, intermediate & Advanced
6. Care of Critically Ill
7. South East Deanery Lead Generic skills courses

Thoracic surgery:

VATS ENDO SURGERY- Ethicon – Hamburg

Advanced VATS course – Paris
Severn and Peninsula Deanery:

The South West regional training scheme in cardiothoracic surgery is based on 2 hospitals – Bristol Royal Infirmary (Severn Deanery) and Derriford Hospital – Plymouth (Peninsula Deanery). Overall supervision of the programme is led through the Severn Deanery, however the TPD rotates between the two centres. The trainees rotate between the two training hospitals with approximately half their training at either centre. Appointment to the Cardiothoracic Surgery rotation at ST3 level is undertaken by national recruitment.

There are 4 deanery approved training posts in Bristol with two Academic Clinical Fellows (ACF’s), Plymouth has 5 deanery approved training posts

Rotation Information:

Expected rotation arrangements for this programme are:

- Nationally selected trainees will rotate between Bristol and Plymouth spending 2-4 years in either post
- In both centres trainees will spend 6 months in a firm based (consultant clinical supervisor) arrangement under single educational supervisor
- ACFs will be based in Bristol for the first 3 years of their training
- Paediatric cardiac surgery is based in Bristol only and trainees will spend at least 6 months in the unit
- Registrar rotas at both units are compliant with the EWTD. Changes that have been made over the last two years include:
  - Non-resident on call registrar
  - Commitment to firm based training
  - Mandatory day off post on-call
  - Weekly publication of rota allocation to allow planning of non-operating day post on-call
  - Reintroduction of firm based training at core training level
  - Amalgamation of cardiology and cardiac surgical on call at night rota
  - Structured training for core trainees by SCPs in theatre

Trust Generic/Specialty Information:

The Bristol component of the training programme takes place on three separate but closely-linked campuses – The Bristol Heart Institute (BHI)(Adult Heart Surgery, 1700 cases annually), The Bristol Royal Infirmary (General Thoracic Surgery, 950 cases annually) and the Bristol Royal Sick Children’s Hospital (Paediatric Cardiac Surgery, 400 cases annually). There are 15 Consultant Surgeons (including 2 Professors and 2 readers).
Particular strengths include the significant contribution of trainers to training (more than 50% of cases performed by trainees), the wide experience in OPCAB and research with the pre-eminent Academic Surgical Unit, training courses in Aortic Surgery and Minimal Access Surgery, weekly postgraduate seminars and opportunity to work in the out-standing Academic Department. Three NTN’s have been appointed as Consultant Surgeons and 1 NTN is currently in New York doing a Fellowship in adult Cardiac Surgery.

The last 3 years has seen new £65 million purpose-built BHI, the expansion of the Thoracic Surgery Service from 450 cases to 960 annually, development of the minimal access surgery unit (≥100 TAVI’s, 70 MIDCAB & 54 mini-mitrals) and the development of a VATS Lobectomy programme. There has now been the introduction of Aortic and Minimal access courses.

Training in Bristol will comprise time spent in Adult & Paediatric Cardiac and General Thoracic Surgery depending upon the trainee’s career intentions. There will be excellent training in all aspects including OPCAB/minimal-access surgery & VATS resections.

The Plymouth component of the training programme is based at Derriford Hospital, Plymouth which has, in the last two years relocated to the £40 million Sir Terence Lewis Building - The South West Cardiothoracic Centre, performing 1300 adult cardiac and 600 general thoracic procedures annually.

There are 6 full time cardiac consultants and 2 full time thoracic consultants. Minimally invasive oesophageal surgery (MIO) has now relocated from Exeter to Derriford.

Particular areas of specialisation include minimal access mitral and aortic valve surgery, TAVI, AF surgery and aortic surgery

Training has been particularly strong in this region with skilled trainees performing over 50% of the cases. There has been excellent progression of trainees from ST3 level to completion and taking up consultant posts in 100% of the trainees.

Teaching:

There are a number of regular teaching sessions and formal study days arranged throughout the year:

1. Weekly departmental teaching for the junior trainees in Plymouth and Bristol
2. Monthly regional Core Trainee Meetings (Peninsula)
3. Regional study days held 3-4 times per year between Severn and Peninsula Deaneries
4. Aortic Valve Study Day – March 2011 (Peninsula)
5. Aortic Surgical Study Day (Bristol) – Nov 2011 (Severn, Peninsula, Cardiff and Wessex Deaneries)
7. Mitral Study Day and Wetlab teaching – March 2012 – (Peninsula)

The academic component is based at the Bristol heart Institute that links the University of Bristol with the Cardiothoracic Centre in UBHT. There are:

X1 British Heart Foundation Professor of Cardiac Surgery
X1 Bristol University Professor of Cardiac Surgery
X2 Bristol University Readers of Cardiac Surgery
X2 ACFs
X1 Research Fellow

There are a large number of high impact papers published by our trainees each year.
Wessex Deanery & Oxford Deanery Consortium

Deanery Rotation Base

<table>
<thead>
<tr>
<th>HOSPITAL</th>
<th>LOCATION</th>
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<tbody>
<tr>
<td>Southampton General Hospital</td>
<td>Southampton</td>
</tr>
<tr>
<td>John Radcliffe Hospital</td>
<td>Oxford</td>
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</tbody>
</table>

Wessex Deanery is commissioned by NHS South Central, and NHS South West to provide high quality postgraduate medical and dental education and training for Hampshire, Isle of Wight, Dorset, South Wiltshire and the States of Jersey with responsibility for 2,500 trainees as they progress through their training. The Deanery also provides training and development for trainers, educational supervisors and educational leaders in both Primary and Secondary Care.

The Oxford Deanery coordinates the delivery and funding of postgraduate medical and dental education in Oxfordshire, Buckinghamshire and Berkshire. The Oxford Deanery is under the umbrella of NHS South Central Strategic Health Authority to support and training and development for the multi professional NHS workforce in the South Central region of England.

**Rotation Information**

Expected rotation arrangements for this programme are:

- One NTN will be allocated to start at Southampton and one at Oxford
- NTN will rotate between the 2 training centres every 12 months
- Training between ST3 to ST6 are expected to be provided equally between the 2 centres
- Training at ST7 & ST8 level will be accommodated depending on the particular area of specialist interest that the trainee wishes to develop in his/her portfolio

**Trust Generic/Specialty Information**

The newly formed Wessex and Oxford training consortium is based at Southampton General Hospital (SGH), John Radcliffe Hospital (JRH). Both units have had a long tradition of training NTNs and overseas fellows.

The primary strength of both units has been based on clinical and operative exposure. In both adult and congenital cardiac surgery, this would include the full range of standard and advance operative techniques. These include off pump surgery, the use of minimal extracorporeal circulatory support (MEC), minimally invasive surgery, valve repair and sparing surgery, and aortic surgery including thoraco-abdominal aneurysm surgery; Surgery for routine and complex congenital conditions such as AVSDs, TGA’s and HLHS are routinely undertaken. In addition, at both sites transcatheter aortic valve implantation (TAVI) is undertaken for high-risk
aortic valve patients. SGH is a national referral centre for Fontan conversion surgery and JRH has an international reputation for mechanical assist devices in heart failure surgery. There is also a comprehensive thoracic surgery programme with 5 dedicated thoracic surgeons offering a full range of exposure. This programme provides comprehensive training in minimally invasive thoracic surgery, including thoracoscopic lung resection, with an opportunity to have exposure to oesophageal surgery at SGH.

- There are 4 adult cardiac surgeons, 2 adult/ congenital surgeons; 2 congenital cardiac surgeons and 4 thoracic surgeons based at Southampton; Oxford has 4 cardiac surgeons, 1 cardiothoracic surgeon and 2 thoracic surgeons.

- The training ethos is strong within the consortium with approximately 45% of the cardiac surgery cases undertaken by trainees at SGH in 2009-2010 12-month period.

- The academic profile of the Consortium is now very strong. There are 2 professors of cardiac surgery. The current president for the SCTS and chairman of the SAC are members of the consortium. There has been 2 MDs, 2 PhDs awarded and over 130 publications in peer-reviewed journals within the last 3 years.

- On call: John Radcliffe Hospital, Churchill Hospital (Oxford Radcliffe NHS Trust). 3 approved posts. 7 trust fellows at SpR level. Full shift. 1:7 residential on-call.
  Southamton General Hospital. 6 approved posts. 6 trust fellows at SpR level. 1 in 12 hybrid rota. 1:12 residential on-call.
  Both units are EWTR and Band 1a compliant

**Teaching**

- There is a wet and dry lab facility at both centres, which is used for formal teaching twice a year. There is also a homograft bank available at Oxford. The dry lab facility is accessible by trainees on 24/7 basis at Southampton.

- At both centres, there are weekly MDT meeting to discuss complex cases. All clinical activity is stopped so trainees can attend. There is also a weekly TAVI MDT meeting where trainees may attend if available. At oxford journal club for thoracic and cardiac surgery is run on a fortnightly basis. Both centres have weekly grand rounds.

- There is a monthly didactic/ interactive curriculum based teaching. This alternates between Oxford and Southampton and the whole curriculum is covered over a 2-year period. This programme has been running since January 2010.

- Frequent informal tutorials and mock exams are arranged for trainees approaching the FRCS-CTh exam.
WALES

Deanery Rotation Base(s)

<table>
<thead>
<tr>
<th>HOSPITAL</th>
<th>LOCATION</th>
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<tbody>
<tr>
<td>University Hospital of Wales</td>
<td>Cardiff, South Wales</td>
</tr>
<tr>
<td>Morriston Hospital</td>
<td>Swansea, Southwest Wales</td>
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</tbody>
</table>

The Joint Wales and West Midlands Training Consortium offers a modern, comprehensive, fit-for-purpose training programme for Cardiothoracic Surgery, drawing upon the strengths of both Welsh centres, and a number of centres from the West Midlands Deanery. In particular, the consortium offers the full spectrum of broad general as well as specialist cardiothoracic training that can be tailored to an individuals training requirements, whilst maintaining a geographic base. Combined with a pioneering training infrastructure that capitalises on training opportunities, and supported by a robust mechanism for assessment and feedback, trainees on the Welsh Cardiothoracic Rotation have the opportunity to experience training fit for the 21st Century.

Deanery information

The Wales Deanery’s purpose is to support, commission and quality assure education and training of trainees, general practitioners, dentists and DCPs in Wales. This includes the development of innovative models of education and training delivery, building training capacity, delivery of GP and hospital appraisal and leading on postgraduate medical and dental educational research.

The aim is to support an improvement in the health care of people living in Wales by consistently delivering the highest standards of continuing post basic and specialist education for medical and dental healthcare professionals in Wales. In order to meet this commitment we seek to ensure that Wales has a well trained team of professional educators who are equipped with the highest standard of skills, equipment and facilities.

Rotation Information

All Wales Programme
(Training capacity 6 NTNs)

Training Programme Director: Mr Dheeraj Mehta
Chair RSTC: Mr Peter O’Keefe
Post Graduate Dean: Prof Derek Gallon
Specialty Training Lead and Deanery Advisor: Mr Wyn Lewis

The Welsh centres offer comprehensive exposure to adult cardiac surgery including OPCAB, valve replacement & repair, arrhythmia surgery, minimal access aortic valve surgery, aortic root (including homograft & valve-sparing
surgery), arch, thoraco-abdominal, and endovascular thoracic aortic intervention. Exposure to trans-arterial and trans-aortic aortic valve therapies is now available at both Welsh centres, as are opportunities for trainees to acquire catheter skills. Insight into specialties allied to cardiothoracic surgery is encouraged through structured placements in areas including interventional cardiology, electrophysiology, heart failure therapies, echocardiology and cardiac imaging, perfusion sciences, respiratory medicine and upper GI surgery. A good range of general adult and paediatric thoracic surgery ensures a strong foundation in this specialty, which can be developed to an advanced level through the consortium training programme as required. Sub-specialty training in Transplantation, paediatric cardiac, advanced aortic, and ventricular support therapy is also provided through the consortium.

The first NTN was recruited to this new programme in 2009, with currently four trainees following the new format which benefits from numerous enhancements addressing the challenges and requirements of cardiothoracic trainees in the 21st Century:

- European Working Time Directive compliance, with NTNs functioning ‘outside’ non-training, service-orientated rotas and shifts. NTNs are therefore supernumerary to service requirements and can take full benefit of training opportunities.

- Full engagement with the Integrated Surgical Curriculum Programme (ISCP) providing a framework for structured training, assessment, and supervision.

- Access to Wet-lab training, regional training days, and journal clubs. This includes mandatory attendance at the Royal Society of Medicine Cardiothoracic Section, and the Annual SCTS Meeting.

- Attendance at Royal College of Surgeons’ Cardiothoracic Training Courses incorporated into educational agreements and resourced through study leave budget.

- Integrated training exposure to allied specialties including anaesthesia, critical care, respiratory medicine, oncology, interventional cardiology, echocardiography, electrophysiology, heart failure therapies, device therapies, cardiac imaging, and endovascular therapy.

- Exposure to advance thoracic surgery, Paediatric/congenital surgery, and transplantation via OOPE with the West Midlands Rotation.
All Wales & West Midlands Cardiothoracic Training Programme

ST3: Cardiac Surgery - Morriston (4 months)
Integrated Specialties – UHW (4 months)
Thoracic Surgery – UHW (4 months)

ST4: Thoracic surgery - UHW

ST5 or ST6 Cardiac Surgery – Morriston

ST6 or ST5 Paediatric cardiac surgery (6 Mo) - BCH
Transplantation & thoracic aortic surgery (6 Mo)
   – QEH

ST7 & 8 Bespoke training. Options might include:

1. **Paediatric / Congenital surgery** – supported application for GOSH/BCH programme

2. **Adult Cardiac surgery** – UHW/Morriston with options to develop experience in OPCAB & mitral repair.

3. **Adult Cardiothoracic Surgery** - Morriston/UHW

4. **Adult Thoracic Surgery** – currently OOPE at HoEH, then UHW

Trainee feedback, supported by Deanery QA, has been instrumental in assignment of trainers and training posts within the recently reconfigured rotation. Feedback from NTNPs is sought regularly by the PD, both informally, and formally at RITA/ARCP, to ensure that the Programme is fit for purpose. A recent PMETB trainee survey undertaken in 2010 was very positive in respect of the training programme, the support offered, and the quality of training received.

Trainee experiences of the reconfigured Welsh Cardiothoracic Rotation were recently highlighted in a presentation delivered to the Trainees Forum at the 2010 SCTS Annual Meeting.
Trust Generic/Specialty Information

There are two hospitals involved in the Welsh component of the rotation:

Department of Cardiothoracic Surgery
University Hospital of Wales,
Cardiff and Vale University Health Board,
Cardiff

Educational Lead: Ms Margaret Kornasczeweska

**Training capacity: 4 NTNs - supernumerary**

Middle grade: 4 SAS, 7 CF/LAS; Full shift rota

Core training grades: 1 FP2, 2 CT1, 2 CT2; Partial shift (participate in H@N)

4 Nurse Practitioners/Case Managers

2 Surgeons’ Assistants, 1 Trainee Surgeons’ Assistant

Seven substantive consultants (five cardiac, one cardiothoracic, one thoracic) undertake adult cardiac (5.5 WTE), adult & paediatric thoracic surgery (2 WTE).

Cardiac surgery includes coronary revascularisation with a substantial (25%) OPCAB component, valve replacement & repair, arrhythmia surgery, minimal access aortic valve surgery, aortic root (including homograft & valve-sparing surgery) arch, thoraco-abdominal and endovascular thoracic aortic intervention. A trans-catheter aortic valve replacement service was established in 2011. Programmes for minimal access CABG and mitral valve surgery are planned to commence in 2012.


At UHW, NTNs were exposed to 1,526 cardiac operations between 01/04/06-30/09/10, and contributed to 960 of these cases as operating surgeon (326, 21.4%) or as contributing 1st assistant (950, 62.3%). Thus NTN’s contributed to 83.7% of cases to which they were exposed.

Between 2009 and 2011, ST3/4 trainees performed some part of 232 thoracic cases, while a further 294 cases were performed by the trainee as operating surgeon. Trainees perform at least some part of almost every case to which they were exposed.
Regular Training activities:

The weekly timetable of meetings is given below:

<table>
<thead>
<tr>
<th>MONDAY</th>
<th>TUESDAY</th>
<th>WEDNESDAY</th>
<th>THURSDAY</th>
<th>FRIDAY</th>
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<tbody>
<tr>
<td>AM</td>
<td>Cardiac MDT</td>
<td>ECHO Meeting</td>
<td>Electrophysiology meeting</td>
<td>Cardiac/TAVI MDT</td>
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<td></td>
<td>Lunchtime Grand Rounds</td>
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<td>Lunchtime meeting</td>
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<td>PM</td>
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<td>Monthly Wet-lab teaching</td>
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Multi-disciplinary team meetings take place weekly for coronary disease patients (2), lung cancer patients (3, two off-site, 1 on-site with teleconferencing): multi-disciplinary educational meetings take place weekly for echo imaging & electrophysiology. There is a weekly one hour meeting where cases / learning points are presented by cardiology & cardiac surgery. Trans-catheter aortic valve surgery is serviced by a weekly dedicated MDT and a monthly Joint MDT with Morriston Hospital.

Monthly clinical governance meetings take place rotationally with a half-day suspension of elective clinical activity across Cardiff & Vale NHS Trust: mortality & morbidity discussions, audit presentations, lessons learnt, topic & evidence base reviews are components of each meeting. Attendance at these educational activities will be mandatory for NTNs, who will be expected to undertake at least one audit project per year with a completed audit cycle: senior trainee responsibilities will be primarily in supporting & directing core surgical trainees & more junior specialist trainees.

Outpatient activity

As NTNs enjoy supernumerary status, their attendance at routine follow up outpatients is not required, this being serviced by the middle grades and Specialist Nurse Practitioners. NTNs thus have the opportunity to see new referrals with their supervising consultant, maximising the educational benefit of such encounters. Some exposure to follow up cases is obviously required, and this is easily accommodated within the outpatient episode.

There is a comprehensive library on the UHW site, internet & intranet access are available easily in the department of cardiothoracic surgery.

Thoracic Surgery:

**Lung cancer MDTs** – held weekly at Llandough Hospital; Royal Glamorgan Hospital; Royal Gwent Hospital, Neville Hall Hospital, Prince Charles Hospital.
**Thoracic OPD** – Weekly OPDs at Llandough, UHW, and Royal Gwent Hospitals.

Interstitial Lung diseases and Histopathology meeting monthly at LLandough.

There are two annual National Thoracic Surgical Courses run at UHW:

- VATS Lobectomy course
- Endobronchial Volume Reduction Course

These are mandatory attendance for NTNs.

Typical ST4 Thoracic Timetable:

<table>
<thead>
<tr>
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<th>Monday</th>
<th>Tuesday</th>
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<tr>
<td><strong>AM</strong></td>
<td>Ward round</td>
<td>MDT &amp; Ward round</td>
<td>MDT &amp; Ward round</td>
<td>Ward round</td>
<td>Ward Round Teaching</td>
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<tr>
<td></td>
<td>Theatre</td>
<td>Theatre or Clinic</td>
<td>Theatre</td>
<td>Theatre</td>
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<tr>
<td><strong>PM</strong></td>
<td>Theatre</td>
<td>Theatre</td>
<td>Theatre</td>
<td>Theatre</td>
<td>Academic activity</td>
</tr>
</tbody>
</table>

**Department of Cardiothoracic Surgery**

**Morriston Hospital, Swansea**

Educational Lead: Mr Pankaj Kumar

**2 NTNs - supernumerary**

Middle grade: 9 SAS, CFs, OCFs; Full shift

Core Training Grades: 2 FP2, 2 CT1

Seven substantive consultants (five cardiac, two thoracic) undertake adult cardiac and thoracic surgery, offering a broad range of general exposure to these areas. A TAVI programme was commenced in 2011.

Trainees contribute regularly to over 90% of the cardiac cases to which they are exposed, and perform 20-30% of them as the operating surgeon.

Currently, there is no thoracic surgical training undertaken at Morriston Hospital.
Teaching

The Welsh Cardiothoracic Educational Programme

New working patterns for NTNs has enabled the provision of dedicated curriculum-based training, taking advantage of available facilities such as the Welsh Institute for Minimal Access Therapy (WIMAT) which provides purpose-built, sophisticated wet-lab and lecture facilities. To this end, in 2009, a regional educational programme was devised and implemented with integration of the Cardiothoracic Curriculum and wet-lab training with formal, national educational courses and meetings.

Twice yearly attendance at Royal Society of Medicine Cardiothoracic Section is mandatory for Cardiothoracic NTNs, and accounts for two of the ten full day-release educational program in Wales. Integrated wet-lab training (curriculum based using RCS / SCTS guidelines for wet-lab training) and theoretical small group teaching activity (based on ISCP curriculum for cardiothoracic surgery) are linked together, each site alternately hosting the program and organising the support to deliver the educational content. The aim is to provide structured Curriculum based teaching in both theory and surgical technique in a format that engenders supported learning and opportunities for assessment outside the clinical and operative environments.

Attendance at the Annual SCTS meeting and the Royal College of Surgeons Cardiothoracic Surgery training modules will be strongly encouraged.

A network of Regional Training Days has been established in the West Midlands and South West England areas, with Welsh trainees participating in both programmes. Recent training days were attended by NTNs in the West Midlands and Bristol. Future Training days are planned for February 2012 in Plymouth and May 2012 in Cardiff.

Academic

Although there are no academic posts within the Department of Cardiothoracic Surgery, strong academic links exist through the Welsh Heart Research institute (WHRI), located on-site at UHW. The WHRI forms part of the Cardiff University Cardiovascular Sciences Interdisciplinary Research Group, bringing together the Schools of Medicine, Biosciences and Pharmacy with the aim of facilitating basic and clinical research in vascular and myocardial biology. A professorial lead is supported by a comprehensive department of readers, senior lecturers, lecturers and postgraduate students, with whom collaborative research activity is actively encouraged. To date, however, there have been no funded research posts in Cardiothoracic Surgery, but it is envisaged that, with the formation of the new Interdisciplinary Research Group, there would be opportunities for trainees to undertake higher research degrees within this framework.
West Midlands

Deanery Rotation Base(s)

<table>
<thead>
<tr>
<th>HOSPITAL</th>
<th>LOCATION</th>
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<tbody>
<tr>
<td>University Hospital Coventry &amp; Warwick NHS Trust</td>
<td>Clifford Bridge Road, Walsgrave Coventry. CV2 2DX</td>
</tr>
<tr>
<td>Birmingham Children’s Hospital NHS Trust</td>
<td>Steelhouse Lane, Birmingham. B4 6NH</td>
</tr>
<tr>
<td>Heart of England NHS Foundation Trust</td>
<td>Bordesley Green East, Birmingham. B9 5SS</td>
</tr>
<tr>
<td>University Hospital North Staffs NHS Trust</td>
<td>Royal Infirmary Site, Princes Road. Hartshill. Stoke on Trent. ST4 7LN</td>
</tr>
<tr>
<td>Royal Wolverhampton NHS Trust</td>
<td>New Cross Hospital, Wolverhampton. West Midlands. WV10 0QP</td>
</tr>
<tr>
<td>University Hospital Birmingham NHS Trust</td>
<td>Queen Elizabeth Medical Centre, Main Drive, Edgbaston. Birmingham. B15 2PR</td>
</tr>
</tbody>
</table>

Deanery information

The West Midlands Workforce Deanery is the second largest deanery in the country with a wide range of specialty and training posts offered. Being centrally located it is easily accessible with an extensive rail, airport and motorway network. The West Midlands has a population of 5.3 million, with a rich mix of cultures and an ethnically diverse population. The population spans the high number of young people in the city of Birmingham to the older population in the more rural parts of the region such as Herefordshire.

Rotation Information

Expected rotation arrangements for this programme are:

- Rotations are divided into 2 x 6 month posts.
- Trainees are likely to rotate through most of the hospitals detailed in the rotation.

Teaching

Training within departments is supported by the monthly regional teaching programme and the yearly Midlands Cardiothoracic Meetings. The commitment to training goes beyond the region. A number of national teaching courses were established by and are run by faculties that include a strong West Midlands presence (The Birmingham Review Course, The DSTS, The Intermediate Cardiac Skills Course, and The Birmingham Professional Development Course).

The training programme is individualised for each trainee and does not follow a fixed pattern. During the first 4 years of the programme training in the core aspects of the specialty is offered. This includes at least 1 year of thoracic surgery and 6 months of
paediatric surgery. In the subsequent final 2 years trainees are helped to pursue training in areas of subspecialisation or specific interest.

YORKSHIRE AND THE HUMBER

Deanery Rotation Base(s)

<table>
<thead>
<tr>
<th>HOSPITAL</th>
<th>LOCATION</th>
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<tbody>
<tr>
<td>Leeds General Infirmary</td>
<td>Leeds</td>
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<tr>
<td>St James University Hospital</td>
<td>Leeds</td>
</tr>
<tr>
<td>Northern General Hospital</td>
<td>Sheffield</td>
</tr>
<tr>
<td>Castle Hill Hospital</td>
<td>Hull</td>
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</table>

Deanery Information

The Yorkshire and the Humber Postgraduate Deanery is keen to attract high calibre candidates from across the UK to practice within the region. Yorkshire and the Humber offers a wide range of locations and trusts for trainees to work within, and looks to continuously support a family friendly approach to training. With locations ranging from the diverse cities of Hull, Leeds and Sheffield, all of which offer vibrant nightlife and city living, to the beautiful rural areas of North Yorkshire and North East Lincolnshire, Yorkshire and the Humber has something for everyone. First rate training is delivered on all sites and, coupled with a robust Quality Assurance process, this ensures that trainees gain the most experience possible from the exciting opportunities available for training and career progression.

Since May 2010, following the Deanery changes resulting from the new Strategic Health Authority Configurations in 2006, the Yorkshire and Humberside Training program has included four training centres. The addition of an established University Hospital has significantly increased the strength of an already successful program. The Deanery now offers a comprehensive training program. In addition to the broad speciality there will be training opportunities to gain experience in aortic surgery, mitral valve repair, AF ablation surgery, oesophageal resections, mesothelioma surgery and major chest wall resections. The Deanery has funded and appointed an assistant Training Program Director to oversee regional teaching program for the trainees.

Rotation Information

The training program rotates between the four training centres. Trainees would spend one year at each of the training centres during the first four years, rotating between posts every 6 months on the 1st of February and the 1st of August. Each of the training centres can offer significant training opportunities to at least two trainees and for the final two years trainees would elect where they wish to continue their training in the program. The aim is that senior trainees would be supernumerary. Any trainee wishing to specialize in thoracic surgery should be able to gain as wide an exposure as possible in all three thoracic surgical centres.

Transplant surgery is optional and could be arranged as a period of Out of Program Training (OOPT)
**Trust Generic/Specialty Information**

**Leeds General Infirmary**

The cardiac Unit was created in 1997 following the centralisation of all cardiac surgery in Leeds to the Leeds General Infirmary. The Cardiac Surgery service operates from ward and theatre facilities in the Jubilee Wing of the LGI with Theatres and all critical care facilities co-located and the ward beds on the cardiovascular floor of the facility.

Therein an outpatient department, 16 inpatient beds, 2 theatres and 14 critical care beds that are co-located level 2 & level 3 to enable flexible use of this capacity to meet service needs.

The unit performs over 1100 cardiac cases per year, with up to 200 operations for congenital heart disease. Middle grade surgeons contribute to over 90% of PBA cases and perform over 30% of cases.

Surgical staff includes:
- 9 Consultant Surgeons
- 2 NTNs
- 7 Clinical Fellows at Registrar level
- 4 Surgical Care Practitioners

Services to patients include:
- Mitral valve Surgery
- Off-pump coronary artery bypass grafting
- Aortic surgery with access to TAVI

**St James University Hospital**

The largest teaching hospital in Europe with an extensive MRC cancer centre, the thoracic surgical centre at St James is now one of the largest thoracic centres in the country with outpatient facilities, a 25 bedded ward, hob facilities, two theatres plus extra theatre sessions and access to the large ITU.

The unit performs over 300 major cases a year with a large number of endoscopic and minor procedures. Trainees, depending on experience, are involved in all PBA cases performing all or part of the case.

Surgical staff includes:
- 4 Consultant Surgeons
- 1 NTN
- 1 LAT
- 6 Clinical Fellows at Registrar level

Services to patients include:
- Endobronchial laser and photodynamic therapy (PDT)
- VATS lung resections
Major chest wall resections

Northern General Hospital

Cardiothoracic surgery services for the North Trent population of 1.8 million are located within the South Yorkshire Cardiothoracic Centre, Chesterman Wing, Northern General Hospital. With 5 dedicated cardiothoracic theatres, 28 cardiac surgery beds and 20 thoracic beds, 24 theatre recovery beds, progressive care beds and cardiac Intensive Care unit beds.

The unit performs over 1000 cardiac cases per year with middle grade surgeons contributing to over 90% of PBA cases and performing 23% of cases.

Surgical staff includes:
- 9 Consultant Surgeons
- 2 NTNs
- 1 LAT
- 7 Clinical Fellows at Registrar level
- 3 Surgical Care Practitioners

Services to patients include:
- Mitral Valve Surgery
- AF Ablation surgery
- Aortic surgery
- VATS lung resections and lobectomy
- Mesothelioma surgery

Castle Hill Hospital

Newly built, opening in 2010, the cardiothoracic centre at Castle Hill Hospital has excellent facilities with two 25 bedded dedicated cardiothoracic wards with 12 Hob beds, ITU beds, 3 theatres, endoscopy suite and outpatient facilities.

The unit performs over 800 cardiac procedures, middle grade surgeons contributing to over 90% of PBA cases and performing 27% of cases. Over 250 major and advanced thoracic cases are performed each year and over 1000 endoscopic and minor cases. Middle grade surgeons contribute to over 80% of all PBA cases and over 60% of minor and major procedures are performed under supervision by trainee surgeons.

Surgical staff includes:
- 6 Consultant Surgeons
- 2 NTNs
- 7 Clinical Fellows at Registrar level
- 4 Surgical Care Practitioners

Services to patients include:
- Mitral valve Surgery
- AF ablation surgery
- Aortic surgery
Minimal access aortic valve surgery
VATS lung resections and lobectomy
Mesothelioma surgery
Endoscopic laser
Oesophageal surgery

Teaching

Hospital based teaching programs

Each unit provides adult cardiothoracic training with paediatric surgery at the LGI.

There are weekly teaching sessions at each hospital covering the syllabus and including journal clubs.

Wet lab facilities are available at Leeds, Sheffield and Hull.

The Deanery has funded and established simulation facilities in each teaching centre.

Regional teaching program

The Deanery has funded and appointed an assistant Training Program Director to oversee regional training. At present there is a 6 monthly training day and it is hoped to extend this in the near future to two monthly with a commitment for support from the Deanery and to include surgical simulation.