School of Medicine

MBBS - YEAR 6

2011/12

**Neurology**

Handbook

COURSE LEADERS

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NEUROLOGY

YEAR 6

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**Section 1: Introduction**

**The case for Learning about Disorders of the Nervous System:**

1. Disorders of the nervous system (DNS) account for:
   1. 15% of consultations in general practice. Common symptoms being:
      1. Headache (20% of referrals to neurologists)
      2. Blackouts (20% of referrals to neurologists)
      3. Fatigue
      4. Dizzy spells
      5. Inter-vertebral disc disease
      6. Falls
   2. 20% of emergency medical admissions
   3. A high proportion of the disability (particularly severe and progressive disability) in the population (20 cases/1,000 people)
   4. 10% of the population visit their GP for a neurological problem each year.
2. The nervous system (muscle, peripheral nervous system, spinal cord and brain) is by far the most complex system in the body. Two surveys of UK medical students have shown that they and medical graduates viewed neurology as more difficult than other medical specialities and the respondents judged themselves as having less knowledge of neurology and less confidence in managing neurological complaints. They also requested more exposure to neurology bedside teaching, outpatient clinics and patients.
3. Neurodegenerative conditions rise exponentially with age. The UK population averaged over 50 years for the first time in 2009. The future socio-economic burden of elderly people with neurodegenerative disorders represents a very significant problem to our society.
4. Issues relating to death, both its definition (brain stem death) and the controversies around assisted suicide are predominantly neurological. Furthermore, the concept of free will and transfer of power of attorney are again primarily related to functions of the nervous system.

Clinical neurology is therefore an important medical specialty in which you need to have basic competencies, to ensure that when you encounter these patients you can appropriately deal with them. You have already no doubt had some exposure to neurological patients during your previous training and so we encourage you to deepen your knowledge of nervous diseases.   
In particular we emphasise the importance of being able to take a neurological history and carry out a thorough neurological examination.

This handbook has been written to provide you with all the information you require during the two weeks you will be participating in our teaching course on clinical neurology.

**Teaching sites:**

You will have been allocated for your neurology teaching to one of five sites: *Charing Cross, Hammersmith, Chelsea and Westminster, Northwick Park* and *St Mary’s*. In **Section 2** you will find the names of the course coordinators on the different sites and in **Section 3** the timetables for each site. **Please look carefully at your timetables.**

**The Neurology Curriculum**

In **Sections 4** we give some advice for students beginning the neurology firm, and in **Section 5** you can find an abbreviated form of the Association of British Neurologists’ core curriculum for MBBS students. It contains the elements of neurology which are considered to be appropriate for MBBS students to know by finals. The overall learning objectives (**section 5**) should ensure that by the end of the firm you have acquired the following basic concepts and skills:

1. How to obtain a complete neurological history, which allows an appropriate differential diagnosis and the subsequent management of the patient.
2. How to conduct a thorough neurological examination (a proforma to use for the history and examination will be made available). You should use this format for clerking neurological patients.
3. How to formulate a differential diagnosis based on lesion localisation, time course and other relevant history.
4. When to order appropriate diagnostic studies for the evaluation of neurological patients.
5. How to evaluate and treat patients with the following important and common disorders: headache, stroke, epilepsy, brain tumours, Parkinson’s disease, spinal cord compression multiple sclerosis, nerve and muscle disorders, dizziness, ataxia, coma, head and spinal cord trauma.

**Wednesday mornings:**

We will bring all groups together every Wednesday morning for teaching sessions, which all of you should attend in the lecture theatre at Charing Cross (usually 10LT, but please refer to schedule in Section 2). These neurology sessions will consist of:

1. 9.00 a.m.: Lecture on either:
   1. *Neurology for Finals* or
   2. *Acute Neurological Emergencies*
2. 9.45 a.m.: Case vignettes
3. 11.00 a.m.: A patient presentation.

**N.B. The previous day the students based at Charing Cross, after discussion with the neurology registrar, should obtain a suitable neurological patient to present to the consultant in the Wednesday meeting.** **The patient should be brought by the student to the lecture theatre at 11 a.m.**

The remaining sessions will be based at the hospital to which you are attached (except for the *Hammersmith Hospital and Chelsea & Westminster students* who will come to *Charing Cross* on Fridays). You will be expected to clerk patients on the wards *and* *follow them up regularly*, and to participate inother ways in the work of the clinical team to which you are attached.   
You will have teaching based in the outpatient clinic and on the wards. The exact distribution of these sessions, and their timing, will vary from one site to another. For each hospital, one teacher will be designated as having responsibility for the firm (see Section 2). Section 2 also has details of where you should go on the first day of the firm and of contact people at the local hospital bases to which you will be attached.

**Section 6** details a small number of reference books and web based material which you are encouraged to consult.

**Section 7** contains case vignettes which you are encouraged to work through on your own and with the help of the teaching staff.

**Final assessment at end of the neurology firm:**

Section 8 shows the assessment form and the *Neurology Firm Score Sheet*, which varies a little between hospital sites but will be based on handing in your signed form to the administrator at your site. This is a formative assessment and is for your benefit and does not contribute to final examinations, where neurology will be assessed as part of Medicine in the Part 6 examinations.

**Feedback:**

**Student On-Line Evaluation system (SOLE)** has been introduced to capture student feedback. The evaluation system will be available on the teaching intranet and will work by presenting a series of screens to each student. You will be asked to complete two sets of eight questions relating to the attachment. The system will allow you to enter feedback relating to the specific neurology firm to which you are attached. *Please note that you will be able to enter your evaluations for a period of 2 weeks towards the end of each firm*- the last week of the attachment and the first week of the next attachment. You will not be able to enter your evaluations before or after this time.

**Leave**

Leave must be booked in accordance with the Year 6 guidelines using the appropriate form. During the attachment, you may take up to one week of planned leave provided that this has been agreed at least 4 weeks beforehand with at least one of your site co-ordinators (see Section 2) and that you yourself have informed the consultants to whom you are attached.

**Troubleshooting**

We hope that you will find the attachment interesting and stimulating. If you encounter any problems during the attachment, it is best to raise these with the consultant to whom you are attached, or the co-ordinator at your hospital (see Section 2). Alternatively, you are welcome to contact one of the two firm co-ordinators (contact details also given in Section 2).

**Failing the firm**

Students on the Neurology firm are expected to diligently attend the teaching sessions and to clerk patients on the ward. Failure to attend will result in the possibility of referral and the requirement to retake the firm.

**Section 2: Coordinators and hospitals**

**Course coordinators**

|  |  |  |  |
| --- | --- | --- | --- |
| SPECIALTY | CO-ORDINATOR | TELEPHONE | **E-MAIL** |
| Neurosciences | | Dr Peter Bain | 020 3311 1182 | p.bain@imperial.ac.uk |
| Neurosciences | | Dr Charles Kaplan | 020 3311 1189 | Charles.Kaplan@imperial.nhs.uk |

**Site coordinators**

|  |  |  |
| --- | --- | --- |
| SITE | **NEUROLOGY** | |
| **Charing Cross Hospital**  **Course Administrator** | Dr Charles Kaplan  020 3311 1189  [charles.kaplan@imperial.nhs.uk](mailto:charles.kaplan@imperial.nhs.uk)  Lorna Stevenson  [l.stevenson@imperial.ac.uk](mailto:l.stevenson@imperial.ac.uk).  Tel: 020 8383 5525 | Dr Peter Bain  020 3311 1182  [p.bain@imperial.ac.uk](mailto:p.bain@imperial.ac.uk) |
| **St Mary’s Hospital** | Dr Carolyn Gabriel  020 331 27782  [carolyn.gabriel@imperial.nhs.uk](mailto:carolyn.gabriel@imperial.nhs.uk) | |
| **Chelsea & Westminster Hospital** | Dr Angus Kennedy  0203 315 8320  [anguskennedy@uk-consultants.co.uk](mailto:anguskennedy@uk-consultants.co.uk) | |
| **Hammersmith Hospital** | Professor Poala Piccini  020 8383 3773  paola.piccini@imperial.ac.uk | |
| **The Hillingdon Hospital** | Dr Wojtek Rakowicz  01895 279783  [Wojtek.Rakowicz@thh.nhs.uk](mailto:Wojtek.Rakowicz@thh.nhs.uk) | |
| **Northwick Park Hospital** | Dr Siobhan Leary  020 8869 2623  [siobhan.leary@nwlh.nhs.uk](mailto:siobhan.leary@nwlh.nhs.uk) | |

**Firm reporting details by site**

|  |  |  |
| --- | --- | --- |
| SITE | TIME | **CONTACT** |
| **Charing Cross Hospital** | 9.30 am  10.00 am | 1. Report to the Undergraduate Office (Reynolds Building) to collect your Neurology Firm Handbook and Timetable.  2. Go to the Neurology wards (currently 10N & stroke unit) and clerk a patient (in pairs) to present to Dr Bain at 2.00 p.m., or alternatively attend neurology clinics or neurosurgical theatre (see timetable) |
| **St Mary’s Hospital** | 9.00 am | You will be given an up-to-date timetable at the 9am Welcome Session (to St Mary’s) in the Anthony de Rothschild lecture theatre, 2nd floor medical school. Then go to clinic as per timetable for the rest of the morning. Any questions to Dr Gabriel’s secretary Zain Hasnain, Neurology dept, Cambridge Wing (opposite switchboard x 27882), or the SHO by bleep. |
| **Chelsea & Westminster Hospital** | 9.15 am | Please collect neurology handbook from the secretaries office, Lift bank D, 4th Floor. Then go to meet Dr Kennedy in the OPD for instructions. |
| **Hammersmith Hospital** | 9.00 am  9.30 am | Report to the Undergraduate Office in the Wolfson Centre to collect Neurology Firm Handbook and Timetable.  Meet Dr Paul Su ([paul.su08@imperial.ac.uk](mailto:paul.su08@imperial.ac.uk)) in the Wolfson Centre for introduction. |
| **The Hillingdon Hospital** | 9.30 am | Report to the office of Nav Rizvi, Undergraduate Teaching Co-ordinator, 1st floor, Education Centre. |
| **Northwick Park Hospital** | 9.30 am | Report to Anup Jethwa [a.jethwa@imperial.ac.uk](mailto:a.jethwa@imperial.ac.uk) or Maggie Ross, Teaching Co-ordinator, Undergraduate Department, Level 6U 011, Medical Education Centre, Northwick Park Hospital. Tel: 020 8869 3170 |

**Section 3: Hospital Site Timetables**

*For all hospital sites the details are correct at the time of going to press. Any amendments will be shown on the Course Timetable on the Intranet. Details of changes to local site-specific timetable will be advised locally.*

1. St Mary’s Timetable

**Neurology Department, 1st Floor, Cambridge Wing (opposite old switchboard)**

# **You are expected to clerk & examine all inpatients under Neurology, Neurology referrals recommended by the SpRs and all appropriate Stroke Ward patients**

**Team A** (SpRs James, Alex) Drs Ball (JB)/Gabriel (CG)

**Team B** (SpRs Novraj, Dima) Drs Chataway (JC)/Everitt (AE)/Nicholas (RN)

**Stroke** Unit SpR b1693/1696 SHOs b1697 and 1690 HO b6243

**Wards:** Lillian Holland (LHO) x21721, Grafton Stroke Unit (both 2nd floor Mary Stanford Wing), Major Trauma Ward, 9th floor QEQM - also attend neurosurgical case(s) in theatre (Neurosurg SpR bleep 6349).

**CHECK OP CLINICS RUNNING BEFORE ATTENDING (ESP AT SCH)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **MONDAY** | **TUESDAY** | **WED** | **THURSDAY** | **FRIDAY** |
| **am** | **9 am WEEK 1,** meet UMO team in Medical School. Get up to date timetable, Learning Objectives, Assessment  Forms. Go to outpatients from here:  **9.15 am**  2 Students each  JC Clinic D SMH OP  RN Clinic SMH OP  1 student JB SMH OP  **9am**  AE clinic, St Charles Hospital OP (2 students)  **1pm**  LHO Ward. Meet Neurology SHOs for orientation (bleep if not there) then Ward Clerking LHO/Grafton  *(Clerk cases to present on all WRs/teaching)* | **9am**  Neurology OP:  AE, SMH clinic A (1 student), not 1st of month  CG, SMH clinic A (2 students) Peripheral Nerve Clinic on 1st of month  RN, SMH clinic A (2 students)  Dr Paul Bentley, SCH  (max 3 students)  **10am**  Mr Mark Wilson  Neurosurgery Outpatients, SMH clinic E (2 students)  **1.30 pm**  Clinical Presentation then  Neuroradiology Meeting  CT Dept MDT Room  Level 3 QEQM | Central teaching and clinical demonstration  Charing Cross Hospital  8th floor Lecture Theatre  *If no lecture:*  **9am**  Neurology OP  CG (2 students) | **8am** Trauma round then Neurosurgical teaching session  **11 am** Ward teaching *(Clerk patients to present 1st)* Stroke SpR /Consultant (Grafton ward)  **OR**  **9 am** JB OP SCH  (2 students)  Otherwise:  *Ward Clerking*  *LHO/Grafton Stroke Unit/ referrals elsewhere via SpRs (discuss with SpR and see appropriate ward referrals)*  Webstream Neurology lectures | **8am** Trauma round  **9.30 am**  2 students  AE WR, LHO  **11.30 am**  Clinical Assessment  (LHO)  AE/JB  Otherwise:  *Ward Clerking*  *LHO/Grafton Stroke Unit/ referrals elsewhere via SpRs (discuss with SpR and see appropriate ward referrals)* |
| **pm** | **2 pm**  **Week 1**  JC ward teaching LHO  **Week 2** SpR Team B Teaching LHO/bleep (SHO/other SpR to do if away)  then Ward Clerking LHO/Grafton | Ward Clerking LHO/Grafton  *Clerk cases to present on all WRs/teaching*  Webstream Neurology examination lectures  **2.30 pm**  Mr Sohail Ansari  Neurosurgery Outpatients, SMH clinic G (2 students)  Go to EEG dept and arrange a time to see EEG/EMG/EPs | Free | **WEEK 1 3 pm** SpR Team A  Ward teaching *(Clerk patients to present 1st)* LHO  **WEEK 2 3pm**  CG  Ward teaching + have forms ready  *(Clerk patients to present 1st)* LHO | **12.30 pm**  Medical Grand Round  Cockburn Theatre  **1.30 pm**  **Week 1**  Bedside teaching RN  (LHO)  *(clerk 1st)* |

* Admin Lead: Zain Hasnain, Neurology Dept, Cambridge Wing (x27782)
* Academic co-ordinator Dr Carolyn Gabriel 0207 886 7782; [carolyn.gabriel@imperial.nhs.uk](mailto:carolyn.gabriel@imperial.nhs.uk)
* **PREPARE ASSESSMENT/FEEDBACK FORM FOR DISCUSSION WITH Dr Gabriel ON THE 2ND THURSDAY Of THE FIRM**
* Details are correct at the time of going to press. Any amendments will be shown on the Course Timetable on the Intranet. Details of changes to local site-specific timetable will be advised locally.

B. Charing Cross timetable

| **Charing Cross Campus** | **Time** | **Topic** | **Lecturer** |
| --- | --- | --- | --- |
| **Monday AM** | 9.30  10.00 (1st week), 09.00 (2nd week) | Go to the FEO in the Reynolds Building to pick up your Neurology firm handbook and timetable.  Migraine Clinic (OPD clinics 4&5)  Epilepsy Clinic (OPD clinics 4&5)  Neurosurgery Clinic (OPD clinics 6&7)  Neuro-otology Clinic (ENT Clinic)  Neurosurgery Theatre 13th Floor  *Students to divide into groups of 2 or 3 and attend clinics in rotation.* | Dr R Peatfield  Dr C Dellaportas  Mr D Nandi  Dr B Seamungal  Mr D Peterson |
| **Monday PM** | 13.00  14.00 | Case clerking – 10 North or 11 South  Bedside teaching  Christopher Kennard Library 10th Flr | Dr P Bain or SpR |
| **Tuesday AM** | 8.00  9.30 | Neurosurgery teaching ward round  Kennard Library (10th Floor)  Neurology Outpatients (1st Floor OPD) | Neurosurgical team    Dr C Kaplan  Dr J Wade  Dr O Malik  Dr P Sharma  Dr W Rakowitz  Dr R Shakir  Dr J Vaughan |
| **Tuesday PM** | 14.00  16.00 | Case clerking -10 North  Bedside teaching 10 North | Dr R Pearce or SpR |
| **Wednesday AM** | 9.00  12.30: | Central teaching at Charing Cross.  Lectures and case demonstration\*  10th Floor LT | Neurology consultants  (se lecture rota) |
| **Wednesday PM** | 14.00  15.00 | Free time/Private study  *Optional*:  MDT meeting Kennard Library  Rehabilitation Ward round (10North) |  |
| **Thursday AM** | 9.30  11.00 | OPD Clinics 4 & 5  *(Students to divide between the above consultants)*  EMG/EEG) 3rd Floor, South Wing, Neurophysiology (2-3 students each week in rotation). | Dr R Shakir and  Mr P Ramkoleea  Dr N Khalil |
| **Thursday PM** | 13.00  15.00 | Case clerking – 10 North or 11 South  Bedside teaching – 10 North | Neurology SpR |
| **Friday AM** | 8.00  10.00  11.00 | X-ray meeting – (2 North**,** X-ray filing)  Neurosciences Grand Round  10th Floor LT  Guest speaker or audit (variable)  10th Floor LT | Neuroradiologists  Neurologists  Varied visiting neurologists |
| **Friday PM** | 12.00 | Bedside teaching (10th Floor Kennard Library) | Dr C Kaplan |

\***Wednesday Lectures**: **NB: Charing Cross-based students to clerk a patient to bring to the10th floor lecture theatre at 11 a.m. to present to the consultant. Please discuss the choice of patient with the neurology SpR.**

C. Chelsea & Westminster timetable

Details are correct at the time of going to press. Any amendments will be shown on the Course Timetable shown on the Intranet. Details of changes to local site-specific timetable will be advised locally. **NB The timetables for weeks 1 and 2 are different**:

**Timetable; Week 1**

| **Chelsea & Westminster** | **Time** | **Topic** | **Lecturer / Location** |
| --- | --- | --- | --- |
| **Monday AM** | 8:45am | Meet Dr. Angus Kennedy | Dr A Kennedy  Outpatients 3 |
|  | 9:00am | Read article about neurological examination first  Watch DVD about Neurology examination  Read articles of neurological history and examination | Speak with Houseman/Registrar (bleep 5208) and collect list of inpatients  Look through clerking booklet  Read handout about examination technique  Each member of the firm should clerk four or five patients |
|  | 11:00am | Meet Houseman | Nell Gwynne |
| **Monday PM** | 1:00pm | Neurology Departmental Meeting | 5th Floor just inside theatre doors |
|  | 2:00pm | History Taking | Dr A Kennedy  Outside Dr Kennedy’s office / (*Management 3)* |
| **Tuesday AM** |  | Ward work  Optional Clinic 1 person | CW Clinic 3 |
| **Tuesday PM** | 2.30pm | Registrar Teaching  Half student groups joins Dr Kennedy for ward round | Neuro Reg / Nell Gwynne  Dr A Kennedy / Medical Day unit |
| **Wednesday AM**  **(CXH)** | 9.00am | Core lectures and Consultant teaching session | Charing Cross Hospital  10th Floor lecture theatre |
| **Wednesday PM** |  | Free time/personal study |  |
| **Thursday AM** |  | Ward work / Optional Clinic 1 person | CW Clinic 3 |
| **Thursday PM** | 1:30pm  3.00pm | X-ray meeting  Tutorial – Place TBA with Dr Davies | Dr R Chinn / Radiology Conference Room – 1st Floor  Dr Nick Davies |
| **Friday AM**  **(CXH)** | 9:00am  10:00am  11:00am | Tutorial CXH – Topic Cranial Nerves  Neuro Grand Round  Alternate week lecture | Dr J Janessen / Kennard Library 10th Floor East, CXH  CXH 10th floor lecture  CXH 10th floor lecture |
| **Friday PM** | 2:00pm | Tutorial -  CW  Examine Upper Limb | Specialist Registrar |

**Timetable Week 2**

|  |  |  |  |
| --- | --- | --- | --- |
| **Timetable Week 2 - Chelsea & Westminster** | **Time** | **Topic** | **Lecturer / Location** |
| **Monday** | 9:00am | Ward work  Optional Clinic 1 person | CW Clinic 3 |
|  | 11:00am | Present case FY1 and 2 | Nell Gwynne |
|  | 1:00pm  2pm | Neurology Departmental Meeting  Tutorial | 5th Floor in theatres  Dr A Kennedy / Management 3 |
| **Tuesday AM** | 9:00am | Ward work  Optional Clinic 1 person | CW Clinic 3 |
| **Tuesday PM** | 2.30pm | Registrar Teaching  Half student groups joins Dr Kennedy for ward round | Neuro Reg / Nell Gwynne  Medical Day unit |
| **Wednesday AM**  **(CXH)** |  | Core lectures and outpatient teaching session on | Charing Cross Hospital  10th floor Charing Cross Hospital |
| **Wednesday PM** |  | Free time/personal study |  |
| **Thursday AM** | 9:00am | Patient clerking  Ward work  Optional Clinic 1 person | CW Clinic 3 |
| **Thursday PM** | 1:30pm  2.45pm  3.30pm | X-ray meeting within  **MOCK History taking EXAM –**  Tutorial – Place TBA with Dr Davies | Dr R Chinn / Radiology Conference Room – 1st Floor  **on ward**  Dr Nick Davies |
| **Thursday PM** | **5pm** | For debriefing meet to sign appraisal form, present cases and ward round | Dr A Kennedy |
| **Friday AM**    **(CXH)** | 9:00am  10:00am  11:00am | Tutorial CXH – Topic Examination of the Limbs  Neuro Grand Round  Alternate week lecture | Dr J Janessen / Kennard Library 10th Floor East  CXH 10th floor lecture  CXH 10th floor lecture |
| **Friday PM** | 2:00pm | Tutorial – Topic TBA | Specialist Registrar |

**Useful Phone Numbers:**

Dr. Angus Kennedy mobile – 07931 374 625 (Text message only, do not disclose)

Dr. Angus Kennedy’s PA – 020 8675 8672

**Notes**

The objective of the course is to require the skills to obtain a neurological history and to perform and document a full neurological examination.

Each student should clerk a minimum of five patients during the two weeks.  You should produce a list of patients you have clerked countersigned by the person you have presented them to. The clerking for each patient should be recorded in a neurology admission booklet in full

This timetable is a flexible outline for the topics which aim to be covered:

You should also watch the web based neurology lectures and read the articles kept by   
Dr Kennedy’s secretary. Please return these at the end of the firm.

The tutorials with the two Consultants and Specialist Registrar will be used to teach on patients clerked by the medical students.

A list of patients suitable for checking can be obtained from the Registrar (bleep 5208).

 Any patient with a neurological problem is suitable including ward referral to the neurology service from other teams and patients on the stroke team.  Please check with the patient and nursing staff that it is appropriate to clerk someone.

In the event of a consultant being away the Consultants secretary will know whether alternative plans have been made. Whilst everything will be done to maintain the timetabled program, it should be noted that it is not always possible to provide extra tutorials during periods of prolonged absence or annual leave due to the fact that there are only two consultants at Chelsea and Westminster Hospital.

Case vignettes should be discussed with the registrar during their teaching sessions.

Each student should present a patient they have clerked as a part of the overall course assessment.  This should be submitted at the end of the firm.

D. Northwick Park timetable

Changes to the site-specific timetable are likely to be made during the year. Amendments will be shown on the intranet, and students will be provided with an up-to-date timetable at the beginning of each attachment.

| **Northwick Park** | **Time** | **Lecture Topic** | **Lecturer** |
| --- | --- | --- | --- |
| **Monday AM**  **Week 1**  **Week 2** | 9.30  10.00  8.45  9.00 | Registration – Undergraduate Department  Students to allocate clinics / ward rounds / RRU patients  Watch neurological examination video  Stroke round – Haldane Ward  (2 students)  Outpatients – Clinic 3, Main OPD  (2 students)  \*Clerk patients | Anup Jethwa / Maggie Ross  Ask Anup for cassette  Dr J Devine / Dr R Bathula  Dr C Mummery |
| **Monday PM** | 1.30-4.00  2.00  4.00 | Outpatients – Cardiology OPD, 9th Floor St. Mark’s Hospital  (2 students)  Stroke Radiology Meeting – Radiology Conference Room  (4 students)  Fellow Teaching – Student Common Room  (All students)  Wk 1 – history taking  Wk 2 – case history | Dr A Trip  Dr A Nizamuddin |
| **Tuesday AM** | 8.45  8.45-11.45  9.00 | Stroke round – Haldane ward  (2 students)  CMH Outpatients - 1st Floor BECaD  (2 students)  Out-patients - Clinic 2  (2 students) | Dr J Devine / Dr R Bathula  Dr S Molloy  (Sec 020 8453 3714/2247)  Dr S Leary |
| **Tuesday PM**  **Week 2** | 1.45  4.00 | Consultant Teaching - Neurology Office, Level 7, Ward Block  (All students)  Radiology Consultant Teaching – Radiology Conference Room  (All students) | Dr S Leary  Dr A Martin |
| **Wednesday AM** | 9.00-12.30 | Charing Cross central teaching – 10th Floor Lecture theatre | Neurology consultants |
| **Wednesday PM** |  | Free time/personal study |  |
| **Thursday AM** | 8.45  9.30 | Stroke round – Haldane Ward  (2 students)  CMH Outpatients - 1st Floor BECaD  (2 students)  \*Clerk patients | Dr J Devine / Dr R Bathula  Dr C Kaplan  (Secretary 020 8453 2385) |
| **Thursday PM** | 1.00  2.30 | Medical Grand Round – Levi Lecture Theatre  Stroke Consultant Teaching – Haldane Ward | Dr J Devine / Dr R Bathula |
| **Friday AM**  **Week 1**  **Week 2** | 12.00  12.00 | \*Clerk patients  Radiology Consultant Teaching – Radiology Seminar Room  (All students)  MS counsellor – Clinical Rm D, Undergraduate Department  (All students) | Dr R Lingam  J Seagal |
| **Friday PM** | 2.00 | Consultant teaching – RRU, 6th Floor, Ward Block | Dr A Nair |

 Northwick Park Hospital notes:

* All teaching is at Northwick Park site except 2 students go to Central Middlesex Hospital (CMH) on Tuesday and Thursday mornings (check CMH clinics are running) and Charing Cross (10th Floor lecture theatre) on Wednesday mornings.
* Anup Jethwa is the Undergraduate Teaching Coordinator at NPH (020 8869 3170).
* Juliette Thompson is the Undergraduate Teaching Coordinator at CMH (020 8453 2529) – please contact if any problems at the CMH site.
* Following the stroke post-take ward rounds, ask the consultant whether there is the opportunity to attend the TIA clinic that day.
* \*Clerk patients – patients can be clerked on Haldane Ward and Fletcher Ward (SHO Bp 494). Patients for clerking on RRU are listed on the RRU notice board outside the staff room (3 patients per week to be clerked for Friday PM teaching).

E. Hammersmith Hospital timetable

Welcome to the Hammersmith Neurology Rotation. Over the next 2 weeks, you will be learning and reinforcing your knowledge and clinical skills on diseases of the nervous systems through lectures, small group seminars, bedside teaching and self study. This induction guide includes a brief overview of the course and your timetable.

Firstly, like many other hospitals, Hammersmith does not have a dedicated Neurology ward and patients with neurological problems are admitted into general medical wards. As 20% of medical admissions are due to a neurological problem, you will therefore gain plenty of exposure. We encourage you to practice your clerking and examination skills as much as

possible during these 2 short weeks. Secondly, the timetable below has been put together to give you a good range of teaching sessions. Please note that the timetable for the 2 weeks is

different.

**WEEK 1**

|  |  |  |  |
| --- | --- | --- | --- |
| **Day/Site** | **Time** | **Topic & Location** | **Lecturer** |
| **Monday am**  **(HH)** | 9.30 – 10.00 | Wolfson Education Centre for timetable | Induction by Dr P Su |
| 10.00-12.00 | EEG/EMG clinic, Dept of Neurophysiology, 2nd floor, Block C | Dr N Khalil |
| **Monday pm**  **(HH)** | 14.00 | Confirm with SpR after EEG clinic:  Clerking of ward referrals \* for presentation on teaching ward round with  Prof R Wise & SpR (please bleep  9081 to obtain patients details or  alternatively, contact Shazi on  0208 383 3160 or 0207 594 7992) | Prof R Wise & SpR |
| **Tuesday am**  **(HH)** | 9.30-13.00 | OPD Neurology Clinic  Outpatient area B | Prof P Piccini & SpRs |
| **Tuesday pm**  **(HH)** | 14.00-15.30 | Clerking of ward referrals & presentation on teaching ward round  (SpR please bleep 9081) | Dr R Perry & SpR |
| **Wednesday am**  **(CXH)** | 9.00 – 12.30 | Lectures & case demonstration  CXH, 10th Floor Lecture Theatre | Neurology Consultants |
| **Wednesday pm**  **(CXH)** | Free time/Private Study | | |
| **Thursday am**  **(HH)** | alternate week  8.30-9.30 | Peripheral Neuropathy Unit  A block, adjacent to OPD | Prof P Anand & Dr R Shenov |
| alternate week  8:30- 11.30\*\* | Private study or ward clerking |  |
| **Thursday pm**  **(HH)** | 14.00 – 15.30 | Neurology OPD Clinic | Dr Malhotra |
| alternate week  14.00-16.00 | Case presentation by students | Consultant / SpR |
| **Friday am**  **(CXH)** | 8.00-9.00 | X-ray meeting  (2 North seminar room) | Neuroradiologists |
| 10.00-11.00 | Neuroscience grand round  (10th Floor LT) | Neurology Consultants |
| 11.00-12.00 | Guest lecture (10th Floor LT) | Guest lecturer |
| **Friday pm**  **(CXH)** | 13.00-15.00 | Bedside teaching  (10th Floor)  CXH | Dr C Kaplan |

**WEEK 2**

|  |  |  |  |
| --- | --- | --- | --- |
| **Day/Site** | **Time** | **Topic & Location** | **Lecturer** |
| **Monday am**  **(CXH)** | 9.00 – 12.00 | Clerking of ward patients  CXH Neurology or Stroke wards  NB for presentation on Thursday pm at the Hammersmith | Neurology SpR & Junior staff |
| **Monday pm**  **(HH)** | 14.00-16.00 | Confirm with SpR after EEG clinic:  Clerking of ward referrals \* for presentation on teaching ward round with  Prof R Wise & SpR (please bleep  9081 to obtain patients details or  alternatively, contact Shazi on  0208 383 3160 or 0207 594 7992) | Prof R Wise & SpR |
| **Tuesday am**  **(HH)** | 9.00-13.00 | OPD Neurology Clinic  Outpatient area B | Prof P Piccini |
| **Tuesday pm**  **(HH)** | 14.00-15.30 | Clerking of ward referrals \* & presentation on teaching ward round to Dr R Perry & SpR (please bleep 9081) | Dr R Perry & SpR |
| **Wednesday am**  **(CXH)** | 9.00 – 12.30 | Lectures & case demonstration  10th Floor Lecture theatre, CXH | Neurology Consultants |
| **Wednesday pm**  **(CXH)** | Free time/Private Study | | |
| **Thursday am**  **(HH)** | 8:15- 11.30 | MS research & teaching clinic  Sir John McMichael Centre, Area C  **Please** ARRIVE ON TIME (late  arrivals will not be allowed into  this session) | Dr Paolo Muraro |
| **Thursday pm**  **(HH)** | 14.00-15.30  15.30 – 16.00 | Presentation and discussion  of cases clerked at CXH.  Room 231 Cyclotron building  Case presentation & feedback session with course director  Room 234, Cyclotron building | Consultant / SpR  Professor Piccini |
| **Friday am**  **(CXH)** | 8.00-9.00 | X-ray meeting  (2 North Seminar Rm) | Neuroradiologists |
| 10.00-11.00 | Neuroscience grand round  (10th Floor LT) | Neurology Consultants |
| 11.00-12.00 | Guest lecture (10th Floor LT) | Guest lecturer |
| **Friday pm**  **(CXH)** | 13.00-15.00 | Consultant teaching  (10th Floor Lecture theatre)  CXH | Dr C Kaplan |

**Hammersmith Hospital notes:**

* Contact the oncall Neurology Registrar (bleep 9081) for names of patients at 12 noon on Mondays for clerking on Monday afternoon, for presentation to Dr R Perry or SpR on Tuesday pm. [Meet Dr R Perry & neurology SpR in Wolfson Centre at 2pm on Tuesdays].
* On occasions where the research clinic finishes early, or on alternative weeks where students are not required to attend research clinic, please contact the oncall Neurology Registrar for names of patients to clerk on wards.
* For extra in patients, you can contact the medical ShO. Also, Dr Malhotra’s clinic on Thursday mornings at the OPD Neurology clinic at outpatients may also have some general patients.
* The clerking for each patient should be recorded accurately in note pages (clinical notes) in full (history/ investigations/ neurological examination etc).
* ·Whilst everything will be done to maintain the timetabled program, it should be noted that it is not always possible to provide extra tutorials during periods of prolonged absence or annual leave, or due to the fact that consultants have clinics at other hospitals.

**Useful Contacts**

Neurology Registrar on call bleep number: 9081

To bleep from Hammersmith: dial 456, then bleep number, then the extension

number

**Teaching Organiser**: Paul Su, Email: Paul.su08@imperial.ac.uk, Tel:

07976739212

**Contact for clinical queries**:

Prof Paola Piccini Ext: 33773

Email: paola.piccini@imperial.ac.uk

Miss Hyacinth Henry, secretary to Prof Piccini, Ext: 33172

email: hyacinth.henry@csc.mrc.ac.uk

**Registrar** – Dr Sanjeev Rajakulendran – (bleep 9081), Mobile: 07899752099

**F.** The Hillingdon Hospital timetable

|  |  |  |  |
| --- | --- | --- | --- |
| **Day/Site** | **Time** | **Topic** | **Consultant** |
| **Hillingdon** |  |  |  |
| **Monday am** | 9.00 – 12.30 | OPD Neurology Clinic  THH OPD – Reception 8  & Elderly Day Hospital | Dr R Farrell  Dr O Malik  Dr W Rakowicz |
| **Monday pm** | 14.00-15.45 | Ward work  (clerk patients)  Hospital Wards & Alderbourne Rehabilitation Unit | collect patient list from neurology secretaries |
|  | or14.00-15.45 | Spasticity OPD Clinic  Alderbourne Rehabilitation Unit | Dr A Nair |
|  | 15.45-17.00 | Neuroradiology MDT Meeting  X-Ray conference Room | Dr R Farrell  Dr A Parry  Dr W Rakowicz |
| **Hillingdon** |  |  |  |
| **Tuesday am** | 9.00-11.00 | TIA Clinic  THH OPD – Reception 6 | Dr R Farrell  Dr A Parry |
|  |
| **Tuesday pm** | 13.00-14.00 | Hospital Grand Round  Education Centre |  |
|  |
|  | 14.00 | Ward Teaching  Alderbourne Rehabilitation Unit | Dr A Nair |
| **Charing Cross** |  |  |  |
| **Wednesday am** | 9.00 – 12.30 | Lectures & case demonstration | Neurology Consultants |
|  |  |  |  |
| **Wednesday pm** | Free time/Private study | | |
| **Hillingdon** |  |  |  |
| **Thursday am** | 9.00 – 11.00 | Ward work  (clerk patients)  Hospital Wards & Alderbourne Rehabilitation Unit | collect patient list from neurology secretaries |
|  | or 9.00 | Rehabilitation MDT review  Alderbourne Rehabilitation Unit | Dr A Nair |
|  | 11.00-13.00 | Consultant ward teaching  Start at Education Centre | Dr W Rakowicz |
| **Thursday pm** | 14.00-16.00 | Neurology OPD THH  THH OPD – Reception 6  Neurology OPD MVH  MVH OPD | Dr W Rakowicz  Dr R Peatfield |
| **Charing Cross** |  |  |  |
| **Friday am** | 8.00-9.00 | X-ray meeting  (2 North) | Neuroradiologists |
|  | 10.00-11.00 | Neuroscience grand round  (10th Floor LT) | Neurology Consultants |
|  | 11.00-12.00 | Guest lecture  (10th Floor LT) | Guest lecture |
| **Friday pm** | 13.00-15.00 | Bedside teaching  (Kennard Library, 10th Floor) | Dr C Kaplan |

Neurosurgery Teaching Opportunities

Charing Cross Campus

6th Year MBBS Students

**6th Year MBBS students on Neurology firms at all hospital sites are welcome to attend the following neurosurgical learning opportunities:**

|  | **8am - 9am** | **9am – 12pm** | **2pm – 4pm** |
| --- | --- | --- | --- |
| **Monday** | Handover  *Kennard Library* | Theatre Mr Peterson OPD Mr Nandi | Theatre Mr Peterson |
| **Tuesday** | Handover  *Kennard Library* | Theatre Mr O’Neil  OPD Mr Mendoza | Theatre Mr O’Neil |
| **ednesday** | Handover  *Kennard Library* | OPD Mr Ulbricht  OPD Mr O’Neil | Neuro-radiology & neuro-oncology MDT &  Neurosurgery teaching  *2nd Floor Radiology Seminar Room* |
| **Thursday** | Handover  *Kennard Library* | Theatre Mr Mendoza | Theatre Mr Mendoza OPD Mr Ulbricht  OPD Mr Nair |
| **Friday** | Handover  *Kennard Library* | Theatre Mr Nandi  Theatre Mr Nair  OPD Mr Peterson | Theatre Mr Nandi  Theatre Mr Nair |

**Neurosurgical theatres**: Theatres 4 & 7 (Enter via changing rooms on 13th Floor)

**Neurosurgical OPD**: 1st Floor OPD

**Neurosurgical ward**: 11 South

**Lead consultant for Neurosurgery teaching**: Mr Dipankar Nandi,

Contact details: [Dipankar.Nandi@imperial.nhs.uk](mailto:Dipankar.Nandi@imperial.nhs.uk)

**Neurology Lecture timetable**

**July 2010 – May 2011**

# **Charing Cross Hospital campus**

# **Lab-block**

**10th Floor Lecture Theatre**

Contact: Lorna Stevenson

Tel: +44 (0)20 7383 5525

Email: [l.stevenson@imperial.ac.uk](mailto:l.stevenson@imperial.ac.uk)

| **Charing Cross campus**  **WEDNESDAY am** | **Time** | **Lecture Topic** | **Lecturer** |
| --- | --- | --- | --- |
| **28 July 2010** | 9.00am  9.45am  11.00am | Neurology for Finals  Case Vignettes  Clinical Demonstrations | Dr R Peatfield |
| **4 August 2010** | 9.00 am  9.45am  11.00am | Neurological Emergencies  Case Vignettes  Clinical demonstration | Dr P. Bentley |
| **18 August 2010** | 9.00 am  9.45am  11.00am | Neurology for Finals  Case Vignettes  Clinical demonstration | Dr P. Muraro |
| **25 August 2010** | 9.00am  9.45am  11.00am | Neurological Emergencies  Case Vignettes  Clinical demonstration | Dr C Kaplan |
| **08 September 2010** | 9.00am  9.45am  11.00am | Neurology for Finals  Case Vignettes  Clinical demonstration | Dr O. Malik |
| **15 September 2010** | 9.00am  9.45am  11.00am | Neurological Emergencies  Case Vignettes  Clinical demonstration | Dr A. Kennedy |
| **29 September 2010** | 9.00am  9.45am  11.00am | Neurology for Finals  Case Vignettes  Clinical demonstration | Dr B. Seemungal |
| **6 October 2010** | 9.00am  9.45am  11.00am | Neurological Emergencies  Case Vignettes  Clinical demonstration | Dr M. Wetherall |
| **20 October 2010** | 9.00am  9.45am  11.00am | Neurology for Finals  Case Vignettes  Clinical demonstration | Dr P. Sharma |
| **27 October 2009** | 9.00am  9.45am  11.00am | Neurological Emergencies  Case Vignettes  Clinical demonstration | Dr W. Rakowicz |
| **10 November 2010** | 9.00am  9.45am  11.00am | Neurology for Finals  Case Vignettes  Clinical demonstration | Dr J. Janssen |
| **17 November 2010** | 9.00am  9.45am  11.00am | Neurological Emergencies  Case Vignettes  Clinical demonstration | Dr H. Jenkins |
| **1 December 2010** | 9.00am  9.45am  11.00am | Neurology for Finals  Case Vignettes  Clinical demonstration | Dr S Molloy |
| **8 December 2010** | 9.00am  9.45am  11.00am | Neurological Emergencies  Case Vignettes  Clinical demonstration | Prof A. Bronstein |
| **5 January 2011** | 9.00am  9.45am  11.00am | Neurology for Finals  Case Vignettes  Clinical demonstration | Dr J. Vaughan |
| **12 January 2011** | 9.00am  9.45am  11.00am | Neurological Emergencies  Case Vignettes  Clinical demonstration | Dr A. Pambakian |
| **26 January 2011** | 9.00am  9.45am  11.00am | Neurology for Finals  Case Vignettes  Clinical demonstration | Dr P. Bain |
| **2 February 2011** | 9.00am  9.45am  11.00am | Neurological Emergencies  Case Vignettes  Clinical demonstration | Dr R Pearce |
| **2 March 2011** | 9.00am  9.45am  11.00am | Neurology for Finals  Case Vignettes  Clinical demonstration | Dr R Nicholas |
| **9 March 2011** | 9.00am  9.45am  11.00am | Neurological Emergencies  Case Vignettes  Clinical demonstration | Dr M. Johnson |
| **23 March 2011** | 9.00am  9.45am  11.00am | Neurology for Finals  Case Vignettes  Clinical demonstration | Dr R Perry |
| **30 March 2011** | 9.00am  9.45am  11.00am | Neurological Emergencies  Case Vignettes  Clinical demonstration | Dr R Peatfield |
| **11 May 2011** | 9.00am  9.45am  11.00am | Neurology for Finals  Case Vignettes  Clinical demonstration | Dr P. Bentley |
| **18 May 2011** | 9.00am  9.45am  11.00am | Neurological Emergencies  Case Vignettes  Clinical demonstration | Dr P. Muraro |
| **End of teaching year** | | | |

**Teaching Support for Charing Cross Lectures:**

**1. AV Technicians:**

a) Mark Orphan, Tel: 02075940763

[m.orphan@imperial.ac.uk](mailto:m.orphan@imperial.ac.uk)

b) Steve Woodrow, Tel: 02088467228

[s.woodrow@imperial.ac.uk](mailto:s.woodrow@imperial.ac.uk)

**2. Unlocking Lecture theatres:**

1. Evelyn Rouse, Tel: 02075941616
2. Security. Tel: 02033111799 (ext 11799)

**If you encounter any difficulties please let Dr Kaplan or Dr Bain know.**

**Section 4: Advice to students beginning a neurology firm**

Regardless of your ultimate career path, you are likely to encounter patients with neurological problems frequently, and you will need to know at least some basic principles of evaluation and management, if for no other reason than to recognize true emergencies. For many of you, your neurology clerkship will be your only sustained experience taking care of patients with neurological problems. In any case, it may be your first such experience. Here are some tips for making the most of the clerkship:

**1. Review Neuroscience**

You may feel like you forgot all the neuroscience you learned as soon as you took the final exam at the end of year 2, but you will be surprised by how quickly you can relearn it, especially the main points—and those points do come up regularly in patient care. The first step in diagnosing neurological disease is localization (see number 3, below), and for this you must remember at least a few major nervous system pathways and where they run. Treatment decisions obviously require some understanding of neurophysiology and pharmacology. Review these topics before the clerkship if you can, and certainly review the topics that are relevant to any patient you see.

**2. Learn the Neurology examination**

Many students (and many physicians) are intimidated by the neurology exam. It is not that tough. As with other parts of the physical examination, the trick is to develop a systematic approach that you can follow almost without thinking, and this takes practice. The neurology clerkship is the ideal time to get this practice because you will be seeing lots of patients with abnormal examinations (making it easier for you to get a sense of what you are looking for when you check the plantar response, for example) and you will be working with neurologists, who do the exam for a living and can provide you with feedback on your technique and your findings. Your goal during the clerkship should be to learn to do a reliable screening exam. Your secondary goal should be to learn how to supplement the exam with additional tests when a patient’s history or screening examination warrants it. You may wish to consult some of the books available on this topic.

**3. Learn to localize**

With all medical problems, the first step in diagnosis is determining where the problem is.   
This can be especially tricky with neurological symptoms because nervous system pathways can run literally from head to toe. The tests you order (and the treatment you offer) will be very different depending on whether you think a patient’s foot drop is caused by a brain tumour or peroneal compression at the knee, for example. For this reason, neurologists make a big deal of neuroanatomical localization. Whenever you present a patient on the neurology firm, you should be prepared to answer the question, “Where’s the lesion?” Localization is often difficult for medical students, and you should be sure to ask your instructors for help if you’re having trouble. You may also wish to consult textbooks that cover this topic.

**4. Imagine you were first on the scene**

Each time you begin a new clerkship, you face the daunting task of learning a new system with new people, new procedures, new forms, and new expectations. With each patient you see, you should be sure to ask the patient (or informant) how the symptoms started, and then ask yourself, “What would I have done if I had seen the patient at that point? Would I have realized the patient had a neurological problem? What tests would I have ordered? What treatment would I have started?”

These are the questions most relevant to your future practice. Unless you become a neurologist yourself, it is far less important for you to know how to treat a patient with refractory epilepsy than it is for you to know how to recognize seizures in the first place.   
You will probably never be responsible for treating brain tumours, but you are very likely to encounter patients with headaches, and you need to know how to distinguish benign headaches from those caused by structural disease. Ironically, many of the patients you see during your neurology clerkship will be far beyond the point of initial presentation. In most cases, by the time patients see a neurologist they have already been evaluated by one or more general practitioners who have already determined that there appears to be a neurological problem. In some cases, you will be seeing patients for routine follow-up or for an acute management issue whose diagnosis was determined long ago.

**5. Read, Read, Read**

This advice applies to all of your clinical clerkships. Patient care is absorbing and time consuming, and it is easy to become so caught up in it that you neglect to read. Indeed, time constraints may prevent you from ever having a block of several hours at a time to read a book in the usual way. Instead, you may do much of your reading “on the fly.” You should generally carry at least one textbook with you at all times, for use during those 15-minute “down periods” that occur unpredictably throughout the day. A variety of textbooks are available. Most clerkships provide a list of required or recommended books. You should be sure to read about the topics relevant to the patients you are following. Of course, you will not have the opportunity to see patients with every possible neurological problem; over the course of the clerkship you will also need to learn about the entire spectrum of clinical neurology.   
An outline of the topics to cover is included in this document.

**Section 5: Core MBBS Neurology Curriculum**

**Core Knowledge & Clinical Skills**

Be able to record a competent neurological history.

Be able to carry out an appropriate neurological examination.

Understand the basic neuroanatomical and neurophysiological detail which underlies the neurological examination and the interpretation of abnormal physical signs.

**Abbreviated Recommendations of the Association of British Neurologist’s for MBBS Medical Students:**

1. Students should have sufficient understanding of basic neurosciences to support learning about disorders of the nervous system and the principles of their diagnosis and management.
2. A multidisciplinary approach should be encouraged and learning broadly linked to patient experiences, clinically relevant events and opportunities and should be guided by appropriate neurologically trained staff.
3. The newly qualified doctor should have the *skills* to:
   1. recognize what clinical events may indicate a disorder of the nervous system.
   2. obtain, report and interpret an accurate history relating to disorders of the nervous system.
   3. carry out, report and interpret an *appropriate* neurological examination, including of the unconscious patient
   4. formulate a differential diagnosis and implement appropriate monitoring, observation and early treatment in emergency situations
   5. understand the nature and indications (and contraindications) for common neurological investigations and significance of important results
   6. understand the key roles of other medical specialities and the multidisciplinary team in the management of disorders of the nervous system.
4. The newly qualified doctor should have *knowledge* of:
   1. Basic neuroscience to support understanding of clinical practice and to provide opportunities to expand learning and research
   2. Major neurological symptoms
   3. Common and/or important neurological conditions and their management
   4. Common emergency neurological problems and their management
   5. Common investigations and their role
   6. Principles underlying management of neurological disability including an understanding of the relationship between impairments, activity and participation

**The Core Curriculum for Disorders of the Nervous System:**

The learning outcomes for the core curriculum are divided into 5 parts:

1. Scientific basis
2. Clinical skills and understanding
3. Core clinical knowledge
4. Investigation and management
5. Neurological disability
6. **Scientific basis**

Learning outcomes:

Know the:

* 1. essential structures and functions of the brain with particular reference to consciousness, language, and other cognitive functions, behaviour and mood, vision and hearing, breathing and swallowing, movement, sensation and autonomic control.
  2. processes and pathways which lead to voluntary muscle movement starting in the motor cortex including:
     1. the corticobulbar and corticospinal pathways (upper motor neuron)
     2. the lower motor neuron, neuromuscular junction and muscle
     3. role of the extrapyramidal systems including basal ganglia and cerebellum
     4. control of posture and reflex movement.
  3. structure and function of the spinal cord with particular reference to movement, sensation and autonomic control (BP, sphincters and sexual function)
  4. cranial nerves, major nerve roots and main peripheral nerves (including major muscle groups innervated, dermatomal (root) and sensory nerve distributions)
  5. clinically relevant features of the skull and vertebral column with particular attention to the anatomical relations of the cranial nerves, spinal cord and nerve roots to bony and soft tissue structures
  6. anatomical and physiological principles underlying the blood supply and drainage from the brain and spinal cord
  7. broad pharmacological principles as applied to the brain and its milieu
  8. principles regulating intracranial pressure, cerebrospinal fluid formation and its constituents, circulatory pathways and reabsorption
  9. clinically relevant aspects of neural development and ageing processes
  10. broad processes – pathological, physiological, genetic, metabolic, immunological – which result in disordered neural function and relevant public health and epidemiology

1. **Clinical skills and understanding**

Learning outcomes:

Be able to:

* 1. obtain and communicate (in writing and verbally) an accurate history
     1. understand when it may indicate a disorder of the nervous system
     2. extend it appropriately by additional history from a witness or carer   
        (e.g. in the context of dementia, confusional state loss of consciousness)
  2. perform, interpret and communicate (in writing and verbally) a basic neurological examination *relevant* to the clinical problem
  3. use history (particularly the special and temporal evolution of symptoms) and examination findings to suggest an anatomical or system localisation for a neurological problem and a differential diagnosis of common and/or important conditions
  4. request appropriate initial investigations and initiate relevant observation, monitoring and early treatment in certain emergency situations
  5. understand the implications for diagnosing DNS for patients and their families particularly in the context of progressive and/or degenerative disorders
  6. understand the importance of effective and empathetic communication of the diagnosis, the implications for the individuals within their social framework and relevant ethical considerations, particularly those relating to consent and management
  7. **Core clinical knowledge:**

Learning outcomes:

1. *Major neurological symptoms*

Know the nature, mechanism and common causes of important presenting symptoms including:

* + 1. Headaches
    2. Blackouts & loss of consciousness
    3. Dizziness & vertigo
    4. Weakness
    5. Altered sensation
    6. Coma and brain death
    7. Disordered cognition, mood and behaviour
    8. Visual problems
    9. Speech problems
    10. Breathing and swallowing disorders
    11. Incontinence

1. *Common and/or important conditions*

Basic knowledge of the principles of diagnosis, investigation, early management and (where appropriate) prevention of the following:

* + 1. Headache (acute new headache, migraine, tension type headaches)
    2. Raised intracranial pressure and hydrocephalus
    3. Syncope, coma and death
    4. Epilepsy (including status epilepticus)
    5. Head injury (including common complications)
    6. Stroke (including subarachnoid haemorrhage)
    7. Dementia
    8. Meningitis and encephalitis
    9. Brain tumours
    10. Parkinsonism and movement disorders
    11. Multiple sclerosis
    12. Spinal cord and root dysfunction (including spinal cord compression)
    13. Pripheral neuropathy (including Guillain-Barre syndrome & common mononeuropathies)
    14. Neuromuscular disorders (including motor neuron disease, myasthenia gravis and myopathy)
    15. Functional symptoms and presentation of psychological disorders

1. *Emergency neurology*

In order to be able to perform adequately in a foundation programme special emphasis should be given to knowing and understanding causes and factors associated with:

* 1. Sudden loss of consciousness and coma
  2. Epileptic seizures
  3. Acute confusional state
  4. Acute new headache
  5. Acute stroke
  6. Head injury
  7. Spinal cord & cauda equine compression
  8. **Investigation and management**

Learning outcomes:

*a. Investigation*

Know the common investigations for DNS, who undertakes them, how they are requested and/or undertaken and how the results are evaluated: in particular knowledge and understanding of the following deserve emphasis:

* + 1. Use of relevant blood/urine investigations especially in a neurological emergency
    2. CT and brain MRI scanning
    3. MRI scanning for spinal cord, root and some brain pathology
    4. Lumbar puncture (including contraindications)

Understand the general purpose and role of the following investigations and what is entailed:

1. EEG
2. EMG and nerve conduction studies
3. Genetic investigations
4. Angiography
5. Brain, muscle and nerve biopsy

*b.* *Observation and ongoing monitoring*

Learning outcomes:

Understand the importance of observing change in the status of patients with disorders of the nervous system particularly in relation to coma, confusional state or weakness. This should include knowledge of:

1. Glasgow coma scale
2. Routine neurological and general observations
3. Respiratory (spirometry and blood gases) and swallowing evolution in the paralysed patient
4. The role of specific environments (e.g. ITU) to support care

*c. Treatment*

Many DNS have specific treatments and all DNS need to be managed.

Learning outcomes:

Know and understand the principles of treatment including:

1. specific pharmacological interventions (e.g. epilepsy, meningitis, stroke)
2. specific neurosurgical or radiological interventions (e.g. for intracranial mass
3. supportive management of the unconscious or paralysed patient including:
   1. ventilation
   2. nutrition/feeding
   3. bladder & bowel
   4. circulation & skin management
4. contribution of nurses, dieticians, speech & language therapist, physiotherapists and occupational therapists
5. The role of rehabilitation in the management of the patient following an acute neurological disorder or for the maintenance of ability in a chronic neurological disease.

**5. Neurological disability**

Learning outcomes:

Appreciate the frequency of DNS in contributing to loss of activity and participation in the community including understanding:

1. The contribution of neurodevelopmental and learning disorders
2. Impact of injury and acquired neurological disease (including persistent vegetative state) especially in younger age groups
3. The impact of stroke and dementia in the older population

Understand the role of measurement and of common assessment tools in evaluating and monitoring impairment, activity and participation in neurological disorders. For example:

i. Mini Mental State Examination

ii. Barthel Index

* + - 1. Quality of life measures

Understand the importance of a team-based approach to people with long term neurological disorders whether the result of a single event (e.g. stroke, head injury) or a progressive disease (e.g. dementia, Parkinson’s disease, multiple sclerosis etc.)

**Section 6: Key reading and web lectures**

Recommended reading:

The following are basic texts which cover clinical neurology in the level of detail required for the attachment:

The recommended way to examine the peripheral nervous system:

1. *Aids to examination of the peripheral nervous system*. Elsevier, 2000. ISBN: 10: 0-7020-2512-7.

General neurology undergraduate textbooks:

1. Fuller G. *Neurological examination made easy. 3rd edition*. Churchill Livingstone, 2004.

2. Perkin GD. *Mosby’s Colour Atlas and Text of Neurology. 2nd edition.* Mosby-Wolfe, 2004

3. Donaghy M. *Oxford Core Textbooks: Neurology*. Oxford University Press 1997.

4. Lindsay KW, Bone I. *Neurology and Neurosurgery illustrated. 4th edition*. Churchill Livingstone, 2004.

For students interested in taking up neurology as a speciality we recommend the journal:

1. *Practical Neurology*. BMJ Journals. Editor: Charles Warlow.

Web based lectures. [These are available on the college web site]

*On symptoms*:

Loss of consciousness

Altered vision

Sensory symptoms

Difficulty walking

Communication in neurological illness

Red flag headache

Dizziness

*On diseases of the nervous system*:

Parkinson's Disease

Dementia

TIA infarction

Multiple Sclerosis

Motor Neurone Disease

Peripheral Nerve Disorders

Brain Haemorrhage

Infections of the Nervous System

Neuromuscular Disease

Spinal syndromes

Cerebrovascular disease

Epilepsy

Head injury

Migraine

*On neurological investigations*:

Neurological investigation and electromyography

Neurological investigations: imaging

**Section 7: Neurology Case Vignettes**

**CASE 1**

**History**

Daniel Darling, a 78-year-old retired diplomat, had travelled extensively in the Middle East before his retirement at the age of 60 years. He had not been abroad in recent years, being restricted by osteoarthritis of the hips. He had undergone bilateral hip joint replacement surgery but this was only moderately successful. He lived with his wife who was in good health. He was a non-smoker but drank regularly, probably averaging 30-35 units per week.

One week before presentation, he had developed a pain in the region of the left mastoid process associated with irritation in the left ear. The pain had intensified and he had required regular analgesics. Two days before the consultation, he had realised that fluids were tending to dribble from the left angle of his mouth. His wife had accused him of drinking as his speech appeared slurred. On looking in the mirror, he realised he could not completely close his left eye. At about the same time he noticed that noises were exaggerated in the left ear. He felt that his sense of taste had altered and that it was defective on the left side of the tongue.   
His balance had perhaps slightly deteriorated but he denied vertigo. He had no other neurological complaints. Generally he felt less well than normal, although he could not specify any particular complaint. He was on no medication apart from low dose aspirin which his general practitioner had advised after a possible minor heart attack 3 years previously.

Consider:

1. What type of facial palsy is suggested by the history?
2. What is the significance of the altered taste and the hyperacusis?

**Examination**

On examination he appeared reasonably well, although clearly dispirited by his recent symptoms. A general systems examination was unremarkable. He had a blood pressure of 158/88 mmHg and he was in sinus rhythm. His range of hip movements was restricted bilaterally and his gait was a little clumsy.

His fundi were normal and eye movements intact. Facial sensation was normal and his jaw muscles appeared of normal power. He failed to blink with his left eye and its palpebral fissure was widened compared with the right. The sclera of the left eye was slightly infected.   
There was loss of furrowing of the left forehead and a failure of elevation of the eyebrow. There was striking weakness of the lower face on the left; the right was normal. Crude testing of taste suggested it was impaired over the left side of the tongue anteriorly. He was hypersensitive to noise in the left ear. Hearing in the right ear was normal. There was a focal area of redness with scab formation in the left external auditory meatus and a similar area in the region of the left hard palate. The rest of the neurological examination was normal.

Consider:

1. Has the examination confirmed the nature of the facial palsy?
2. What is the significance of the rash in the ear and throat?
3. What might be found if the patient's spinal fluid was examined?
4. What precautions might be needed to avoid any complication of this facial weakness and what outcome would be expected?

**CASE 2**

**History**

Lucile Lillywhite, a 24-year-old woman, had been well prior to her recent illness. She was unmarried but had a steady partner and was using a medium-strength (35 µg ethinyl oestradiol) mixed oral contraceptive. She worked as a secretary and spent much of her working day on a computer. Four days before seeking medical advice she had developed a pain in and above the left eye. The pain was quite substantial, with sharp components and was particularly evident when she looked to the left. Within 24h, she had noticed a fogginess of her vision which she was certain was confined to the left eye. On the day of her consultation she had woken with very little vision in the eye apart from a slight awareness of movement and shapes in the periphery of her vision. She denied any other current symptoms and indicated that her general health was good. There was no family history of any visual complaint. She recalled that about a year earlier she had had some ill-defined parasthesiae in the peripheries of all four limbs which had lasted for approximately a month and then remitted. During that time she noticed that with neck flexion, a brief shock-like sensation had radiated down her spine into both lower limbs.

Consider:

1. What is the explanation for this patient's visual impairment?
2. What is the significance of the symptoms a year earlier?

**Examination**

On examination she appeared well but was anxious. The general systems examination was normal. Her visual acuities were 6/6 right and hand movements left. There was a left relative afferent pupillary defect. The left optic disc was slightly swollen with occasional peripapillary haemorrhages. The right optic disc appeared normal, with intact retinal venous pulsation.   
The visual field of the right eye was normal; that of the left was difficult to assess but there was a severe global reduction of vision perhaps maximal centrally. The rest of the cranial nerve examination was normal.

The limb reflexes were generally brisk with 2-3 beats of ankle clonus bilaterally. The plantars were flexor. The abdominal reflexes were absent. Limb power and tone appeared normal. Finger-nose and heel-knee-shin tests were well accomplished and her gait was unremarkable. Sensory testing was carried out for pain, light touch, joint position and vibration sense and was normal.

Within about a week the pain had resolved and by then she was confident of an improvement in her vision. She was beginning to recognise shapes in the central part of her vision although she had difficulty recognising their colour. By that time, her visual acuity had improved to 6/60 in the left eye.

Consider:

1. Has the examination confirmed the site of the problem causing visual impairment?
2. Are there any other findings from the neurological examination that are significant?
3. What is the working diagnosis?
4. What would be the most valuable diagnostic procedure in this patient?
5. What should you look for in the cerebrospinal fluid, if you decide to test it?

**CASE 3**

**History**

Milton P McCormick, a 25-year-old DIY enthusiast, had always been in good health. For the past 3 years, however, he had had a chronic low back pain which had started after an accident lifting weights in the gymnasium. The pain was episodic, had never radiated and was not accompanied by any lower limb numbness or paraesthesiae.

For some time he had planned to lay cork tiles in his kitchen. As his wife was going to be away for the weekend, he decided to carry out the whole work in her absence. By Sunday evening the job was completed. The work had involved spending much of the day kneeling, so that he could lay the tiles in place and cut them to size. His back pain had become rather worse and he took three aspirin tablets before going to bed.

On getting out of bed the next morning, he realised that his right foot was moving awkwardly. It seemed to flop when he walked and on several occasions he had nearly tripped. He noticed no abnormal sensations in the leg and his left leg and foot seemed to be normal. His back pain had settled to its usual level. He took no immediate action but the problem persisted and he consulted his general practitioner 2 days later who advised a neurological opinion.   
He had no other neurological complaints at that time and his sphincter function was normal. Further enquiry by the general practitioner indicated that all was not well with the marriage, to the point where both partners had been considering a separation. Some of the patient's additional complaints suggested the probability of an anxiety state with depressive features. His sleep pattern had altered and he complained of feeling anxious and irritable during the day. He was finding it more difficult to concentrate at work and had become less enthusiastic about his DIY. He was a non-smoker, seldom drank alcohol and took no medication apart from occasional analgesics.

Consider:

1. Could this be a stress-related problem?
2. Does the distribution of the problem suggest organic neurological disease?

**Examination**

His general systems examination was normal and the neurological abnormalities were confined to the right leg. His back movements appeared a little stiff and painful but straight leg raising was full. Proximal power in the right leg was normal. He had weakness of dorsiflexion of the foot (4/5) and of eversion (4/5). Extensor hallucis longus appeared rather more weak (3/5). Plantar flexion and inversion were intact. The reflexes were unremarkable and the plantars flexor bilaterally. There was possible blunting of cutaneous sensation over the dorsum of the right foot but proximal sensation, including the peri-anal region, was normal. When he walked, the right foot tended to drop and he had to lift the leg unnaturally at the hip to avoid tripping.

Consider:

1. Does the distribution of weakness suggest a particular nerve root or peripheral nerve disorder?
2. What investigation would be of most value?

**CASE 4**

**History**

Luigi Gianetto, a 70-year-old man, was retired and had been in poor health for some years.   
He had been found to be hypertensive at the time of a myocardial infarct 8 years before. Control of his blood pressure had been poor, partly because of poor compliance with medication, which the patient freely admitted. Despite frequent rejoinders, he had continued to smoke 20 cigarettes a day. His alcohol consumption was modest. Four years before he had been investigated for possible polycythaemia but in the end the diagnosis could not be sustained and he had not received treatment.

On the day of admission he had appeared well in the morning but shortly after lunch he suddenly developed an intense headache over the left occipital region. At the same time he almost lost his balance and realised that he was staggering to the left. When reaching out with his left hand to support himself, he found that the hand appeared clumsy. He remained fully alert. He had an ill-defined sense of vertigo and vomited once. He had no other neurological complaints. His angina, which had persisted on and off since his infarct, had been rather worse recently. Besides his blood pressure and angina medication, he was on low-dose aspirin (75 mg/day).

Consider:

1. Where would you place this patient’s stroke?
2. What is the likely pathology?

**Examination**

On examination he was fully alert. His blood pressure was 190/110 mmHg and he was in sinus rhythm. The peripheral pulses were intact. His heart appeared slightly enlarged with a displaced apex and his aortic second sound was accentuated. He appeared rather plethoric and was overweight. His fundi showed arteriovenous crossing changes. There was a first degree jerk nystagmus to the left. The rest of the cranial nerve examination was normal.   
His left hand was clumsy with a tendency to past point. The left heel-knee-shin test was ataxic. Right-sided co-ordination was satisfactory. Limb power and tone appeared normal.   
The reflexes were symmetrical; the left plantar was equivocal, the right plantar was flexor. His sensation was normal. He was reluctant to get out of bed and if he did so, he immediately staggered to the left.

The admitting physician ordered an urgent computerised tomography scan which was performed within 8h of the onset of his symptoms. The scan was normal. The physician diagnosed some form of brain-stem stroke and advised bed rest. Within 72h the patient’s condition had substantially deteriorated. He was now very drowsy and physical examination proved difficult. There appeared to be a slight impairment of abduction of the left eye and the left nasolabial fold seemed flattened. His palate elevated poorly and because of choking he could no longer tolerate oral fluids. The limb signs remained but both plantars were now extensor.

Consider:

1. Has the examination confirmed the site of the pathology?
2. What investigation would be most helpful?
3. Why do you think the patient’s condition has deteriorated and how would you manage the problem?

**CASE 5**

**History**

Marshall Martin, a 50-year-old man, had had little in the way of medical problems until his wife’s death 3 years previously. He lived alone, having never had children. He worked in the computer industry and frequently took trips abroad. Although he had never smoked, he had always drunk alcohol regularly, perhaps averaging 30 units a week in the past. At a company medical a year before, his gamma glutamyl transferase level had been slightly elevated and the company doctor had advised him to reduce his intake. Soon afterwards he fractured his leg in a skiing accident and had to be off work for a month. On his return to work, his colleagues noticed that his work had become a little less reliable and that he periodically arrived late in the mornings. He appeared dispirited by his failure to achieve promotion to a post he had particularly coveted and one that would have dramatically reduced his travel commitment. He began to have bouts of unexplained vomiting which he told his colleagues were attributable to a peptic ulcer. It was noticeable that his appetite had diminished and that he was losing weight. Over a 3-week period, his work attendance became increasingly erratic. During this time, his walking appeared less stable and he complained of numbness in his feet. At the end of this period, he was found in bed at home on a Monday morning by his domestic cleaner. He appeared confused and unwell and she called for an ambulance to take him to hospital.

Only a limited history was possible for the patient. He had clearly lost weight and appeared dehydrated. He was uncertain of the date and of his whereabouts. He suggested that he had been at work regularly and even detailed a major business deal that he had recently completed in Frankfurt. His employers subsequently indicated that he had not travelled to Germany for the past year. He indicated that his alcohol intake had been unchanged.

Consider:

1. What do the patient’s limb symptoms suggest?
2. What is the patient’s mental state?
3. What is the working diagnosis?

**Examination**

On examination his short-term memory was poor and erratic. At the time, he produced details that appeared unlikely to be correct from the known history. His general systems examination revealed a tender liver, approximately 5 cm below the costal margin. He had normal fundi but there was evidence of bilateral sixth nerve palsies with vertical nystagmus on upward gaze. His tongue and limbs were tremulous. He appeared to have bilateral upper and lower limb ataxia. He refused to get out of bed. Power was probably intact and tone normal. The reflexes were present apart from absent ankle jerks. The plantars were equivocal. Sensory testing was difficult but pin prick, at least, appeared blunted in the feet.

Consider:

1. What conclusions can be drawn from the physical findings?
2. What simple blood tests would be helpful in confirming your suspicions?
3. What might computerised tomography or magnetic resonance imaging of the head show?
4. What treatment should be started?
5. What is the likely outcome?

**CASE 6**

**History**

Barbara Bustamente, a 65-year-old woman, had had a myocardial infarct 3 year previously. She was known to be hypertensive and had developed noninsulin-dependent diabetes mellitus the previous summer. Two months before her admission she had complained to her husband of a short-lived episode of clumsiness of the right hand but had not sought medical advice. On the day of her admission she had suddenly become unable to speak while on the telephone to her daughter. Almost immediately she developed weakness of the right arm and leg and had difficulty remaining standing. She was admitted to hospital. Her husband indicated that she was right handed. There was no relevant family history.

Consider:

1. What may be the significance of the event 2 months before?
2. Why is the history of her handedness important?
3. What underlying pathology is suspected?

**Examination**

On examination the patient was alert. She appeared to understand fully and could carry out complex instructions providing she was not required to use her right side. Her spontaneous speech was severely reduced and lacking in grammatical content; often her responses were reduced to single words. Her visual fields were full. The cranial nerve examination was normal, except for a right upper motor neuron facial weakness. She had a moderate (grade 4/5) right-sided pyramidal weakness. Tone was normal, reflexes symmetrical but the right plantar response was weakly extensor. Her sensation appeared intact. Co-ordination on the right side was difficult to assess but appeared normal on the left.

The general systems’ examination was fairly unremarkable in that her blood pressure was normal (148/90 mmHg) and she was in sinus rhythm and had normal peripheral pulses.   
There was a suggestion of bruits bilaterally over the carotid bifurcations.

She began to improve rapidly, so that within 48h she was able to walk unassisted and was able to hold objects fairly well in her right hand. By then her speech was better, although reduced in content. She was able to indicate she had a substantial, predominantly left-sided headache.

Consider:

1. What type of speech disorder is this?
2. How might fundoscopy provide a clue to the mechanism of these events?
3. What assessment of her arterial tree might provide valuable data about the mechanism of her stroke?
4. What therapeutic options will be influenced by the findings of this investigation?

**CASE 7**

**History**

Kwan Ju Lee, a 54-year-old man, had had a fairly chequered medical history with recurrent pneumothoraces, a perforated appendix, a protracted whiplash injury after a road traffic accident and subsequent chronic neck pain. The neck pain had been treated by various means, including physiotherapy, manipulation and, most recently, acupuncture. The exact basis for the pain remained uncertain because routine cervical spine radiographs had shown little. The patient had become severely disgruntled by the problem and was taking medico-legal action.

For approximately a year the patient had noticed a swelling in his right groin that had gradually increased in size. The swelling varied and he noticed it became more prominent when coughing. His doctor had told him of the diagnosis (an inguinal hernia) but the patient refused referral for a surgical opinion. Twenty-four hours before his eventual admission he had had a bout of violent coughing (he was a heavy smoker), as he did, the pain in his groin became intense. When he inspected the hernia, he found it had increased in size and appeared much less compressible than normal. Over the next few hours the pain persisted and he developed increasing colicky abdominal pain. He was admitted.

On examination he was distressed. He had an irreducible right inguinal hernia which was tender. He vomited during the examination. The rest of his general and neurological examination was normal. He underwent laporatomy. There was an incarcerated inguinal hernia. It was felt that a short segment of the bowel was no longer viable and 6 cm were excised with an end to end anastomosis. He had a stormy postoperative course and was on intravenous fluids and antibiotics for several days.

On the seventh postoperative day, as the drip was being taken down from his right arm, he commented to the nursing staff that he had some numbness in his right little finger and that his right hand felt slightly weak and clumsy. A doctor came to assess the problem.

Consider

1. Is the problem likely to be in the central or peripheral nervous system?
2. How will the distribution of any sensory or motor deficit in the left arm aid diagnosis?

**Examination**

The neurological abnormalities were confined to the right arm. There was no wasting or fasciculation and no change in the reflexes. Muscle tone was normal, as was co-ordination. There was consistent weakness in the interossei (4/5) together with weakness of a similar degree in abductor digiti minimi and adductor pollicis. Abductor pollicis brevis, on the other hand, appeared normal. The long flexors of the fingers appeared intact, as did both flexor carpi ulnaris and flexor carpi radialis. Tinel’s sign was negative at the elbow. He was not a good sensory witness but appeared to have reduced cutaneous sensation on the little finger and the ulnar border of the hand. The findings in the ring finger were inconsistent.

Consider:

1. Has the examination confirmed the nature of the problem?
2. To where can the problem be localised?
3. Why has this happened?

**CASE 8**

**History**

Linda-May Fisher, a 68-year-old woman, was in reasonably good health, although she had been troubled by osteoarthritis of the right knee for some time. This caused her pain and interfered to some extent with her walking. She had had episodic neck pain for some years but a year previously, while attending her yoga class, she had developed a more acute and intense pain in the neck which had radiated to the posterior aspect of the right upper arm.   
She had seen her general practitioner who advised analgesics and a soft collar. She decided to visit an osteopath. The osteopath seemed to help the problem, although she did notice, after her third visit, some paraesthesia in the right index finger. Eventually the pain resolved, although the paraesthesiae persisted to some degree.

Over the next year the pain recurred periodically, although never to the same degree and usually responded to analgesics. She also noticed, at times, a sense of twitching in the right arm which seemed to be confined to the back of the upper arm. She was more concerned, however, about her walking. It was not just that she still had a painful right knee but that both her legs felt slightly stiff and heavy. Friends commented that she seemed to drag them and would good-naturedly tell her to hurry up.

She had periodic headaches and had slight impairment of her central vision diagnosed as a form of familial macular degeneration. She lived with her husband and had close contact with her three children. She was trying to give up smoking and had reduced her consumption to five cigarettes a day. She did not drink alcohol and was on no medication except for occasional analgesics.

Consider:

1. What is the likely basis for the long-standing symptoms in the right arm?
2. What is the basis for the more recent lower limb syndrome?

**Examination**

Her general systems examination was normal, although osteoarthritic changes were evident in the right knee with slight loss of muscle bulk in right quadriceps. Her visual acuities were 6/12 bilaterally with correction and there was evidence of macular degeneration. The rest of the cranial nerve examination was normal. Her neck movements were slightly restricted and a little uncomfortable. In the upper limbs there was mild weakness of right triceps and possible weakness of the small hand muscles on the right. Fasciculation was noted in her right triceps. The biceps and supinator reflexes were absent on the right but associated with brisk finger flexion. The triceps jerks were unremarkable but the finger jerks were prominent bilaterally. Tone was normal. There was some cutaneous loss of sensation in the right index finger. The legs appeared slightly spastic with brisk reflexes. The right plantar was equivocal. There was suggestion of hip flexion weakness bilaterally. Proprioception was defective in the toes. Limb co-ordination was intact. Her gait appeared slightly spastic.

Consider:

1. What segmental level is suggested by the upper limb motor findings?
2. What segmental level is suggested by the upper limb sensory findings?
3. What is the interpretation of the upper limb reflex changes?
4. How should this patient be investigated?

**CASE 9**

**History**

Edward Forshaw-Smyth, a 19-year-old man, was fit and healthy. He had had no significant previous illness. He was an avid sportsman and regularly played cricket and rugby.   
Although normally a centre, he had been persuaded to move to loose forward on the previous day. The match had been fairly uneventful but, towards the end, the scrum had collapsed causing his neck to be twisted painfully. He was able to finish the game but continued to complain of neck pain during the evening and had to take aspirin in order to sleep.

The pain was still present the next day. Around midday, he suddenly developed intense vertigo and vomited profusely. He decided to go back to bed and slept for a short period.   
On waking, the vertigo was still present, although less severe and he began to have incessant hiccoughs. He tried various manoeuvres to eliminate the hiccoughs and was disconcerted to find that if he tried to swallow fluids, he began to choke. He decided to telephone his parents, whom he was expecting to see that afternoon. By now he was experiencing an intense pain behind the left ear, different from the neck pain of the previous day. He found he was unsteady as he walked to the telephone and realised he was slurring his words when he spoke to his mother. His mother became alarmed and called an ambulance. There was not a great deal of additional history to give to the casualty officer, although the patient now felt that sensation was defective on the left side of his face.

Consider:

1. Which part of the nervous system has been affected?
2. What underlying process may have caused the damage?

**Examination**

On examination the patient was alert. His blood pressure was 118/64 mmHg and he was in sinus rhythm. Heart sounds were normal and the peripheral pulses intact. He appeared to be tender over the left side of the neck and was reluctant to rotate his neck to either side.

The left pupil was slightly smaller than the right and there was a hint of a left ptosis. He had nystagmus on right lateral gaze with the fast phase to the right. He had some blunting of pin prick over the left face in all three divisions. He was dysarthric and was still hiccoughing.   
His palate deviated to the right. His left arm and leg were ataxic but power appeared intact. The limb tone was normal and his reflexes were symmetrical. The right plantar was flexor, the left extensor. When he tried to stand, he immediately fell to the left. Limb sensation to light touch and vibration were normal but he had altered pin prick and temperature sensation on the right leg. This ascended on to the trunk to a variable level on the chest wall.

Consider:

1. Has the examination pin-pointed the site of the lesion more accurately?
2. What is the usual pathological basis for this syndrome?
3. What investigations would be appropriate?

**CASE 10**

**History**

Felix Vazquez, a 70-year-old man, had been mildly hypertensive for several years. His blood pressure control had been satisfactory, using first diuretics, then, more recently, a ß blocker (atenolol). He had sustained a skull fracture at the age of 30 years in a road traffic accident but the fracture was uncomplicated and he had made a complete recovery.

For perhaps a year his wife had noticed a subtle change in his behaviour. He had apparently lost interest in some of his activities. Previously an avid crossword enthusiast, he had neglected to do the crossword on frequent occasions and, on others, had apparently struggled rather more to complete them. He read less often and, although still watching television, appeared to have greater difficulty in grasping current affairs. At times he had been more forgetful in everyday tasks; regularly he would fail to complete all the shopping tasks given to him and frequently when cooking (one of his interests), he would replace items out of position. Rather regularly now he would forget to add salt to his cooking. His driving had become a little more erratic, with a tendency to approach too close to other vehicles and a slowness to react to an emergency. Occasionally he had had difficulty negotiating a route with which he was familiar. In addition to this, he complained of increased tiredness and was tending to nod off each afternoon. His mood had somewhat altered. Previously easy-going, he had become more snappy and irritable. He was less inclined to socialise and when friends visited, he was more withdrawn, becoming increasingly monosyllabic. At times he appeared depressed.

Consider:

1. What is the working diagnosis based on this history?
2. What underlying pathology is most likely?

**Examination**

On examination his appearance was unremarkable, although he commented on several occasions that he was not really sure why he had needed to come for the consultation.   
When his wife periodically supplemented the history, he became irritable. His blood pressure was 150/100 mmHg and he was in sinus rhythm. The peripheral pulses were intact, the heart sounds normal and there were no carotid bruits. The routine neurological examination was normal, although at times he appeared rather slow to grasp what was required of him.   
The reflexes were symmetrical and the plantars flexor. Tests of co-ordination and sensation were normal and his gait was intact.

A brief bedside test of his memory and intellectual function was performed. He was orientated in time, although initially confused the date. He had difficulty in recalling the name of the hospital. He could not remember many details of the recent budget and forgot one of three objects that he had been asked to memorise. When performing serial sevens, he stumbled after the first three answers. He failed with one of the stages of a three stage command and produced a poor reproduction of a diagram of intersecting figures.

Consider:

1. Has the examination supported the diagnosis?
2. What blood test should be performed?
3. How would a computerised tomography scan help?

**CASE 11**

**History**

Brett Campbell, a 25-year-old gay man, had been diagnosed HIV-positive 3 years previously. He had had an attack of *Pneumocystis carnii* pneumonia a year before at a time when his CD4 count had fallen to 10. For 6 months his concentration had started to deteriorate and he had become more forgetful. He had complained of an alteration in his gait. At a neurological examination 3 months earlier, his doctor had noted a slowing of motor and verbal responses associated with some slowing of saccadic eye movements and broken pursuit movements. The neurologist had made a tentative diagnosis of early stage AIDS-related dementia.

For a month the patient had complained of a dull pain behind the right ear. He had begun to have difficulty in swallowing, with a tendency to choke and splutter when swallowing fluids.   
He noticed that his speech quality had altered with an element of hoarseness. He felt that his neck was weaker, although he could not specify in what way. Generally, he felt unwell, complaining of tiredness, fatigue and increased irritability.

Consider:

1. Can the previous diagnosis of AIDS-related dementia be sustained?
2. What clinical syndrome is suggested by the more recent symptoms?

**Examination**

On examination he appeared to have lost weight. His short-term memory was somewhat defective and his mini-mental test produced a score of 25 out of 30. His concentration was erratic and history taking and examination proved difficult. His eye movements were abnormal with broken pursuit movements being particularly evident. His fundi appeared normal.   
No abnormalities were detected in the fifth, seventh and eighth cranial nerves. When examining the gag reflex, it was noted that he failed to appreciate the pressure of the orange stick on the right but perceived it normally on the left. On phonation, the palate clearly deviated to the left. On inspecting the neck, the right sternomastoid muscle appeared less prominent and the right shoulder slightly depressed. On shoulder shrug, there was delayed elevation of the right shoulder. There was apparent weakness of neck rotation to the right whereas neck rotation to the left was normal. There was some debate about fasciculation on the right border of the tongue but in the end the tongue was thought to be normal. The limb reflexes appeared brisk but the plantar responses were flexor. Limb co-ordination was satisfactory but his gait was slow and rather uncertain.

Formal psychometry was undertaken and supported the diagnosis of an early dementia with some subcortical features. A repeat analysis of his lymphocyte subsets indicated a continuing low CD4 count.

Consider:

1. Does the combination of cranial nerve abnormalities suggest an anatomical site where an underlying pathology may be sited?
2. What imaging procedure or procedures may be valuable to assess that site?
3. In the light of the patient's HIV status, what pathological process is suspected?
4. What is the prognosis for this complication in HIV patients?

**CASE 12**

**History**

Nicole Yarrish, a 24-year-old single woman, was a trainee opera singer. Her previous health had been good, although she had become thyrotoxic at the age of 20 years. Her symptoms were initially controlled by medication (carbimazole) but eventually she had required treatment with radio-iodine. As a consequence, she now took thyroxine. Her subsequent assessments suggested she was both clinically and biochemically euthyroid. She was aware that there was a family history of thyroid disease. For perhaps a year she had noticed a tendency to fatigue easily, coupled with tiredness. Her general practitioner had found her to be slightly anaemic, of the iron-deficiency type, which he attributed to her heavy periods. He prescribed oral iron but this had no effect. For 3 months she had become worried about her voice. She was now regularly involved in opera performance and was finding that by the end of the opera, her voice was losing its intensity and volume. Luckily, she still sang in the chorus so the problem was not immediately apparent to others. For a month she had noticed a periodic blurring of vision that at times amounted to true diplopia. She could not indicate whether the problem occurred in one particular direction of gaze and insisted that at times it was vertical and at other times horizontal. Occasionally she wondered if her left upper eyelid drooped slightly.

Her sense of fatigue had increased and she found her weekend country walk, something she normally enjoyed, increasingly arduous. She had no other neurological complaints.

Her general health appeared good. She did not smoke and drank at most 10 units of alcohol a week. Besides thyroxine she was on a mixed oral contraceptive pill.

Consider:

1. What condition could this be on the basis of the history?

**Examination**

On examination she appeared well, although understandably anxious about her condition.   
The general examination was normal and, in particular, she appeared euthyroid. Her vision was normal. There was a suggestion of a left ptosis that appeared to increase during the course of the examination. She complained of diplopia on right lateral gaze but cover testing did not produce consistent results in terms of involvement of a particular eye muscle. Her jaw and facial muscles moved normally. She had normal palate elevation and her tongue movements were intact. It was noticeable that by the end of the history her speech had become a little indistinct with a slight dysarthria. In the upper limbs there appeared to be slight weakness of deltoid and triceps bilaterally although the examiner felt her performance was inconsistent. Lower limb power appeared normal as did her gait. Sensation and co-ordination were normal, as were her reflexes.

Consider:

1. What further bedside test could be carried out to add weight to the diagnosis?
2. What pharmacological test could be of value?
3. What would be the most important blood test in this situation?
4. Does the patient need any imaging?

**CASE 13**

**History**

Guy Palmer, a 58-year-old bachelor, had worked in a clerical capacity for the same city firm for over 30 years. He commuted approximately 30 miles every day by public transport, having never learnt to drive. He was abstemious in his habits and, although perfectly amiable at his workplace, had a very limited circle of friends, tending to prefer his own company. His previous health had been good, indeed, few of his colleagues could remember him ever having taken sick leave. Although the firm was fully computerised, he continued to write memoranda and even short letters by hand.

For perhaps six months, it had been noted that his writing had become increasing difficult to decipher. It was not that his writing was particularly poor, more that the size of the script had become very small at times. He had never had a particularly upright carriage but seemed to be rather more stooped than in the past. His gait had slowed and it was apparent that the morning walk from the station to the office was taking him longer. His voice, never loud, seemed to fade at times almost to a whisper. He was persuaded to have a medical examination, partly because the company was considering offering him early retirement.

He admitted that his physical activities had slowed somewhat but denied any impairment of memory or concentration. He acknowledged that at times he had difficulty getting out of low chairs. He admitted that he occasionally felt dizzy when getting out of bed in the mornings.   
For some time he had had urgency of micturition and there were times when he had barely escaped being incontinent. He had no other complaints.

Consider:

1. What type of clinical syndrome is suggested by the history?
2. Are there any features in the history that suggest that this is not idiopathic Parkinson's disease?

**Examination**

On examination his intellect appeared intact. The cranial nerve examination was normal. There was a mild increase in neck tone. There was no limb tremor and power and co-ordination were satisfactory. There was a diffuse, uniform increase in limb tone, predominantly in the upper limbs, which was present even at slow rates of joint displacement. He was bradykinetic, again mainly in the upper limbs and symmetrical in distribution. The reflexes were unremarkable, the plantars flexor. His sensation was intact. His gait showed a reduced arm swing bilaterally. His steps were slightly short and he hesitated a little on turning, although without loss of balance. His general examination appeared satisfactory but his lying blood pressure was noted to be 160/84 mmHg with a standing value (after 1 min) of 140/72 mmHg. He did not complain of dizziness at that time.

Consider:

1. What investigations might assist in establishing the diagnosis?
2. Will the patient's response to dopa therapy point the diagnosis one way or another?
3. What advice might be necessary in the light of the blood pressure observations?

**CASE 14**

**History**

Simone Pritchard, a 48-year-old woman, had always led an active life. She was happily married with two children but was not pursuing a career. Her husband had introduced her to golf 5 years before, since when she had become an enthusiast and had recently been elected the club captain. Her handicap had fallen progressively over the 5 years so that she was now playing off plus 14. She would generally spend approximately 4h playing a round but had begun to find the last few holes an increasing struggle. Her walking, which she felt had not changed significantly, would begin to deteriorate near the 15th hole. Her legs would start to stiffen and she would find that they felt heavy. Friends would say that her walking appeared laboured and on several occasions she had tripped on divot holes that had not been replaced. If she rested for a while after the round at the 19th hole, her legs seemed to recover. She had recently noticed an occasional stiffness in her legs in bed at night, sometimes causing them to jerk briefly. She denied much in the way of other neurological symptoms but did admit to a change in her bladder function; for some time she had developed increased frequency of micturition, with a sense of urgency and had even been caught short on the golf course.

Her general health remained good. She belonged to a private health care scheme and her recent health check had been entirely satisfactory.

Consider:

1. What is the clinical description of this patient's disability?
2. What is the most likely diagnosis?

**Examination**

On examination she appeared fit and well. The general systems examination was unremarkable. There were no abnormalities in the cranial nerve examination. Upper limb power appeared normal. There was a hint of spasticity in the forearms and the upper limb reflexes appeared uniformly brisk. Upper limb co-ordination and sensation were normal. The abdominal reflexes were absent. There was mild weakness of hip flexion bilaterally but power in the rest of the lower limbs appeared normal. There was definite spasticity in the quadriceps. Both the knee and ankle jerks were brisk, with the ankle jerks tending to spread to the adductors of the thigh. There were approximately six beats of ankle clonus bilaterally.   
The plantars were extensor. Lower limb co-ordination appeared satisfactory. She was slightly hesitant when identifying small movements of the toes and her vibration sense was absent to the knees. Her gait appeared slightly stiff and she confessed that her walking difficulty was becoming increasingly prominent.

She had already had a full blood count and B12 levels measured. Both were normal. She had arranged a computerised tomography scan of the head privately. It was normal.

Consider:

1. Would cerebrospinal fluid examination help in the diagnosis?
2. What imaging procedure should be performed?
3. What therapy would control her symptoms?

**CASE 15**

**History**

Deirdre Symonds, a 70-year-old widow with three children, lived alone and was generally well. She had a substantial circle of friends and was an enthusiastic member of her local Women's Institute. She had been diagnosed as hypertensive approximately 10 years previously having attended her doctor complaining of slight breathlessness and fatigue. Control of her hypertension had always proved difficult and at times her systolic blood pressure had reached 200 mmHg. At presentation she was taking an angiotensin-converting enzyme inhibitor and a diuretic.

A year earlier, she had noticed an ill-defined blurring of vision on looking to the right. Within a month or so this had become more evident and was now clearly associated with diplopia.   
Her sight had been assessed at a local eye clinic where it was thought that there was some evidence of a partial weakness of the left medial rectus. The problem was attributed to hypertension and no further action was taken, although a full blood count and her erythrocyte sedimentation rate were checked and found to be normal, as was a modified glucose tolerance test. She began to notice increasing discomfort in and behind the left eye and wondered whether the eye was becoming a little more protuberant. Her vision had remained satisfactory but, if anything, the diplopia was rather more evident and now seemed to be present on forward gaze. In addition, she realised that her left upper eyelid was drooping.   
For approximately 3 months she had noticed an ill-defined numbness in the left forehead but was not confident of any altered sensation in the cheek or chin. Her general practitioner was concerned about the apparent progression of her disability and referred her for a neurological opinion. She had no other neurological complaints and her general health remained satisfactory, although she still had some breathlessness and noticed periodic ankle swelling.

Consider:

1. Where might the lesion be sited on the basis of the history?

**Examination**

On examination she appeared well. Her blood pressure was 190/104 mmHg. She had slight ankle swelling but the jugular venous pressure was not elevated. Heart sounds were normal; there were no carotid bruits and no orbital bruits.

Her visual acuities were 6/6 parts right and left. The left eye was slightly abducted and appeared minimally proptosed. There was a substantial left ptosis. The left pupil was comparable in size with the right but the light reflex (both direct and consensual) was virtually absent. There was no adduction of the left eye and severe restriction of elevation and depression. Some abduction of the left eye was possible but was clearly reduced in degree. When she attempted to look down with the left eye abducted, there was no rotation of the globe. Movements of the right eye were full and the pupil reacted normally. There appeared to be dulling of the cutaneous sensation over the forehead and anterior scalp on the left and possibly over the cheek and upper lip. Sensory examination of the chin was normal. The left corneal response was depressed. The rest of the neurological examination was normal.

Consider:

1. What cranial nerves are affected?
2. Which part of the cavernous sinus is likely to be involved?
3. Why is the left pupil not dilated?
4. What is the most likely pathological process?
5. How would you manage the problem?

**CASE 16**

**History**

Chuck Lukach, a 30-year-old male weight-lifter, had been in excellent health in the past. He was single. He had always refused to use illicit drugs in aiding his career (they had frequently been available) and had represented his country at the Olympic Games. Like many of his fellow athletes, his back could trouble him from time to time and he always wore a support when lifting, even though he appreciated that its value was limited.

He was competing in the national championships and had already won his title but decided to attempt a national record with his last lift. He expected to retire from the sport and concentrate on his other interest, namely sheep farming. He realised that the weight was at the limit of his capacity. As he lifted the final phase, he developed an intense low back pain. Somehow he sustained the lift for the statutory period but then had to immediately drop the weight, narrowly escaping injury. The pain persisted and appeared to extend to his buttocks bilaterally.

He insisted on returning to his hotel room to rest rather than seeking immediate medical attention. Already he was aware of an ill-defined numbness in the posterior thighs. He took several aspirins and went to bed.

On waking the pain was still present and the numbness, if anything, more intense. He struggled out of bed but realised that his feet were weak and he had difficulty getting to the toilet. His bladder felt somewhat full and he decided to sit on the toilet to micturate.   
He realised that his buttocks were numb and, to his horror, found he could not pass urine.   
He rang for an ambulance and was admitted to hospital. He had no other neurological complaints and, apart from an occasional tendency to wheeze (for which he tried to avoid taking medication because of his concerns about drug testing), he was well.

Consider:

1. Where is the pathological process likely to be situated?
2. What neurological structure has been disturbed?

**Examination**

On neurological examination his cranial nerves and upper limbs were normal. He was tender over the lumbosacral junction. Straight leg raising was limited to 20° bilaterally, evoking posterior thigh pain on either side. Femoral stretch was negative. He had weakness of plantar flexion, knee flexion and hip extension bilaterally. The knee jerks were brisk and the ankle jerks absent. The plantars were weakly flexor. Tone was normal and co-ordination intact.   
He had blunting of cutaneous sensation over the posterior thighs extending to the perianal region bilaterally. His anal sphincter tone was reduced. His bladder was palpable to the umbilicus. A general systems examination was satisfactory.

Consider:

1. What segments are affected on the basis of the motor assessment?
2. What segments are affected on the basis of the sensory assessment?
3. What investigation would be most helpful?
4. How would you manage this problem?

**Section 8: 6th Year Neurology Firm Student Assessment Forms**

**Neurology 6th Year Assessment Form for St Mary’s Hospital**

Name of Student …………………………………………………….  
Date ……………………..

On completion of the 2 week Neurology attachment at St Mary’s each student must have attended at least the sessions listed below (whether or not you are on floating leave one week!), each signed off by an appropriate member of the team. There are >8 OP clinics available each week, mostly for 2 students to attend, so you should make 3 at least over the fortnight. Ward teaching sessions are compulsory. Bring this signed sheet , your Assessment Form **with the photo** (available on-line),and the learning objectives list (you should tick these off as you feel you have achieved them, and ensure all are met by seeking guidance as necessary) to the teaching/feedback session with Dr Gabriel on the 2nd Thursday. Unless there are extenuating circumstances, failure to complete this form adequately will result in failure of the firm.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | Date | Signature | Print Name |
| **1** | **Outpatient 1** |  |  |  |
| **2** | **Outpatient 2** |  |  |  |
| **3** | **Outpatient 3** |  |  |  |
| **4** | **Neurosurgical/trauma WR** |  |  |  |
| **5** | **SpR/SHO Teaching Session 1** |  |  |  |
| **6** | **SpR/SHO Teaching Session 2** |  |  |  |
| **7** | **SpR/SHO Teaching Session 3** |  |  |  |
| **8** | **Neurology Clerking presented** |  |  |  |
| **9** | **Neurology Clerking presented** |  |  |  |
| **10** | **Neurosurgical theatre** |  |  |  |
| **11** | **Observation of Lumbar puncture** |  |  |  |
| **12** | **Observation of neurophysiology (EMG/EEG)** |  |  |  |
| **13** | **Consultant Teaching 1** |  |  |  |
| **14** | **Consultant Teaching 2** |  |  |  |
| **15** | **Teaching/Feedback session with Dr Gabriel** |  |  |  |

**Neurology 6th Year Assessment Form for Charing Cross Hospital**

Name of Student …………………………………………………….  
Date ……………………..

On completion of the 2 week Neurology attachment each student must have attended the sessions listed below (whether or not you are on floating leave for one week), each signed off by an appropriate member of the team. There are OP clinics available each week, mostly for 2 students to attend, so you should make 3 at least over the fortnight. Ward teaching sessions are compulsory as is the feedback session at the end of the firm, to which you should bring this signed sheet, your FEO front sheet with the photo**,** and the **l**earning objectives on page 61 (you should tick these off as you feel you have achieved them, and ensure all are met by seeking guidance as necessary).

Unless there are extenuating circumstances, failure to complete this form adequately will result in failure of the firm.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Activity** | **Date** | **Signature** | **Print Name** |
| 1 | Outpatients 1 |  |  |  |
| 2 | Outpatients 2 |  |  |  |
| 3 | Outpatients 3 |  |  |  |
| 4 | Outpatients 4 |  |  |  |
| 5 | Consultant Teaching PGB 1 |  |  |  |
| 6 | Consultant Teaching PGB 2 |  |  |  |
| 7 | Consultant teaching RP 1 |  |  |  |
| 8 | Consultant teaching RP 2 |  |  |  |
| 9 | Consultant teaching CK 1 |  |  |  |
| 10 | SpR Teaching Session 1 |  |  |  |
| 11 | SpR Teaching Session 2 |  |  |  |
| **12** | **Neurology Clerking - presented 1** |  |  |  |
| **13** | **Neurology Clerking - presented 2** |  |  |  |
| 14 | Neurosurgical Meeting 1 |  |  |  |
| 15 | Neurosurgical Meeting 2 |  |  |  |
| 16 | Observation of Lumbar puncture |  |  |  |
| 17 | Neurophysiology (EMG/EEG) |  |  |  |
| 18 | Neuroradiology Meeting 1 or 2 |  |  |  |
| 19 | Neurosciences Grand Round 1 |  |  |  |
| 20 | Neurosciences Grand Round 2 |  |  |  |
| 21 | Neurosurgical theatre 1 or 2 |  |  |  |
| **22** | **Feedback session with Dr C Kaplan** |  |  |  |

**Neurology 6th Year Assessment Form for Chelsea & Westminster Hospital**

Name of Student …………………………………………………….  
Date ……………………..

On completion of the 2 week Neurology attachment each student must have attended the sessions listed below, each signed off by an appropriate member of the team. There are OP clinics available each week, mostly for 2 students to attend, so you should make 3 at least over the fortnight. Ward teaching sessions are compulsory as is the feedback session at the end of the firm, to which you should bring this signed sheet, your FEO front sheet with the photo**,** and the **l**earning objectives on page 61 (you should tick these off as you feel you have achieved them, and ensure all are met by seeking guidance as necessary).

Unless there are extenuating circumstances, failure to complete this form adequately will result in failure of the firm.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Activity** | **Date** | **Signature** | **Print Name** |
| **1** | Outpatients 1 |  |  |  |
| **2** | Outpatients 2 |  |  |  |
| **3** | Outpatients 3 |  |  |  |
| **4** | Outpatients 4 |  |  |  |
| **5** | Consultant teaching AK 1 |  |  |  |
| **6** | Consultant teaching AK 2 |  |  |  |
| **7** | Consultant teaching JJ 1 |  |  |  |
| **8** | Consultant teaching JJ 2 |  |  |  |
| **9** | FY1&2 teaching Session 1 |  |  |  |
| **10** | FY1&2 teaching Session 2 |  |  |  |
| **11** | SpR teaching session 1 |  |  |  |
| **12** | SpR teaching session 2 |  |  |  |
| **13** | **Neurology clerking presented 1** |  |  |  |
| **14** | **Neurology clerking presented 2** |  |  |  |
| **15** | Observation of Lumbar puncture |  |  |  |
| **16** | Observation of neurophysiology (EMG/EEG) |  |  |  |
| **17** | Neurosciences Grand Round (CXH) 1 |  |  |  |
| **18** | Neurosciences Grand Round (CXH) 2 |  |  |  |
| **19** | Neuroradiology meeting (CXH) 1 or 2 |  |  |  |
| **20** | SpR Tutorial 1 |  |  |  |
| **21** | SpR Tutorial 2 |  |  |  |
| **22** | Wednesday lecture/vignette/presentation 1 |  |  |  |
| **23** | Wednesday lecture/vignette/presentation 2 |  |  |  |
| **24** | **Feedback session with Dr A Kennedy** |  |  |  |

**Neurology 6th Year Assessment Form for Northwick Park Hospital**

Name of Student …………………………………………………….  
Date ……………………..

During the 2 week Neurology attachment at Northwick Park Hospital each student should aim to attend the full range of teaching opportunities. Students should self-certify attendance at sessions on the score sheet. The score sheet should be given to the undergraduate coordinator at the end of the attachment.

|  |  |  |
| --- | --- | --- |
|  | Teacher / Ward | Date |
| Out-patient Clinic |  |  |
| Out-patient Clinic |  |  |
| Out-patient Clinic |  |  |
| Neurology Consultant Teaching |  |  |
| Neurology Consultant Teaching |  |  |
| RRU Teaching |  |  |
| RRU Teaching |  |  |
| Stroke Teaching |  |  |
| Stroke Teaching |  |  |
| Fellow Teaching |  |  |
| Fellow Teaching |  |  |
| Radiology Teaching |  |  |
| Radiology Teaching |  |  |
| Stroke Ward Round |  |  |
| Stroke Ward Round |  |  |
| Stroke Radiology Meeting |  |  |
| Stroke Radiology Meeting |  |  |
| MS Counsellor |  |  |
| Neurology Clerking 1 |  |  |
| Neurology Clerking 2 |  |  |
| Neurology Clerking 3 |  |  |
| Neurology Clerking 4 |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

**Neurology 6th Year Assessment Form for the Hammersmith Hospital**

Name of Student ………………………………………………   
Date: ………….…….

On completion of the 2 week Neurology attachment at Hammersmith each student must have attended the core (+/- desirable) requirements, which must be signed off by an appropriate member of the team. The **l**earning objectives are detailed in the handbook (you should tick these off as you feel you have achieved them, and ensure all are met by seeking guidance as necessary). You will also each be given a clinical vignette for you to read up and work on. At the end of the firm you are expected to present your completed vignette to the rest of the group in a talk lasting 10 and 15 minutes. This will help provide a broader scope to the number of topics taught during the firm. **Please present this completed card at the end of the firm with your FEO front sheet so that your attendance and hard work can be rewarded appropriately.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Core requirements** | | | | |
| **Activity** | **Date** | **Signature** | | **Print Name** |
| Outpatient Department 1 |  |  | |  |
| Outpatient Department 2 |  |  | |  |
| Consultant / SpR Teaching Session 1 |  |  | |  |
| Consultant / SpR Teaching Session 2 |  |  | |  |
| Consultant / SpR Teaching Session 3 |  |  | |  |
| Consultant / SpR Teaching Session 4 |  |  | |  |
| Consultant / SpR Teaching Session 5 |  |  | |  |
| Consultant / SpR Teaching Session 6 |  |  | |  |
| **Neurology Clerking 1** |  |  | |  |
| **Neurology Clerking 2** |  |  | |  |
| Observation of neurophysiology (EMG/EEG) |  |  | |  |
| Neuroradiology 1 or 2 |  |  | |  |
| Wednesday lecture/vignette/presentation 1 |  |  | |  |
| Wednesday lecture/vignette/presentation 2 |  |  | |  |
| Neurosciences grand round 1 |  |  | |  |
| Neurosciences grand round 2 |  |  | |  |
| **Feedback session Prof P Piccini** |  |  | |  |
|  | | | | |
| **Desirable achievements** | | | | |
| Outpatient 3 |  | |  |  |
| Neurology Clerking 3 |  | |  |  |
| Observation of Lumbar puncture |  | |  |  |

**Neurology Year 6 Assessment Form for the Hillingdon Hospital**

Name of Student ………………………………………………   
Date: ………….…….

On completion of the 2 week Neurology attachment at Hillingdon each student must have attended the core (+/- desirable) requirements, which must be signed off by an appropriate member of the team. The **l**earning objectives are detailed in the handbook (you should tick these off as you feel you have achieved them, and ensure all are met by seeking guidance as necessary).

You will also each be given a clinical vignette for you to read up and work on. At the end of the firm you are expected to present your completed vignette to the rest of the group in a talk lasting 10 and 15 minutes. This will help provide a broader scope to the number of topics taught during the firm. **Please present this completed card at the end of the firm with your FEO front sheet so that your attendance and hard work can be rewarded appropriately.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Core requirements** | | | | |
| **Activity** | **Date** | **Signature** | | **Print Name** |
| Outpatient Department 1 |  |  | |  |
| Outpatient Department 2 |  |  | |  |
| Consultant teaching Session 1 |  |  | |  |
| Consultant teaching Session 2 |  |  | |  |
| Consultant teaching Session 3 |  |  | |  |
| Consultant teaching Session 4 |  |  | |  |
| Consultant teaching Session 5 |  |  | |  |
| Consultant teaching Session 6 |  |  | |  |
| **Neurology Clerking 1** |  |  | |  |
| **Neurology Clerking 2** |  |  | |  |
| Neuroradiology MDT 1 |  |  | |  |
| Neuroradiology MDT 2 |  |  | |  |
| Rehabilitation MDT 1 or 2 |  |  | |  |
| Wednesday lecture/vignette/presentation 1 |  |  | |  |
| Wednesday lecture/vignette/presentation 2 |  |  | |  |
| Neurosciences grand round 1 - CXH |  |  | |  |
| Neurosciences grand round 2 - CXH |  |  | |  |
| **Feedback session Dr Rakowicz** |  |  | |  |
|  | | | | |
| **Desirable achievements** | | | | |
| Outpatient 3 |  | |  |  |
| Neurology Clerking 3 |  | |  |  |
| Observation of Lumbar puncture |  | |  |  |

**Neurology Firm Learning Objectives**

You should understand the basic neuroanatomy and neurophysiology that underpins the neuro examination. On the basis of the history and examination, attempt to describe where the problem is (anatomic location) and what the problem (“surgical sieve”) is for each patient you see

You should be able to record a competent neurological history and carry out a neurological examination with particular reference to the following:

**Higher cortical function**

In particular:

(i) Language assessment

(ii) Assessment of the conscious state (Knowledge of the Glasgow Coma Scale)

(iii) Assessment of mental status (Knowledge of Mini-mental test)

**Cranial function**

In particular:

(i) Assessment of optic nerve function using visual acuity, the swinging light test, analysis of the visual fields and fundoscopy.

(ii) Assessment of eye movements, including analysis of saccades and pursuit, appraisal of diplopia and nystagmus.

(iii) Assessment of the fifth cranial nerve including motor and sensory function, the jaw jerk and the corneal reflex.

(iv) Assessment of seventh cranial nerve function including the distinction of upper from lower motor neuron facial weakness.

(v) Assessment of hearing, including the use of Rinne’s and Weber’s tests.

(vi) Assessment of the gag reflex and palatal movement, sternocleidomastoid and trapezius muscles and tongue

**Motor function**

Assessment of muscle bulk, tone, reflexes (using a standardised scale) and power (MRC scale).

**Involuntary movements**

Understand and describe: tremor, chorea, athetosis, ballismus, dystonia.

**Cerebellar function**

Assessment of dysarthria, and limb cerebellar function.

**Sensory function**

Light touch, pin-prick, temperature, vibration sense and joint position sense. Testing of cortical sensory function.

**Gait**

Assessment of gait and recognition of abnormal gait patterns, including foot drop, hemiplegic gait, paraplegic gait, waddling gait, ataxic gait, festinant gait and gait apraxia.

**Specialised reflexes and manoeuvres**

(i) L’Hermitte’s sign

(ii) Neck stiffness

(iii) Kernig’s sign

(iv) Straight leg raising