BPNA

British Paediatric Neurology Association

Generic Guide to Consultant Paediatric Neurology Job Planning

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Contents

Glossary

BPNA British Paediatric Neurology Association is the professional organisation for doctors who specialise in the care of children with neurological disorders. The BPNA is a charity (1159115) aiming to promote the health and well-being of children with neurological disorders through:

- Training and education of professionals working in the field of neurosciences.
- Research into neurological disorders affecting children & young people.
- Improvement of knowledge of professionals, the public and patients and their families through scientific meetings.
- Providing support to members to facilitate the delivery of the above objectives.

CCT Certificate of Completion of Training [in a chosen specialty]

Cold-weeks Weeks when the CPN is not the on-call receiving consultant.

Complex Patients who have co-morbidities (often multiple), and/or more than one diagnosis, and/or who are undiagnosed but have a severe or progressive disorder, and/or a diagnosed condition where the phenotype is not fully known, where treatment is complex and requires monitoring, and/or have complex and often intractable family or social issues.

CSAC College Specialty Advisory Committee. This is effectively the training board for paediatric neurology. It sits between the Royal College of Paediatrics & Child Health and BPNA.

The CSAC is chaired by the president or past-president of the BPNA and has *a senior national training advisor*, leading for areas including paediatric neurology grid trainees; *a junior national training advisor* (leading for areas including special interest ie SPIN trainees); *a trainee representative, an assessment officer and quality officer.*

The CSAC is closely involved with the development, recruitment and assessment of both trainees and training programs within paediatric neurology (including the SPIN epilepsy program).

The CSAC also overview applications for endorsements of new posts and will advise on job planning.

The CSAC work closely with the professional support team within the BPNA to support both individuals and teams across the UK.

DCC Direct clinical care. Includes clinics, ward rounds, travel time, patient administration work, on-call attendance, investigation/diagnostic work, operating sessions, patient treatment and public health duties

Hot-week Usually refers to a week when the CPN is the receiving consultant for inpatient referrals and other on call duties eg telephone advice to other centres. Where there are a sufficient number of consultants on the rota the on-call consultant may cancel routine clinics and other routine work scheduled for that week.

PA Standard unit of time in consultant contracts. 1 PA = 4 hours

Secondary Secondary level referrals are referrals from primary care (eg GP) to a hospital (eg paediatrician) or community medical service.

SPA Supporting professional activities. Includes mandatory training, teaching, supervision, quality and safety, CPD, appraisal, network meetings, stakeholder engagement, research.

SPIN RCPCH Special Interest modules. Additional training and experience in epilepsy for general paediatricians.

Tertiary Referrals from a consultant working in a secondary level capacity (eg paediatrician) to a highly specialised service for advice on diagnosis and management and/or ongoing care.

1. Introduction

The following is a description of the work of a Consultant Paediatric Neurologist (CPN) in the UK, emphasizing features that will inform job planning. This will include recommendations for minimum requirements of time allocation and resource provision necessary for a CPN to carry out their work. These guidelines have been produced by the **British Paediatric Neurology Association (BPNA)** and the Neurology **College Speciality Advisory Committee (CSAC)** of the Royal College of Paediatrics and Child Health.

2. Background

Paediatric neurologists are specialist clinicians who have expert knowledge and training in the diagnosis and management of the vast range of neurological disorders affecting children and young people including:

- Epilepsy and paroxysmal disorders
- Neuromuscular disorders
- Cerebrovascular disease
- Brain and spinal injury
- Infections of the brain and spinal cord
- Brain and spinal tumours
- Neurogenetic disorders
- Movement disorders
- White matter disorders
- Inborn errors of metabolism

Paediatric neurology covers the age range from fetal life to adulthood (16–18 years).

Paediatric neurology (PN) is recognized as a sub-speciality of paediatrics by the GMC. CPNs in the UK have a CCT in Paediatrics (Neurology).

Paediatric neurology is a **tertiary** speciality however most PNs will see some **secondary** level referrals. This depends on local factors such as the size of the population, the number of CPNs, the degree of sub-specialisation practiced (eg, if it is a national referral centre), the availability of paediatricians with expertise in epilepsy or other specific disorders. On average no more than 20% of all patients seen will be secondary level. A high proportion of patients will be **complex** and this needs to be emphasised when job planning.

Most CPNs work in a regional neuroscience centre, co-located with paediatric neurosurgery and PICU. Thus most CPNs see both Outpatient (OP) and Inpatient (IP) referrals.

3. Outpatient work

It is beyond the scope of this document to describe all the possible clinical aspects of paediatric neurology and what follows is a summary. Broadly, outpatient clinics involve three categories of children that each make up about one third of patients attending a clinic. These are: epilepsies, referrals for a diagnostic opinion and follow-up patients with a wide variety of different neurological disorders. The time required to see each patient will vary depending on their complexity.

3.1. Epilepsies

The epilepsies are the commonest neurological disorder and comprise a large number of individual disorders each with their own clinical course, treatment requirements and prognosis. The epilepsies are often misdiagnosed and NICE guidelines specify various clinical situations where patients should be referred to a CPN[1].

https://www.nice.org.uk/guidance/cg137/chapter/1-Guidance#referral-for-complex-or-refractory-epilepsy

Up to one third of all epilepsies are poorly controlled[2,3] and all these patients need to be seen by a CPN. A new patient appointment for a patient with poorly controlled epilepsy takes time; the prior history, investigations and treatments must be reviewed and a detailed account of the current clinical events taken, in order to formulate a management plan. Many epilepsy tertiary clinics are multidisciplinary eg Ketogenic diet assessments, epilepsy surgery. **Most units allocate 1 hour for a new tertiary referral**. A follow-up appointment may be quicker but will also require sufficient time to revisit the history and investigations. **Typically units allocate 30-minutes for a follow-up appointment.**

3.2. Diagnostic opinions

These referrals encompass the whole spectrum of clinical neurology and could range from a relatively straightforward consultation for a simple diagnostic question through to a highly complex patient with a genetic neurodegenerative disease who has already had multiple investigations. The proportion of the latter patients in a given clinic vary somewhat throughout the UK depending on the size and nature of the population served. **On average there will be several highly complex patients per clinic.**

Complex patients comprise an important part of a paediatric neurologist's workload and are a group where referring doctors, parents and patients have high expectations. As these patients have complex or rare disorders, usually the diagnosis will not be immediately apparent. Following the consultation, a considerable amount of follow-up work is required, eg reviewing MR scans, EEGs, biochemical or genetic tests, conducting a literature review and discussing the case with colleagues.

In many cases the CPN aims to give an expert opinion, but not to take over primary management of the case if possible. As a result, the number of consultations is reduced to a minimum but each consultation results in a considerable workload. **It would not be unusual to spend 4 hours per patient following clinic, collating results and considering the problem before being able to formulate an appropriate management plan.**

Management plans can be complex and may include multidisciplinary meetings with members of the patient's local team. This may also involve extra time-consuming activities such as applications to drug and therapeutics committees for funding for specific treatments or organisation of a referral to an epilepsy surgery centre, if this is not provided locally. Patients with rare disorders may require treatments which are unlicensed or expensive and for which permission must be sought. This represents a significant amount of paperwork and many hours can be spent on a particular patient.

3.3. Follow-up appointments

In general follow-up appointments are shorter, though not always. For example, if a patient returns for a follow-up appointment to receive the results of investigations, this may involve disclosing a diagnosis of a fatal disorder. This cannot and should not be hurried. Ideally the CPNs should arrange a longer appointment out of clinic and we recommend that job plans should accommodate time for this.

3.4. Specialist clinics

Increasingly paediatric neurology is becoming sub–specialised with CPNs having a special expertise and running a sub-specialist service eg complex epilepsy, epilepsy surgery, stroke, oncology, neuromuscular or movement disorder. The bigger the centre, the more likely there is to be sub-specialist designation.

Sub-speciality services usually comprise a team of clinicians and allied professionals with expertise in the given field providing guidance on diagnosis and management.

Early correct diagnosis has the following benefits for patients:

- Commencing appropriate effective treatment(s)
- Avoiding inappropriate treatments
- Acting within NICE guidelines, local clinical guidelines and the quality and safety recommendations of the employing Trust
- Avoiding inappropriate and/or expensive investigations
- Prevention of morbidity/mortality
- Appropriate genetic counselling and enabling reproductive choice
- Adjustment to diagnosis and prognosis
- Accessing appropriate support services
- Accessing accurate information
- Participating in a clinical trial
- Participating in a research study

Treatments are now available for many neurological disorders affecting children, however selecting and delivering the right treatment for a given condition has become increasingly complex. Optimal outcomes require appropriate expertise, and this may involve assessment by a sub-specialty service. Examples include: dystonia management, treatment of CNS inflammation and specific neuromuscular disorders.

It is not the aim of this guidance to suggest how sub-speciality clinics are run. This will often depend on local factors such as, which other specialists are available, the population needs and MDT requirements.

However, in general such clinics have longer appointments, with the CPN leading the associated MDT. There may be other roles ie contributing to mandatory national audits and appropriate time must be allocated within the CPN job plan to undertake such work both before, after and outside the clinic itself. In addition, specialist administrative support is needed.

3.5. Outreach clinics

Outreach clinics are where the CPN travels to a local hospital and conducts a clinic alongside the local paediatricians. They are popular with patients who can avoid the need to travel yet access specialist paediatric neurology advice and support locally. They are potentially good for building the network with the local services and raising local standards.

However, there are potential risk and governance issues with such clinics. These include: poor engagement with the local paediatric team, with no co-ordination of referrals; no direct paediatric input to the clinic, resulting in a lack of relevant information, eg paperwork not being available; no access to investigation results; and little engagement in supporting the agreed management plan. There are often problems relating to Trust specific IT systems (access to PACs, EPR, electronic dictation etc).

These clinics usually are a mix of new and follow-up patients and are all tertiary.

The clinics are challenging for CPNs often running late and with added travel time at both ends which could involve 2-hour drive each way or more.

Furthermore, as noted above in managing complex patients, there will usually be considerable additional work post-clinic to collate all the findings.

3.6. Clinical administration time to support outpatient clinics

Clinical administration time to support outpatient clinics is often described as "admin time" in job plans.

The evaluation of paediatric neurological disorders requires the use of additional investigations. There are many different investigations that may be required, however the three most commonly used are MRI, EEG and molecular genetic tests. A high proportion of paediatric neurology patients will have these investigations, and as they require multidisciplinary discussion, most paediatric neurology units run regular neuroradiology, EEG or genetics meetings together with the relevant specialists.

For example: Weekly neuroradiology meeting 1.5 hours, monthly EEG meeting 2 hours, monthly genetics meeting 2 hours.

Sub-specialist services will often have additional MDT meetings, eg epilepsy surgery, stroke etc.

Time for these needs to be included in job plans.

In 1998 a report by the Royal College of Physicians formally recommended that for clinical geneticists 1 PA of supporting admin time would be granted per PA of OP clinic[4]. There are many similarities in the nature of CPN OP work to those of clinical genetics.

As noted in 3.2 above and 3.3 above, considerable time may be required for researching and collating results in order to reach a correct diagnosis. Furthermore, because of the complex nature of the majority of neurology patients, including the frequent presence of several co-morbidities, a considerable amount of time is spent following the clinic in liaison work, within the tertiary hospital, and with other hospitals, agencies, education and social services. Meetings may have to be held with other agencies to discuss complex patients either in the hospital, with CAMHS or community paediatrics or, for example, an outreach meeting in a special school.

In addition, CPNs will have responsibility for a number of inpatients outside their "on-call" commitments, including inpatients who are well known to them from the outpatient service and who require their input if they are admitted acutely unwell

For these reasons, we recommend 1PA of supporting admin time per 1PA of clinic time. This represents not only paperwork and letters but other also all the work required per patient which is not otherwise included elsewhere in the job plan.

3.7. Recommendations for outpatient clinics

- No more than 3 outpatient clinics/week in 10PA post for a "cold-week"
- Minimum time for new patient appointment: 45 minutes (60 if multidisciplinary)
- Minimum time for follow-up appointment: 20 minutes (30 if multidisciplinary)
- Minimum supporting time (see 3.6 above) for in-house outpatient clinic: 1.0 PA

  Note: The majority of clinics will largely comprise complex patients. For clinics where there is more of a mix of non-complex/complex, 0.5PA may be appropriate
- For outreach clinics
  - Minimum time for new patient: 60 minutes
  - Minimum time for follow-up patient: 30 minutes
  - Patients for discussion only should be listed in the clinic and allocated appropriate time: Suggested 10 minutes
  - Administration time to support: 1PA per 1PA clinic time

  Note: Travel time must be included in the job plan eg a 1PA clinic with a 2-hour one-way travel time is equivalent to 2PAs
- There should be 0.5–1PA/week for "investigation MDTs" such as MR/EEG/genetics
- Sub-specialist clinics should be negotiated locally but times should be at least those above

4. Inpatient work and on-call

It is estimated that about a third of all paediatric emergencies are neurological and about a quarter of all admissions to PICU are primarily neurological (not counting the large number of PICU patients that develop a neurological complication of a non-neurological disorder). In addition, a significant number of PICU admissions are the result of a medical complication of neurological disability.

Most neuroscience units have paediatric neurosurgery centres and many of these share the same ward as the paediatric neurology patients.

Furthermore, many paediatric neurology units are based in a centre that has other specialised units with patients that are at increased risk of neurological complications eg liver/renal units, cardiac surgery centres, haematology/oncology centres.

Importantly, an increasing number of acute neurological disorders have specific treatments that are effective if used appropriately and this requires specialist diagnosis and management.

For these reasons it will be seen that an acute on-call service for paediatric neurology is necessary.

4.1. When on-call a CPN will be responsible for the following:

- Management of neurology inpatients
- Neurological/medical management of neurosurgical inpatients (in some units that don't run a shared care arrangement this would be ad hoc advice)
- Referrals of new acute patients from
    - Regional paediatricians
    - Paediatricians and specialists in base hospital
    - PICU
    - Other units eg NICU/Cardiac surgery/A&E
- Telephone advice for district paediatricians (this may involve multiple daily phone calls)
- Telephone advice to Allied Health Professionals
- Telephone advice to parents/carers
- Safeguarding referrals

NB. For PICU patients this would also often involve discussions with parents of a child with a severe acute brain injury or dying from a severe neurological disorder.

4.2. Other relevant factors to the provision of an acute CPN service

- Fewer junior doctors with frequent gaps in provision
- Fewer experienced middle grade doctors
- With current rotas for the majority of time there is not a senior neurology trainee on the ward
- Lower threshold for specialist referral.

Patients are often resident as inpatients for a long period of time (weeks to months) and will need a series of liaison and discharge planning meetings which require the input of a named consultant who may not be the CPN on-call

For these reasons acute CPN on-call is largely a consultant delivered service and is increasingly likely to be so.

Almost all PN units in the UK run a "hot-week" service where the on-call consultant is on for 1-week and they do not have clinics booked. This depends on having a minimum of 4 CPNs on a rota.

4.3. Recommendations for acute neurology and inpatient service

A 24-hour on-call service cannot be provided unless there are a minimum of 4 CPNs. Where a rota is only 1:4 we recommend a clear plan for working towards a 1:5 rota.

Where there are fewer than 4 CPNs and there is no on-call neurology service, CPNs should not be the named consultant responsible for the management of IPs with neurological conditions.

We recommend a hot-week model without scheduled outpatient clinics during on-call weeks. The CPN should remain on-site during working hours. Some centres have a limited number of shortened, emergency only clinics booked by the hot-week consultant only, following urgent request from regional colleagues. It is not safe to be on-call from an outreach clinic.

5. Other relevant aspects of the job plan

Multidisciplinary team (MDT) working is central to paediatric neurology practice. Some CPNs will be part of multiple MDTs each of which take time and may involve pre-MDT preparation or post MDT admin (letter writing, investigation requesting, telephoning).

Most paediatric neurology units have MDTs to discuss inpatients/outpatients usually involving therapists/ nurses/psychologists.

5.1. Recommendations for multidisciplinary teams

- Direct clinical care (DCC) time for MDTs should be allocated in all CPN job-plans. The number of MDTs a CPN is expected to attend varies, but we recommend a minimum of 0.5 PA/week.
- Additional MDT time will be required for specific sub-speciality work.

5.2. Recommendations for other essential work

- The day-to-day work of a CPN requires time for other clinical activities that do not fall into any of the above categories. These include: discharge planning, child protection, disclosure of diagnosis and bereavement counselling meetings. Some CPNs will have several such meetings per week.
- There should be 0.5 PAs in cold-weeks and 1PA in hot-weeks to accommodate these extra meetings.

5.3. Recommendation for supporting professional activities PAs

Supporting professional activities (SPA) include: mandatory training, teaching, supervision, quality and safety, CPD, appraisal, network meetings, stakeholder engagement, research.

We recommend CPN job plans include 2.5PAs for supporting professional activities in a 10PA job plan, the minimum being 2PAs. Paediatric neurology is a complex specialty often with many academic and research demands associated with each complex patient. It is important that sufficient time is allocated to support the commitments outlined in the consultant job description.

5.4. Activity monitoring and financial aspects

- It is important to accurately record the activity of a CPN and paediatric neurology department. If all that is recorded is numbers of patients seen, service development and innovation are almost impossible.

- There must be systems in place that are accurate and have medical input to record not only diagnoses and procedures but also co-morbidities and outcomes. This is the key to identifying the required resource for each patient.

- Block contracts also make service development very difficult. There is a need to support accurate databases which can identify patients who may benefit from new diagnostic procedures, treatments or be recruited to research studies.

- Activity monitoring for outpatients must occur and this must include recording of diagnosis/impairment/co-morbidities.

6. Key issues to be considered prior to submitting a job plan for a new consultant post to the RCPCH/CSAC

Before submitting a job plan for College approval you should include:

6.1. A timetable that separately describes hot-weeks and cold-weeks. Particularly, if the cold-weeks rotate, there may need to be a number of timetables to accurately describe this.

6.2. Consider the activities as above and ensure these are timetabled in terms of both start and stop times, duration and frequency.

6.3. There must be adequate Junior Supervision. The on-call Consultant needs time allocated early in the day where they are clearly available to the trainee for discussion, with appropriate access to MRI EEG etc (and not off-site).

6.4. Many applications for CSAC approval assume a 9am to 5pm working day, but do not document this. Almost invariably these need modifiying to incorporate early starts and late finishes as well as weekend activities. When **timetabling, ensure it is documented how many occur with an early start, finish late or work over the weekend.** There needs to be pro-rata recompense, with time off during the working week. Frequency/duration and timetabling should be documented.

6.5. Annualisation of numbers of clinics works well. We note that in centres working a 1:5 hot-week, assuming a 42-week working year there are 32 cold-weeks. This would equate to 64-96 clinics/year or 2-3 clinics/week on cold-weeks. This includes an assumption of no clinics in a hot-week.

6.6. The CSAC is frequently sent job descriptions missing important clinical activities such as, MRI, EEG, Pathology, Psychology and Genetic Meetings. These are essential clinical activities and should be clearly timetabled on any job plan with start and stop times.

6.7. Almost all CPNs within the UK practice a sub-speciality. The additional regional and national clinical meetings must be timetabled with duration and frequency. For example: North Star, BPEG, as well as travel times to these meetings. The timetable should include the relevant meetings that occur for the specific sub-speciality.

6.8. Each department has structured meetings either on a daily/weekly/monthly basis within their departments, for example audit, research, etc. These should be clearly timetabled.

6.9. All Consultant Paediatric Neurologists work within teaching environments. Sessions for teaching, such as national courses, regional network meetings, under and post-graduate sessions as well as relevant training for these meetings should also be timetabled.

Illustrative job plan

The job plan below is an example of a post with a neuromuscular sub-speciality requirement.

Cold weeks (non on-call weeks) 32 per year

Day	***Location***	***Times***	***Description***	***Category***	***PAs***	***Total PAs***
Monday Week A 16/32	Base Hospital	09.00-10.00	MDT work/handover	DCC	0.25	
		10.00-13.00	Teaching/educational supervision/ CPD	*SPA*	*0.75*	
	Various	13.00-19.00	Outreach clinic (incl travel time)		1.5	
					2.5	**40**
Monday Week B 16/32	Base Hospital	09.00-13.00	Admin to support outreach clinic	DCC	1.0	
		13.00-14.00	NM Team meeting/neuropath	DCC	0.25	
		14.00-17.00	Teaching/Education supervision/CPD	SPA	*0.75*	
					2.0	**32**
Tuesday 32/32	Base Hospital	08.30-13.00	NM clinic and MDT meeting pre clinic	DCC	1.125	
		13.00-17.00	Admin to support the NM clinic	DCC	1.0	
					2.125	**68**
Wednesday 32/32	Base Hospital	09.00-10.30	Neuromuscular Liaison/resp care/ ward review	DCC	0.375	
		10.30-12.00	CPD	*SPA*	*0.375*	
		12.00-13.00	Neuroradiology MDT	DCC	0.25	
		13.00-1700	Neuroscience teaching/ audit/ governance	*SPA*	*1.0*	
					2.00	**64**
Thursday		Day off	Off			
Friday 32/32	Base Hospital	09.00-13.00	General Neurology clinic	DCC	0.5	
		13.00-17.00	Admin to support general neurology clinic	DCC	1.0	
					2.0	**64**
Saturday						
Sunday						
Additional agreed activity to be worked flexibly						
Unpredictable / predictable emergency on-call work						
Total DCC PAs					**6.25**	**200**
Total SPA PAs					**2.125**	**68**
Total PAs					**8.375**	**268**

DCC = Direct clinical care

SPA = Supporting professional activities

Hot-weeks 10 weeks per year

Day	***Location***	***Time***	***Work***	***Category***	***PAs***	***Total PAs***
Monday	Base Hospital	08.30-12.30	PICU/Ward rounds/ward work	DCC	1	
		12.30-17.30	Ward work/clinical admin	DCC	1.25	
					2.25	**22.5**
Tuesday	Base Hospital	08.30-09.30	PICU/Ward rounds	DCC	0.25	
		09.30-13.30	Ward based 'rapid access' clinic	DCC	1	
		13.30-14.30	Bedside teaching	*SPA*	*0.25*	
		14.30-17.30	Ward round/ward work	DCC	0.75	
					2.25	**22.5**
Wednesday	Base Hospital	08.30-13.30	PICU/ Ward round/MDT meeting/ neuroradiology and EEG meeting	DCC	1.25	
		13.30-15.30	Postgraduate meeting/SpR teaching	*SPA*	*0.5*	
		15.30-17.30	Ward work/clinical admin	DCC	0.5	
					2.25	**22.5**
Thursday	Base Hospital	08.30-12.30	PICU/Ward rounds/ Ward work/ clinical admin	DCC	1.0	
		13.30-14.30	Fetal medicine consults	DCC	0.25	
		13.30-17.30	CPD	*SPA*	*1*	
					2.25	**22.5**
Friday	Base Hospital	08.30-12.30	PICU/Ward rounds/ward work/Neurosurgical team meeting	DCC	1	
		12.30-17.30	Ward work/clinical admin	DCC	1.25	
					2.25	**22.5**
Saturday	Base Hospital	09.00-12.00	PICU/ Ward round	DCC	1	
					1	**10.0**
Sunday	Base Hospital	09.00-12.00	PICU/ Ward round	DCC	1	
					1	**10.0**
Additional agreed activity to be worked flexibly						
Predictable emergency on-call work	Base Hospital			DCC	**0.5**	**5.0**
Unpredictable emergency on-call work	Base Hospital	variable	Telephone consults/travel to and from hospital	DCC	**1.25**	**12.5**
Total DCC PAs					**13.25**	**132.5**
Total SPA PAs					**1.75**	**17.5**
Total PAs					**15.0**	**150.0**

DCC = Direct clinical care

SPA = Supporting professional activities

Activity Summary (the totals must match that of the job content section)

32 Cold-weeks per annum x 8.375 = 268 PAs per year (of which 68 are SPA)
10 Hot-weeks per annum x 15.0 = 150 PAs per year (of which 17.5 are SPA)
Total = 418PAs / 42 weeks = 9.95 per week (includes DCC + SPA)

References

1. NICE Clinical guideline [CG137]. Epilepsies: diagnosis and management. 1.10 Referral for complex or refractory epilepsy. Updated April 2018 https://www.nice.org.uk/guidance/cg137/chapter/1-Guidance#referral-for-complex-or-refractory-epilepsy

2. Geerts et al. Course and outcome of childhood epilepsy: A 15-year follow-up of the Dutch Study of Epilepsy in Childhood. Epilepsia. 2010; 51: 1189–1197

3. Berg AT et al. How long does it take epilepsy to become intractable? A prospective investigation. Annals of Neurology. 2006; 60: 73-9

4. Davies SJ et al. Commissioning Clinical Genetics Services: Royal College of Physicians of London 1998