

A Framework of Competences

**for Level 3 Training
in Paediatric Neurology**

July 2006

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FOREWORD

I am very pleased to present this final stage, Level 3, of our Framework of Competences in Paediatrics. This level 3 document builds on the two preceding frameworks we have published, for Basic Specialist Training and for Core Higher Specialist Training, now re-named as Levels 1 and 2. The emphasis is firmly on the achievement of competences and not on a time-based training programme. From August 2007 all trainees will enter specialty training within the framework outlined in the Modernising Medical Careers initiative. Achievement of these competences will determine a trainee's progress through the specialty training programme.

The development of this Level 3 framework, with our fifteen sub-specialty curricula, has represented a huge amount of work. I would like to thank all those chairs and members of our College Specialist Advisory Committees (CSACs) who have shown such commitment and support to this project. In particular, we would like to thank Dr Edward Wozniak and Dr Gabrielle Laing, Chairs of General Paediatrics and Community Child Health CSACs respectively, who have been involved in the development of the competences at all three levels.

The College Officers responsible for training have guided and supported this work unstintingly for the last eighteen months and I would like to thank Dr Mary McGraw, Dr Claire Smith and Dr Ian Doughty for their commitment and involvement in the project. In addition, we would like to thank Kim Brown for the development and co-ordination of this work.

These documents have been prepared for submission to PMETB in July 2006 and we hope to publish them, subject to their approval, by Christmas 2006.

Patricia Hamilton
President, Royal College of Paediatrics and Child Health
1 July 2006

Section 1 Introduction

Who is this book for?

It is for doctors at Level 3 in their training in Paediatric Neurology, their tutors and educational supervisors.

Why do I need it?

The book gives you and your tutors guidance about the areas you need to cover during your training. It gives a clear picture of what you have to have achieved by the end of this stage of training, before you become a consultant. You need this book as it forms the basis of your assessment at the end of Level 3 Training.

How do I use the book?

You can sit down with the book on your own and use it to help you identify areas of practice that you need to work on and those areas in which you feel fairly confident. You can talk to your tutor about the balance of your experiences and look for ways to ensure that you cover all the areas you need to.

Progression

This is the final stage in your training as a paediatrician. The competences you gained during Level 1 (Basic Specialist Training) and Level 2, Core Higher Specialist Training have formed the basis for your progression into Level 3 training and on to a Consultant post. Table 1 (page 9) illustrates this progression through your training.

A note about the format of this document

This framework sets out the competences that you need to achieve by the end of Level 3 Training. These build on and develop statements of competence set out for Levels 2 and 3. You are expected to work from all three documents throughout this final stage of your training to ensure that you maintain and continue to develop areas of competence already acquired as well as developing new ones.

Sections 2 and 3 present new statements of competence for Level 3 only, in order to keep the focus clear. Trainees will need to refer back to previous documents for Level 1 and 2 competences in General and General Clinical competences.

A note about assessment

The statements in this book have been expressed as learning *objectives*. These are the focus of your training.

When it comes to your assessment, at the end of this phase of your training, we will want to know how *well* you have achieved these objectives and to be confident that you are fit to practise as a Paediatric Consultant. This is what we mean when we talk about your *competence*. So while here you may have, for example, a number of detailed objectives relating to consultation skills or communicating with children, in your assessment we will want to see how you bring all these together and how competent you are overall in your communication skills. This document is not intended as an assessment document but to support training. The assessment of your competence will be by work-based assessments already in use and currently being developed.

Working group:

Kim Brown	Training and Assessment Adviser
Ian Doughty	Officer for Level 3 Specialist Training
Gabrielle Laing	Chair, Community Child Health Specialist Advisory Committee
Mary McGraw	Vice-President for Training and Assessment
Claire Smith	Donald Court Fellow
Edward Wozniak	former Chair, General Paediatrics Specialist Advisory Committee

Progression in the Professional Development of a Paediatrician

During Level 1	During Levels 2 and 3	Continuing development as a consultant
<i>Acquires fundamental knowledge base</i>	<i>Applies knowledge base to provide appropriate clinical care</i>	<i>Evaluates knowledge and modifies clinical care pathways to enhance patient care.</i>
<i>Acquires clinical examination and assessment skills and applies these in clinical practice</i>	<i>Analyses clinical findings to derive appropriate differential diagnosis and management plans.</i>	<i>Evaluates assessment findings; refines and modifies management plans.</i>
<i>Acquires all basic technical skills and basic life support</i>	<i>Proficient at all basic technical procedures, some complex procedures and provides advanced life support.</i>	<i>May relinquish some skills in these areas dependent on area of clinical practice. May acquire specialty specific skills.</i>
<i>Performs allocated tasks and begins to plan tasks</i>	<i>Plans and prioritises tasks appropriately.</i>	<i>Increasing expertise with evaluation of priorities and appropriate delegation across a wide range of professionals.</i>
<i>Performs allotted teaching tasks</i>	<i>Plans and delivers teaching to trainees and other professionals. Develops peer mentoring skills.</i>	<i>Plans and modifies curricula. Performs assessment and appraisal. Able to provide mentorship.</i>
<i>Aware of management issues</i>	<i>Develops management skills and able to take responsibility for a defined project. Contributes to Committees.</i>	<i>Can negotiate and deal with conflict. Can contribute to and lead committees. Evaluates and modifies management structures.</i>
<i>Performs allocated audit projects and understands the audit cycle</i>	<i>Designs audit project and understands risk management. Able to write appropriate clinical guidelines. Understands the Clinical Governance implications</i>	<i>Facilitates audit, and evaluates results. Evaluates guidelines and ensures implementation of appropriate changes</i>
<i>Understands the principles of critical appraisal and research methodology</i>	<i>Able to appraise the literature critically and apply to clinical practice</i>	<i>Able to evaluate critical appraisal performed by others. Able to lead research projects and support others in research.</i>
<i>Works in multi-professional teams</i>	<i>Able to take the lead and accept leadership from other members of the multi-disciplinary team</i>	<i>Evaluates and modifies multi-professional team-working</i>

What is a Paediatrician?

Paediatricians have a detailed knowledge and understanding of diseases in children. They are skilled in looking at health and ill-health in babies, children and adolescents, and at specific health issues, diseases and disorders related to these stages of growth and development. They develop expertise in practical procedures specifically related to the good clinical care of small babies and children. Paediatricians work in multi-disciplinary teams and with colleagues from a wide range of professional groups in hospitals, general practice and in the community, in social services and schools and with the voluntary sector. They have strong communication and interpersonal skills and take on a variety of roles within their different communities of practice. They share expertise effectively and assume the responsibilities of teaching, leadership and management roles where appropriate. They work with colleagues to ensure consistency and continuity in the treatment and care of children and young people in all aspects of their well-being. They are committed to a policy of advocacy for a healthy lifestyle in children and young people and for the protection of their rights.

Paediatricians are doctors who have a particular compassion and respect for children, young people and their families and enjoy working with them. They have an expert understanding of the ways in which illness affects the child, the parents and the rest of the family and are skilled in the management of emotionally complex family situations. They show patience and sensitivity in their communications with children and their families and a particular ability to explore each individual's perspectives of a problem. They are aware of religious and cultural beliefs that parents might hold about the treatment of their children. They know how to respond in these cases, when to seek support and where to find legal and ethical guidelines to support their practice.

Paediatricians ensure that they are up-to-date in their practice and endeavour to promote evidence-based medicine where possible. They are keen to develop innovative approaches to teaching in paediatrics and to research. They are committed to the highest standards of care and of ethical and professional behaviour within their specialty and within the medical profession as a whole. Central to their work is the principle that all decisions should be made in the best interests of the child or young person in their care.

Contexts for Learning

In drawing up this framework of competences, we have envisaged a wide range of opportunities in which trainees will learn. They will be expected to work on their own, using databases and electronic libraries to research particular conditions or areas of professional practice. This work might be in preparation for a clinic, or a presentation to a group of trainees and supervisors. Trainees may engage with a distance-learning programme in order to develop greater expertise in an area that interests them or that they need to strengthen. Supervisors will need to ensure opportunities for trainees who have undertaken independent study of this kind to share their learning with others. It is through teaching about something you have read or learned or understood differently that learning is consolidated and questioned.

Feedback is essential at all stages of the teaching and learning process. Even in the course of a lecture or on a ward round trainees can communicate important messages about their learning needs through facial expressions and body language as well as in their answers to questions. Tutors need to be ready to pick up on these, to seek out actively trainees' responses to their teaching so that they can make adjustments accordingly and ensure that effective learning takes place.

As well as independent study, trainees will find themselves in a number of different communities of practice. In many cases, their learning will result from shared discussion around the diagnosis of a condition, for example, or the identification of an injury. Experienced colleagues from a range of disciplines may join a specialist team, each sharing their expertise, in order to come to a safe diagnosis or decision about how to proceed, for example in the case of suspected abuse. Trainees need to be encouraged to join these discussions so that they develop confidence in their communication skills with colleagues and in their ability to contribute to clinical decision-making.

Supervisors need to be aware of the importance of asking questions in these situations and of the most effective way to do this, so that trainees are fully engaged and learning as they listen. Closed and open questions have their place, and explicit educational strategies such as 'scaffolding' are essential. The teacher takes the learners, step by step, from their initial level of understanding of a condition or a process, for example, to a deeper or more extensive understanding, through a formal cycle of informing, questioning, informing, testing out and consolidating new information. Ward rounds and clinics offer good opportunities for this kind of interaction, with individual trainees and groups. The exchange may be brief or sustained and it is the close focus on understanding which gives this teaching technique its power. Trainees are also encouraged to write a reflective log and it is important to make clear that this needs to go beyond a narrative of events to an analysis of the process of learning they are experiencing. This, in turn, will equip them well to become teachers themselves of less experienced colleagues.

The college is committed to an explicit educational approach. Identifying contexts for learning is the first step. But it is important to go beyond this to a consideration of the way in which different contexts influence the teaching and learning that take place or that are required. It is helpful to be able to identify apprenticeship models, or experiential learning but these alone do not tell us much about the teaching and learning process. The curriculum sets out *what* is to be learned and we know *where* these things will be learned. But it is also essential to understand *how* teachers and trainees will learn.

With the completion of the curriculum, the college is now working on resources to support the teaching and learning of its contents and on guidance for trainees and supervisors on the pedagogical process of training in Paediatrics.

For an overview of teaching and learning in postgraduate medicine, see *Liberating Learning* (COPMED, 2002).

Section 2 General Competences

Knowledge and Understanding

Substantial re-wording or new statements of competence for Level 3 Training

- understand the impact of physical illness on mental functioning, for both children, young people and their parents and the effect of each upon the behaviour and functioning of the other
- understand the impact of relations and mental health upon a child's or young person's current and past emotions and behaviour
- understand the impact of culture and ethnicity in presentations of physical and psychological conditions
- know, understand and be able to compare and contrast medical and social models of disability
- understand the relationship between local health, educational and social service provision
- know about the agencies, both statutory and voluntary, that can provide general and condition-specific support to children, adolescents and their families in coping with their health problems
- know the objectives of paediatric follow-up

- understand and take account in their practice of risk issues to themselves and others, including those related to personal interactions, and bio-hazards
- have a working knowledge of risk assessment and its application to personal, professional, clinical and organizational practice
- understand and take account in their practice of measures to reduce clinical risk
- know how relative and absolute risks are derived and the meaning of the terms predictive value, sensitivity and specificity in relation to diagnostic tests
- know the legal and ethical guidelines to support their work and where to find more information when required
- be aware of the multidisciplinary investigation of sudden unexpected death in infancy
- understand the management of bereavement and be aware of national guidance documents on this
- understand the purpose of post-mortem examinations and know about procedures
- understand the process of bereavement in children and families and recognise abnormal grieving patterns

Competences specific to the specialty

By the end of Level 3 Training in Paediatric Neurology, trainees will:

- have detailed knowledge and understanding of the pathophysiology of common disorders affecting the nervous system in children
- know and understand the life-long implications of chronic neurological conditions presenting in childhood
- know and understand neurological diseases that rarely but importantly can present in childhood, for example demyelinating disease
- know the differential diagnosis of acute and chronic, progressive and non-progressive ataxia
- understand the principles and use of neuro-radiological imaging
- know the indications, contraindications and limitations of magnetic resonance imaging (MRI), computerised tomography (CT), angiographic and other neuroimaging modalities
- know about the techniques for Electromyography, nerve conduction (velocity) studies, visual evoked potentials, electroretinography (EMG and NCV, VEP and ERG)
- understand the acute toxicity of cancer treatment (individual drugs and radiotherapy)
- understand the principles of biopsy and definitive surgery and optimal handling of tissue for diagnosis and biological studies
- understand the importance of tumour and DNA banking for future research
- have a knowledge and understanding of the late effects of therapy, including endocrine consequences, major organ toxicities and their causative agents

(see *Good Medical Practice* (GMC 2001) - Good Clinical Care: 2, 3; Delegation and Referral: 45, 46.)

Skills

Substantial re-wording or new statements of competence for Level 3 Training

- recognise the breadth of different presentations of common disorders
- recognise features of undifferentiated illness which suggest serious or unusual pathology and initiate the appropriate clinical response with appropriate urgency
- recognise the diseases and host characteristics which make certain presentations life-threatening and manage these situations with vigilance and appropriate urgency
- be able to recognise when both physical and psychological problems are present and when more than one condition or disorder may be present
- be able to assess and manage co-morbidities associated with the range of

- paediatric presentations
- take a history from a child, young person and parent of the presenting difficulties to acquire information in sufficient breadth and depth in a range of possible symptom areas to allow accurate formulation of the problem
- be able to undertake an assessment of the mental state of children and young people, taking into account their age and stage of development and know whether they have the skills to help them and when to seek more expert paediatric, mental health or psychiatric assessment
- have developed observation skills to support their interpretation of children's or young people's developmental levels and possible physical signs when they are unable to co-operate with formal assessments
- be able to supplement clinical assessment with standardised instruments or questionnaires
- know when to gather information from other professionals eg those working in education, social work or from others who see the child in a variety of settings
- be able to seek the views of children and young people, whatever their illness, regarding individual care and service planning, using expert resources appropriately
- be able to make a decision on the 'most likely' diagnosis and discuss this effectively with children and young people and their parents or carers, and with other colleagues, in the context of a plan of investigation and management
- be able to formulate a management plan for complex cases
- be able to review and modify a management plan as appropriate and know when to request help from senior colleagues or other services
- be able to take responsibility for the longer-term management of common acute and chronic cases leading or working with the multi-disciplinary and multi-agency teams, sub-specialists or networks as appropriate
- have developed expertise in practical procedures specifically related to the clinical care of small babies and children, and young people
- be able to develop and work within care pathways
- be able to manage and know how to obtain support for the consequences of chronic illness for a child, young person and their family
- be able to work effectively in multi-disciplinary teams and with colleagues from a wide range of professional groups
- be able to interact effectively with professionals in other disciplines and agencies and from the voluntary sector
- be aware of their role in the team and of their impact in the team

- have developed skills in recording consultations accurately and sensitively whilst maintaining a good rapport with the young person and family
- have developed a wide range of effective age-appropriate communication skills specific to their work with babies, children, young people and their families
- have developed credibility in their relationships with children, young people and their families, and with colleagues through their knowledge and skills and experience in clinical practice and in their ability to work independently
- have developed strategies to manage a child's or young person's anxiety and personal anxieties
- have developed basic behavioural management skills with parents, children and young people and with other professional colleagues
- be able to recognise, acknowledge and manage different levels of parental anxiety
- be able to assess patterns of relationships and functioning within a family and how these might impact on a child's or young person's illness, seeking professional advice where appropriate
- have developed effective skills in the management of emotionally complex family situations
- be able to recognise indicators of stress or mental health problems in family members and communicate appropriately with relevant professionals
- be able to remain calm in stressful or high-pressure situations and take a timely, rational approach to the problem
- be able to approach new situations which require good clinical judgement with an analytic and informed approach
- show confidence and independence in decision-making in the care of patients

- be able to apply effectively to their practice the knowledge and understanding acquired during training
- have developed a reflective approach to their practice, with an awareness of their level of expertise and limitations and their development needs
- show an ability to learn from their previous good practice, and from clinical errors

- be able to practise evidence-based medicine and understand and analyse critically its limits
- be able to understand the limitations of guidelines, how to use guidelines effectively and when it is appropriate to work outside guidelines
- have developed skills to deal with issues of confidentiality and stigma associated with the presenting difficulties and family background issues
- be able to discuss an assessment of the psychosocial health of a child or young person with the multi-disciplinary team while respecting patient confidentiality

Competences specific to the specialty

By the end of Level 3 Training in Paediatric Neurology, trainees will:

- be able to assess the level of consciousness of the patient, recognise raised intracranial pressure and the indications for intensive care
- be able to formulate and lead an appropriate investigation plan for a range of neurological conditions based on clinical localisation of pathology derived from examination findings and likely pathological mechanism based on history
- be able to distinguish ataxia from other movement disorders and developmental discoordination (dyspraxia)
- be able to distinguish cerebellar, sensory and mixed ataxias
- be able to assess when it is safe to perform lumbar puncture, recognising the indirect harm caused by failure to perform a lumbar puncture when indicated
- be able to interpret EEG tests, including recognition of common normal variants
- be able to identify standard neuron-anatomical structures on coronal, sagittal and axial imaging sections

(See *Good Medical Practice* (GMC, 2001) - Good Clinical Care: 2,3; Maintaining Trust: 19; Working with Colleagues 34, 36; Probity: 50.)

Values and Attitudes

Substantial re-wording or new statements of competence for Level 3 Training

- be committed to a policy of advocacy for a healthy lifestyle in children and young people and for the protection of their rights
- understand national and contribute to local initiatives aimed at reducing inequalities in child health and well-being
- practise with compassion and respect for children, young people and their families and act as a role model for others
- adopt an open-minded approach to equality and diversity in their practice
- be aware of the effects of social, cultural and religious context and conflict upon families
- understand the importance of cultural diversity and the difficulties where religious and cultural beliefs that parents might hold about the treatment of their children are in conflict with good medical practice and know when legal and ethical guidelines will support your management or view of the situation
- have developed strategies to manage relationships where health-care beliefs might cause conflict
- be able to advise patients appropriately on debates and controversies in health care

- be sensitive to the effects of stigma on children and families in relation to medical conditions
- be able to work effectively with children, young people and parents or carers, to agree and help them follow management plans
- be able to work effectively with young people who may have or may develop health care beliefs which are in conflict with those of parents or professionals, and know when legal and ethical guidelines will support your management or challenge of the situation
- be able to accept complex and difficult challenges
- show an understanding of the importance of ensuring a healthy balance between professional and domestic priorities
- have the willingness to acknowledge and reflect on the way in which they may, influenced by their earlier life experiences, have an impact on perceptions of and interactions with young people, their families and professionals

(See *Good Medical Practice* (GMC, 2001) - Good Medical Practice: 1; Good Clinical Care: 5; Maintaining Trust: 19; Working with Colleagues: 36.)

Teaching and Research

Substantial re-wording or new statements of competence for Level 3 Training

- have developed a range of effective teaching and learning skills in a range of clinical contexts
- be able to identify learning needs in a wide range of professionals and build on this in their teaching
- be able to elicit and act upon feedback on content and presentation of teaching
- be able to participate in teaching and research on topics within their specialty and in related areas
- conduct research with honesty and integrity, seeking ethical approval where appropriate and safeguarding the interests of patients
- demonstrate an understanding of ‘good clinical practice’ for all aspects of the conduct of clinical trials
- demonstrate an understanding of the role of ethics committees for clinical studies and the process of ethics applications
- understand the techniques used in epidemiological studies
- demonstrate an understanding of how to perform and interpret systematic reviews, how they differ from narrative reviews and understand the principles of meta-analysis

- understand the difference between population-based assessments and unit-based studies and be able to evaluate outcomes for epidemiological work
- be able to develop clinical guidelines, understand how they are produced nationally and how these should be used to guide their own practice
- be able to evaluate research effectively in paediatrics and child health
- take responsibility for the training, supervision and assessment of undergraduates and trainees and other professionals such as nurses, teachers and social workers in and outside the specialty
- have developed skills in the presentation of information relevant to their clinical practice for a range of audiences, including spoken presentations at meetings, written information for children and families and training materials for different groups of colleagues
- be able to lead departmental teaching programmes, including journal clubs
- be willing to accept mentoring as a positive contribution to their own professional development
- be willing to learn from others, to discuss cases openly and to seek advice as appropriate and as necessary

(See *Good Medical Practice* (GMC, 2001) - Teaching and Training, appraising and assessing: 13, 14, 15, 16; Probity: 51.)

Leadership and Management

Substantial re-wording or new statements of competence for Level 3 Training

- be able to provide specialist support to hospital- and community-based paediatric services including primary care
- be able to take on a leadership role in a multi-disciplinary team when appropriate, for example by representing the health needs of a child, young person and their family at a discharge meeting, and know when it may be inappropriate to do so
- be able to work effectively in multi-agency teams, for example, with social workers and teachers, and have developed an awareness of their own role within the team and of the skills and expertise of others
- be confident to make decisions within a team and be aware of their impact on other team members
- be able to advise the team providing advanced life support and to liaise effectively with anaesthetic and PICU staff

- demonstrate effective leadership skills in clinical situations, for example through their ability to organise, prioritise and delegate, and be able to help others to develop these skills
- have skills and strategies to manage conflict effectively
- have understanding and skills to be able to participate effectively in clinical and management meetings
- have developed effective administrative skills including ways to make best use of secretarial resources
- be able to handle enquiries from the press and other media effectively
- recognise their own working preferences and accept different approaches of colleagues
- know how to respond appropriately to health service targets and be able to participate in the development of services
- be able to work with stake-holders so that a client- or patient-centred service is created and sustained
- have gained an understanding of national and local regulatory bodies, particularly those involved in standards of professional behaviour, clinical practice and education, training and assessment
- understand the value and limitations of evidence-based medicine

(See *Good Medical Practice* (GMC, 2001) - Working with Colleagues: 34, 35, 36, 39, 42.)

Personal Commitment to Professional Standards

Substantial re-wording or new statements of competence for Level 3 Training

- understand the duty of all professionals working with children to report concerns about child protection issues to Social Services
- be able to contribute to the implementation of national and local health policy initiatives
- know and follow key legal and ethical guidelines relating to confidentiality, consent to treatment, the right to refuse treatment, continuing changes in the law and its interpretation and be aware of variability in Scotland, Wales and Northern Ireland
- be able to generate local and evaluate national clinical guidelines and protocols in paediatric practice and public health and recognise the individual patient's needs when using them
- participate and take responsibility for clinical governance activities, and encourage and support colleagues in their participation

- be able to carry out audit in a range of settings in partnership with all stakeholders in order to identify best practice
- know about and participate in clinical and research special interest groups relevant to their specialty
- know when in the interest of the child it may be necessary to break confidentiality
- know how to find, review and maintain relevant knowledge in their specialty in order to maintain their fitness to practise
- ensure that they are up-to-date in their practice and promote evidence-based medicine where possible
- be able to evaluate their own performance critically
- be open about sharing and reviewing their practice with others
- be aware of local processes for dealing with and learning from clinical errors and to be able to work within them

(See *Good Medical Practice* (GMC, 2001) - 1; Maintaining Good Medical Practice: 10, 12; Relationships with Patients: 17; Working with Colleagues: 35; Dealing with Problems in Professional Practice: 26, 27, 29, 30. Probity: 58.)

See also for all of these sections: *Good Medical Practice in Paediatrics and Child Health*,² London: Royal College of Paediatrics and Child Health (2002).

Communication Skills in Paediatrics

Substantial re-wording or new statements of competence for Level 3 Training

- understand the importance of directing communications to the baby, child or young person as well as to parents and carers
- have developed skills to establish a child's or young person's and family's understanding of a situation and to build on this effectively in discussion about the condition and its management
- understand the importance of seeking the views of all children and young people to inform decisions about their individual care and to encourage their participation in their care
- encourage children and young people to participate in their individual care and in the development of services, using expert resources appropriately

² *Good Medical Practice in Paediatrics and Child Health*, London: Royal College of Paediatrics and Child Health (2002). Online at www.rcpch.ac.uk/publications/recent_publications.html

- have effective active listening skills in consultations with children and young people and understand the need to respect their views in accordance with their age and maturity and to respond appropriately where, for example, a child or young person is felt to be vulnerable
- have developed effective skills in working with children, young people and families to achieve concordance in planning management and treatment, enabling children and young people to maximise control over their illness and its management
- be able to respond appropriately, and know where to find assistance, in cases where a child, young person or family may not all speak English or where there is a sensory impairment that may affect understanding
- be able to respond to babies, disabled children or young people who may not be able to express themselves verbally, including those who might be in pain or distress
- be able to recognise, interpret correctly and respond to verbal and non-verbal cues from children, young people and parents
- have developed observation skills to support their interpretation of children's or young people's developmental levels and possible physical signs when they are unable to co-operate with formal assessments
- demonstrate appropriate responses and empathy for children, young people and their families experiencing difficulty and distress
- have developed a range of language strategies, such as the use of metaphor or images which relate to everyday life, to explain clearly to a child or young people and their family, their symptoms, condition or treatment, their feelings or behaviour

- be able to counsel parents about serious conditions and abnormalities within their area of expertise
- have effective strategies for careful and appropriate use of language in difficult and challenging circumstances, for example, at the birth of a baby with disabilities or where there is a conflict with colleagues
- be able to discuss the indications, benefits and adverse events of a procedure to patients, relatives and carers in a manner that will allow informed consent
- have developed a range of approaches to communicating the breadth of diagnostic possibilities and other clinical information to children, young people and their families so that consent is always informed and the plan and progress of treatment understood
- be able to advise children, young people and their families about the importance of concordance and about medication interactions and side-effects
- be able to convey and share effectively difficult or bad news, including end-of-life issues, with children, young people, parents or carers and help them to understand any choices they have or decisions to be made about ongoing management

- be able to prepare and discuss with parents, carers and other professionals “Do not attempt resuscitation” policies as appropriate, taking due account of the Human Rights Act (1998), ensuring that the best interests of the child are held as paramount at all times
- be able to seek consent for post-mortem examinations and communicate effectively with the Coroner

- be able to confirm with children, young people and their families their understanding of a situation from what has been said and written and clarify this as appropriate
- be able to explain the role of other professionals and agencies to children, young people and their families
- have the confidence to be firm and diplomatic in difficult situations, for example, when dealing with angry parents
- understand the limits of their competence, particularly in stressful situations and be willing to seek help in managing sensitive and complex situations
- be able to demonstrate to trainees how to communicate a diagnosis and prognosis effectively to children, young people and their families
- be able to demonstrate and explain to trainees strategies used to conduct effective consultations with babies, young children, adolescents and their families

- have effective skills in written communications for a range of audiences, for patients and their families, colleagues and other professional organizations
- ensure that spoken and written communications with patients and families are presented in clear, straightforward English, avoiding jargon whenever possible
- ensure that written information in the form of booklets, leaflets, information sheets and websites support verbal communications wherever possible
- ensure that written communications summarise accurately discussions with children, young people and parents or carers, and, to avoid confusion and anxiety, do not include information that was not part of the original discussion

- be able to liaise with parent support and self-help groups when necessary
- be able to prepare a court report as a professional witness and develop the skills to present such material in court
- know how to write reports about alleged abuse of children and young people for social services or the courts
- be able to write reports that explain the condition of a child or young person to non-health personnel working in the courts, social services or education
- be able to use electronic communication media, taking into consideration the principles of confidentiality outlined in the Data Protection Act

- have developed effective professional networks to support clinical practice and other activities, including research, education and management

Competences specific to the specialty

By the end of Level 3 Training in Paediatric Neurology, trainees will:

- be able to advise young people and adults on the implications of neurological conditions for adult life, including issues related to employment, and driving
- be familiar with sexual and reproductive health implications of a range of neurological conditions for adolescent boys and girls
- know the principles of successful transitional care for young people with neurological conditions requiring handover to adult neurological services

Section 3 General Clinical Competences

Development

Substantial re-wording or new statements of competence for Level 3 Training

- know the range of patterns of normal development from birth to adulthood
- know and understand the range of children's or young people's psychological and social development, including the normal range and what is outside it
- be able to identify when patterns of development are abnormal and where there may be a risk of abnormality which may only become apparent with time
- know the causes of disability, how disability might affect clinical examination and assessment and be able to contribute to a multi-disciplinary approach to management
- understand the severity of the presentation, taking into account normal development in appropriate domains
- know how to institute further assessment and investigation
- know about different modes of screening and health promotion strategies

- understand the ways in which children's or young person's mental health difficulties may present in infancy, childhood and adolescence
- understand the impact of biological factors, including genetic and cognitive factors, on the mental health of children and young people
- understand the impact of other environmental factors (including violence, trauma, neglect, abuse and disruption, wherever this has occurred) on a child's development, mental health and functioning
- be able to assess the effects of recurrent or chronic illness and its treatment on growth, psycho-social, emotional, physical and sexual development and have strategies to minimize adverse effects

Emotional development

Substantial re-wording or new statements of competence for Level 3 Training

- understand and recognise somatisation disorders and know how to provide initial management and how to access appropriate support
- recognise pointers to fabricated and induced illnesses and know how to provide initial management and how to access available support

- understand the emotional impact of illness and hospitalisation on children, young people and their families and take action to minimize this impact
- understand how a family's, child's or young person's attitude to the problem and services may have a significant impact on the presentation and its management
- recognise the need for specialised input in cases of serious emotional distress or mental illness and ensure their needs are met within local health provision
- understand the emotional dimensions of eating disorders and recognise and initiate treatment

- be able to assess parenting skills and recognise and respond to indications of unsatisfactory or unsafe parenting
- know how to access help in cases where children or young people of different ages might be deprived of opportunities to play and to learn
- know how to manage common behavioural problems

Social development

Substantial re-wording or new statements of competence for Level 3 Training

- be able to recognise and understand the impact of autistic spectrum disorders and other organic disorders on social development

Educational development

Substantial re-wording or new statements of competence for Level 3 Training

- demonstrate, in all aspects of their practice, an understanding, of the vulnerability of a child or young person with learning difficulties

Growth and Nutrition

Substantial re-wording or new statements of competence for Level 3 Training

- know the reasons for faltering growth, including emotional factors and how to investigate appropriately
- understand and assess normal and abnormal pubertal development and its relationship to growth
- understand the environmental factors contributing to obesity and how these might be altered

- be able to recognise feeding problems and work with parents directly to offer simple advice and to treat co-morbid conditions
- know about the principles and methods and indications for nutritional support and common problems that may arise from invasive methods or refeeding
- be able to identify nutritional deficiencies and growth failure which may occur in children and young people who undergo unsupervised dietary modification

Adolescence

Substantial re-wording or new statements of competence for Level 3 Training

- understand what the specific needs of young people are, in terms of their emotional, mental and physical health, and how these are different from those of children
- know the epidemiology of the main causes of morbidity and mortality in young people
- ensure that young people have access to ‘in-patient’, ‘outpatient’ and other medical services that best meet their needs
- understand why young people harm themselves and respond appropriately to actual or threatened episodes of self-harm in adolescents
- understand the consequences of self-harm and be able to work as part of a clinical network in the management of the young person who self-harms
- be able to discuss sexual health issues including basic contraceptive advice and know how to help the young person access appropriate sexual health or genetic advice
- know about national policies concerning the health care of young people, including those which help to reduce teenage pregnancy
- understand the processes of adolescence including experimental behaviours, learning by experience, achieving independence from the family, and the consequences of these on health and illness in young people
- be able to discuss comfortably with young people important health behaviours such as the use of tobacco, alcohol or recreational drugs, and intimacy and sexual activities together with the promotion of appropriate strategies for these in relation to specific conditions such as asthma, diabetes, cystic fibrosis, physical disability
- understand the particular needs of adolescents with regard to their independence and autonomy, education and work, body image and sexual identity, concordance with medication and risk-taking and understand how these factors may be affected in young people with chronic conditions

- be able to support young people in self-management of both acute and chronic disease where they want to, and have an understanding as to how to best help when the young person cannot or does not want to manage this
- be able to discuss the implications of chronic illness or disability for career options
- where appropriate and at a negotiated time, be able to raise and agree management of end-of-life issues with young people and their families and record conclusions in medical notes
- understand issues around transition from paediatric to adult care in adolescents with chronic conditions and disabilities, and be able contribute effectively to transitional care services
- understand and value the roles of members of the multidisciplinary team in the delivery of a transitional care programme

Section 4 Specialty-specific Competences in Paediatric Neurology

Neurology

Acute presentations

The patient presents with:	Knowledge and understanding	Skills
Paroxysmal events	<p>know the important non-epileptic paroxysmal phenomena in neonates, infants, young children, older children and adolescents</p> <p>know the motor and autonomic phenomena that can occur as part of syncope</p> <p>understand the limitations of EEG in relation to establishing a diagnosis of epilepsy</p>	<p>be able to interpret video and video-EEG recordings of paroxysmal events</p> <p>be able to recognise a non-epileptic attack disorder</p> <p>be able to recognise cardiac causes of paroxysmal events</p> <p>be able to initiate appropriate treatment for severe syncope and reflex asystolic syncope</p> <p>be able to organise a programme of investigation that may differentiate between these causes</p> <p>be able to explain the concept of non-epileptic attack disorder to child and family in a beneficial and therapeutic manner</p>
Acute and/or continuing seizures	<p>understand the role of the EEG in syndromic diagnosis of epilepsy</p> <p>know the approaches to the management of sub-clinical (non-convulsive) status epilepticus</p> <p>know the mechanisms of morbidity and mortality due to convulsive status epilepticus and its treatment</p>	<p>be able to formulate the syndromic diagnosis of important childhood epilepsies</p> <p>be able to lead early treatment for acute continuing seizures</p> <p>be able to lead ICU management of convulsive and non-convulsive status epilepticus in conjunction with ICU staff</p>

Acute presentations cont.

The patient presents with:	Knowledge and understanding	Skills
Acute encephalopathy	<p>know the causes of encephalopathy in all age groups including neonates</p> <p>know the role of neurosurgical interventions in the management of raised intracranial pressure in traumatic and non-traumatic encephalopathy</p> <p>know the clinical, neuro-physiological and neuro-radiological indicators of prognosis after acquired brain injury</p>	<p>be able to determine conscious level and the need for ICU support including indications for ventilation</p> <p>be able to lead investigation for causes of acute non-traumatic encephalopathy in all age groups including neonates</p> <p>recognise brain herniation syndromes</p> <p>liaise in the management of raised intracranial pressure with neurosurgical and ICU staff</p> <p>be able to perform brainstem death function tests</p>
Acute headache		<p>be able to formulate a diagnosis of acute onset (single episode) headache</p> <p>be able to lead investigation of a child with acute headache</p> <p>recognise acute headache due to raised intracranial pressure and be able to investigate and manage appropriately in conjunction with specialists from other disciplines as appropriate</p>
Acute onset focal neurological signs	<p>know the investigation for causes of acute ischaemic or haemorrhagic stroke</p> <p>know the risk factors for stroke recurrence</p> <p>know the indications for anticoagulation in acute cerebrovascular disease</p>	<p>be able to locate the site of an acute neurological event by examination findings</p> <p>know and be able to interpret neuroradiological findings in the light of this knowledge</p> <p>be able to formulate a differential diagnosis for the cause of acute onset focal neurological signs based on history and other clinical data</p>

Acute presentations cont.

The patient presents with:	Knowledge and understanding	Skills
Acute onset focal neurological signs		be able to interpret imaging data (with neuro-radiology colleagues) to formulate cause of acute neurological event
Ataxia (see also outpatient presentations)	know the differential diagnosis of acute and chronic, progressive and non-progressive ataxia	be able to distinguish cerebellar, sensory and mixed ataxias be able to investigate acute onset ataxia
Abnormal movements	know the differential diagnosis of acute and chronic, progressive and non-progressive movement disorders know the symptomatic drug treatments for chorea, dystonia and myoclonus understand the need for cardiac assessment in Sydenham's chorea	be able to differentiate accurately movement disorder phenotypes including myoclonus, chorea and dystonia
Acute confusional state	know the differential diagnosis of acute confusional states	be able to differentiate between an acute confusional state and reduced consciousness and psychosis
Acute weakness	know the therapies for severe acute and chronic inflammatory demyelinating polyneuropathy (AIDP and CIDP) know the principles of supportive and rehabilitative care with particular reference to paraplegia and peripheral weakness and during ICU care	be able to distinguish neuropathic and myopathic causes of acute weakness be able to distinguish peripheral and cord causes of acute onset weakness including the recognition of acute paraplegia recognise the clinical features of AIDP and CIDP be able to assess the adequacy of bulbar and respiratory function be able to manage the autonomic complications of acute inflammatory demyelinating polyneuropathy

Acute presentations cont.

The patient presents with:	Knowledge and understanding	Skills
Meningism and altered consciousness	<p>know the important infectious causes of meningitis and encephalitis in different clinical settings including neonates and the immunocompromised host</p> <p>know the considerations in relation to antibiotic selection and steroid use</p> <p>know the clinical and radiological features of post-infectious processes, for example acute disseminated encephalo-myelitis</p>	<p>be able to recognise common complications of CNS infection including abscess and subdural collection</p>
Trauma to central and peripheral nervous system (see also Acute Encephalopathy above)	<p>know the typical patterns of recovery of awareness from acquired brain injury</p> <p>understand principles of goal-oriented interdisciplinary team working</p> <p>know the medical complications seen in the early phase of recovery after acquired brain injury</p>	<p>recognise peripheral neurological trauma to brachial and lumbar plexus alone and in combination with CNS trauma</p> <p>be able to recognise low level states of consciousness</p> <p>be able to work with the multi-disciplinary team (MDT) to characterise accurately low-awareness states</p> <p>be able to work effectively with the multi-disciplinary team to manage early postural and other complications of acquired brain injury</p> <p>be able to work with educational and other agencies in longer term advocacy for children after acquired brain injury</p>
Eye movement abnormalities and visual field defects	<p>know the localising value of eye movement abnormalities and visual field defects</p>	<p>be able to recognise and distinguish paralytic and non-paralytic squint, oculomotor apraxia, opsoclonus and nystagmus</p> <p>be able to investigate causes of abnormal eye movements and visual field defects appropriately</p>

Acute presentations cont.

The patient presents with:	Knowledge and understanding	Skills
Eye movement abnormalities and visual field defects		be able to distinguish supra-nuclear, cranial nerve, and mechanical causes of restricted eye movement
Cranial nerve signs		be able to formulate a differential diagnosis for a child presenting with cranial nerve signs
Illness in a child with complex disabilities	<p>know the approaches to symptomatic and palliative management of severe spasticity and dystonia, and of respiratory symptoms in a child with complex disabilities</p> <p>know the issues relating to the use of intensive care for children with complex disabilities</p>	<p>be able to initiate treatment for symptomatic and palliative management of severe spasticity and dystonia in child with complex disability</p> <p>be able to discuss with family and professional colleagues issues relating to the use of intensive care for children with complex disabilities</p>
Neural tube defects and other congenital anomalies	<p>know about common associated features of neural tube defects and their management (including hydrocephalus, Chiari malformations)</p> <p>know about sphincter management in neural tube defects</p>	be able to advise on likely function and levels of disability based on level of defect and examination findings

Community and Outpatient presentations

The patient presents with:	Knowledge and understanding	Skills
Headache	<p>know the investigation and management options for idiopathic intracranial hypertension (“pseudotumour cerebri”)</p> <p>know the approaches (including psychological) to the management of chronic daily headache</p>	<p>be able to recognise fundoscopic signs of raised intracranial pressure (including venous pulsation)</p> <p>be able to recognise headache caused by chronic analgesic use</p> <p>be able to formulate a clinical diagnosis of headache due to raised intracranial pressure</p> <p>be able to make a clinical diagnosis of common and classic migraine, tension and mixed tension-migraine headaches</p>
Epilepsy	<p>know the interactions between epilepsy and its treatment and other impairments in children with epilepsy and complex neurodisability (“epilepsy plus”)</p>	<p>be able to formulate a syndromic diagnosis of epilepsy</p> <p>be able to advise parents about education and safety including the prevention of accidental and sudden unexpected death</p> <p>be able to work effectively with educational, mental health and other services to mitigate behavioural, cognitive and social consequences of severe epilepsy (“axis 5”)</p>
Neuro-developmental regression	<p>know the presentations, differential diagnosis and investigation of common neurodegenerative conditions, including metabolic, mitochondrial and neurotransmitter disorders</p>	<p>be able to recognise regression of developmental skills</p> <p>be able to demonstrate a systematic and logical approach to the investigation of neuro-developmental regression guided by age, ethnicity and other clinical features</p>
Isolated motor delay	<p>know the common presentations, investigations and differential diagnoses of peripheral neuromuscular disease</p> <p>know about seating, splinting, aid and appliance issues in relation to neuromuscular disease</p>	<p>recognise early presentation of muscular dystrophy</p> <p>be able to manage postural, cardiac and respiratory complications of common neuromuscular diseases</p>

Community and Outpatient presentations cont.

The patient presents with:	Knowledge and understanding	Skills
Isolated language delay	<p>be familiar with instruments and techniques used by speech/language therapists in the assessment of developmental language delay</p> <p>know the risk factors for sensorineural hearing impairment and principles of hearing testing at various ages</p> <p>know about the particular considerations relevant to acquired aphasia compared to developmental language delay</p>	<p>be able to describe the nature of language delay and distinguish expressive from receptive disorders, and identify language delay as part of pervasive developmental delay</p> <p>be able to distinguish simple phonological delay from more significant disorders</p>
Pervasive developmental delay	<p>be familiar with diagnostic/assessment instruments for autistic spectrum disorders</p> <p>know about relationships between pervasive developmental disorders and epilepsy including Landau-Kleffner syndrome</p>	<p>be able to investigate selectively and appropriately a child with autistic spectrum disorder for primary neurological causes</p>
Global developmental delay	<p>know the indications for radiological, simple and complex genetic and other investigations of the child with global developmental delay</p> <p>know the causes, types and definitions of cerebral palsy</p> <p>know about common neurogenetic syndromes</p> <p>know about the approaches to the management of posture and feeding</p> <p>know about the means of assessing and augmenting communicative ability in children with multiple disabilities, including recognition of low-level states in the context of acquired brain injury</p>	<p>be able to manage common medical complications in children with chronic disability</p>

Community and Outpatient presentations cont.

The patient presents with:	Knowledge and understanding	Skills
School failure	<p>know the likely causes of emerging educational difficulty including unrecognised prior learning difficulties, prior acquired brain injury, unrecognised medical conditions</p> <p>be aware of the role of neuropsychological assessment</p>	have developed a systematic approach to the assessment of a child with school failure
Ataxia (see also acute presentations)		be able to investigate chronic, and chronic progressive ataxia
Floppy infant	<p>know the genetic and electrophysiological investigation of spinal muscular atrophies, congenital muscular and myotonic dystrophies</p>	<p>be able to distinguish central hypotonia from hypotonia associated with weakness of peripheral cause</p> <p>be able to initiate an appropriate investigation plan for a child with central hypotonia (including metabolic, genetic and radiological investigations)</p>
Gait abnormalities	<p>know the indications for gait analysis</p>	be able to describe the neurological basis of a gait abnormality and investigate appropriately
Abnormal head size and shape		<p>be able to distinguish postural plagiocephaly from craniosynostosis</p> <p>recognise clinical and radiological features of decompensated hydrocephalus</p> <p>be familiar with neurosurgical approaches to hydrocephalus and relative indications</p> <p>recognise shunt infection and obstruction</p>
Behaviour and conduct disorders	<p>know the the potential contribution of unrecognised learning, attentional or medical difficulties to behaviour and conduct disorders</p>	be able to assess and refer appropriately for neuropsychological or other investigation

Community and Outpatient presentations cont.

The patient presents with:	Knowledge and understanding	Skills
Chronic ataxia	know about medical complications of ataxia telangectasia, Friedreich ataxia and other conditions	
Movement disorders	know the differential diagnosis associated with dystonic, myoclonic and other movement disorders by age group be familiar with the neuroradiological findings of common movement disorders know about the investigation and management of Wilson disease and DOPA-responsive dystonia	be able to describe the phenotype of abnormal movements be able to suggest appropriate symptomatic treatments for extrapyramidal and other movement disorders
Medically unexplained symptoms	be able to help families recognise the impairment resulting from medically unexplained symptoms and help them engage with CAMHS services for a range of treatment inputs	be able to recognise non-organic symptoms including apparent sensory and motor symptoms and seizures be able to introduce the child and family to the concept of medically unexplained symptoms in a manner appropriate to the individual case that promotes recovery
Sleep disorders	know the the differential diagnosis of disorders of sleep in childhood know the investigative techniques suitable for the evaluation of sleep disorders in childhood	be able to evaluate a history of disordered sleep and reach an appropriate diagnosis be able to advise and/or inform the family of the nature of sleep disorder and initiate treatment if necessary
Neuro-cutaneous syndromes	be familiar with recommended monitoring protocols for the prevention of common complications of neurocutaneous syndromes	
Chronic sensory symptoms including chronic pain	know the the differential diagnosis of chronic sensory symptoms and chronic pain	be able to investigate and manage chronic pain and chronic sensory symptoms appropriately

Child Psychiatry (Additional competences required of all paediatric neurologists)

By the end of Level 3 Training in Paediatric Neurology, trainees will:

- demonstrate a high level of skill in engaging with children, adolescents and parents, including “hard to reach” children and families
- be able to complete a mental state examination and to assess the mental health problems of a child or young person
- demonstrate developing skills in reaching a psychiatric formulation
- demonstrate developing skills in judging the severity of emotional and behavioural difficulties and their impact on children and families
- demonstrate an understanding of the ways in which emotional, behavioural and developmental problems can result from physical disorders and demonstrate appropriate thresholds for involvement of CAMHS professionals for advice or direct assessment
- demonstrate an understanding of the roles and potential contributions of members of the multidisciplinary CAMHS team

- be familiar with psycho-pharmacology for child and adolescent mental health problems.
- be familiar with the theoretical bases, principles and indications of the major models of psychological treatment
- know the use and limitations of questionnaire measures in child and adolescent mental health, including disorder-specific and more global functioning measures

- be able to assess patients presenting with a range of psychiatric symptoms and complete a mental state examination

- be able to assess and manage acute and chronic presentations of mental health conditions

- know when to seek advice from the Child and Adolescent Mental Health Services (CAMHS) in a timely fashion
- know the epidemiology, aetiology and co-morbidities of a range of child psychiatric conditions
- know the indications for a range of therapies and medication for childhood psychiatric conditions
- know about resources for families and professionals relevant to children with a range of psychiatric disorders

Acute agitation or confusion

- know the drugs that can cause behavioural or psychiatric symptoms
- be able to distinguish acute confusional state from other forms of behavioural disturbance
- be able to assess orientation and complete a mental state examination

Psychotic disorders

- know the risk factors for psychotic illnesses arriving *de novo* or as part of other organic illnesses
- be able to assess possible psychotic symptoms

Communication and socialisation disorders

- act as an advocate for the educational needs for children with autistic spectrum disorders (ASDs)

Major affective disorder

- know the indications for psychotropic medications
- know the indications for psychological therapy

Attention deficit disorder

- know the indications for and potential complications of stimulant therapy

Seizures

- know the psychotropic effects and behavioural side effects of anticonvulsant medication
- be able to draw up a formulation that incorporates the epileptic, organic and psychosocial factors that underlie problem behaviours encountered in children with complex epilepsy
- be able to draw up a formulation of the predisposing, precipitating and perpetuating factors in a child with non-epileptic attack disorder (NEAD; “pseudo-seizures”)

Medically unexplained physical symptoms

- know how to evaluate presentations of a medically unexplained physical symptoms, the major categories and their associations
- be able to communicate the psychiatric formulation of the child’s illness to the child, parents, ward staff or community paediatric team
- be able to engage families with appropriate interventions

Adult Neurology

By the end of Level 3 Training in Paediatric Neurology, trainees will:

- be able to perform and interpret a full clinical examination of an adult neurological patient
- know about services for adults with physical and learning difficulties and chronic neurological diseases
- know about the processes of rehabilitative and other care for adults with long-term disabilities and be able to compare and contrast these approaches with those for children

The patient presents with:	Knowledge and understanding	Skills
Acute stroke in adults	know the differential diagnosis of stroke, including venous infarction know the role and limitations of imaging investigations in the diagnosis of acute stroke know the aetiology and investigation of acute stroke in young and older adults understand secondary prevention of stroke understand the principles of anti-platelet, anti-coagulant therapy in Transient ischaemic attack (TIA)/ acute stroke know the indications for thrombolytic treatment of acute stroke in adults	be able to diagnose the important anterior and posterior circulation TIA and stroke syndromes be able to recognise basic anatomical features of normal digital four-vessel and MR angiogram studies

The patient presents with:	Knowledge and understanding	Skills
Seizures	<p>know the differential diagnosis of paroxysmal episodes in adults including syncope and non-epileptic attack disorder</p> <p>know and understand the long-term natural history (into adulthood) of epilepsy syndromes presenting in childhood</p> <p>know the aetiologies of seizure disorders presenting in adulthood</p>	<p>be able to diagnose the common partial (simple and complex) and generalised epilepsy syndromes</p> <p>be able to initiate appropriate investigations and treatment of epilepsy in adults, including status epilepticus</p> <p>be able to advise on seizure treatment and anticonvulsant selection in pregnancy and for women of child-bearing potential</p>
Headache	<p>know about headache/facial pain syndromes</p>	
Demyelinating disease	<p>know the differential diagnosis of Multiple Sclerosis (MS), including Acute disseminated encephalomyelitis (ADEM)</p> <p>know the role of steroids, symptomatic therapies and disease modifying therapies</p>	<p>be able to diagnose relapsing and remitting multiple sclerosis</p> <p>recognise typical magnetic resonance (MR) appearances of multiple sclerosis and differential diagnoses</p> <p>be able to initiate appropriate steroid treatment in an acute relapse of MS</p>
Weakness	<p>know the use of cholinesterase inhibitors, thymectomy and immunological treatment of myasthenia gravis</p>	<p>be able to diagnose and manage acute and chronic inflammatory demyelinating polyneuropathies (AIDP, CIDP)</p> <p>be able to diagnose and treat inherited and acquired muscle disease</p> <p>be able to distinguish confidently between upper motor neurone (UMN) and lower motor neurone (LMN) patterns of limb weakness</p> <p>recognise the presence and significance of mixed UMN and LMN signs</p> <p>recognise apparent weakness due to ataxia</p>

The patient presents with:	Knowledge and understanding	Skills
Weakness		<p>recognise apparent weakness due to ataxia</p> <p>recognise and localise lesions to the cerebral hemispheres, brainstem or spinal cord (including cord compression and syrinx)</p> <p>recognise and localise disorders of root/plexus and peripheral nerves (including entrapment neuropathies)</p> <p>be able to plan the appropriate investigation of a patient presenting with weakness</p>
Movement disorder	<p>know the pharmacological treatment of Parkinson's disease and other movement disorders</p>	<p>be able to investigate movement disorders</p> <p>be able to identify correctly dystonic, myoclonic and choreiform movement disorder phenotypes</p> <p>recognise the clinical features of idiopathic Parkinson, Juvenile Huntingdon and Wilson diseases</p>
Cognitive deficits	<p>know the major aetiologies and presentations of dementia</p> <p>be aware of assessment instruments (for example Addenbrooke's Cognitive Examination) and of the indications for referral for formal neuropsychometric assessment</p> <p>know and understand the localising value of focal cognitive deficits</p>	<p>be able to assess a person reporting cognitive difficulties based on clinical assessment of the patient and informant interview</p> <p>be able to perform a qualitative and quantitative mini mental state examination. MMSE</p> <p>recognise and assess the contribution of affective states (especially depression) to cognitive impairment</p>
Neurodegenerative disease	<p>know the differential diagnosis of psychomotor regression presenting in adolescence</p>	

The patient presents with:	Knowledge and understanding	Skills
Paraneoplastic disease	know and understand adult paraneoplastic syndromes including ataxias, neuropathies, ganglionopathies, and myopathies	
Neurometabolic disease		be able to recognise adult presentations of mitochondrial and metabolic disease

Section 5

Practical Procedures and Investigations

By the end of Level 3 Training, trainees will:

- know the appropriate indications for practical procedures and investigations
- know the contraindications and complications of procedures
- know the local and national guidelines for obtaining informed consent
- know the local and national guidelines for undertaking investigations or procedures
- know the local guidelines for providing sedation and pain relief for practical procedures
- know the relevant anatomical markers for invasive procedures
- know and practise scrupulous aseptic techniques
- be aware of safety issues for patients and staff in relation to investigations of body fluids and radiation
- understand the importance of post-mortem investigations
- know the national and local guidance for obtaining consent for post-mortem
- be able to interpret results of investigations requested and respond appropriately
- be able to record results and document procedures legibly and accurately
- be able to give appropriate medical information when requesting investigations
- know that results should be requested clearly and retrieved promptly
- understand common age-appropriate normal ranges or appearances
- be able to use all equipment required to undertake common procedures and investigations
- be able to explain the investigation results to parents and/or the child
- be aware of the factors that are likely to influence the anxiety of the child, parent and doctor and know how to enlist effectively the help of play-leaders, nursing staff and more senior paediatric staff when necessary
- be receptive to feedback from patients and parents/carers on the effects of medication/treatment
- know about the role of complex investigations eg CT and MRI scans and their diagnostic potential and complications

- recognise when the results of commonly-used radiological investigations are abnormal
- have developed confidence in independent performance of practical procedures
- be able to supervise and teach others
- recognise complications of procedures and be able to respond appropriately
- understand and follow the local guidelines for the prevention and management of needle-stick injury
- be able to recognise the importance of universal precautions as well as the disposal of sharps within the department

- have experience of speaking to parents when complications have occurred
- know about processes for critical incident reporting
- obtain informed consent appropriately
- supervise handover of results that still need to be obtained at the end of shifts

Diagnostic Procedures

By the end of Level 3 Training, trainees will be able to perform the following diagnostic procedures independently:

- collection of blood from central lines
- umbilical artery and venous cannulation and sampling
- peripheral arterial cannulation
- venesection
- capillary blood sampling
- suprapubic aspiration of urine
- urethral catheterisation
- routine testing of urine
- perform basic lung function tests
- electrocardiogram
- lumbar puncture
- non-invasive blood pressure measurement

Therapeutic Procedures

By the end of Level 3 Training, trainees will be able to perform the following therapeutic procedures independently:

- administer intradermal, subcutaneous, intramuscular, intravenous injections
- percutaneous long-line insertion
- bag, valve and mask ventilation
- needle thoracocentesis for pleural effusion or pneumothorax
- tracheal intubation
- intubation of newborn infants of most gestations
- administration of surfactant
- external chest compression
- insertion of intraosseous needle

Pharmacology and Therapeutics

By the end of Level 3 Training, trainees will:

- know and understand the pharmacological basis for treatments
- know the approved indications and justification for prescribing drugs in common paediatric problems
- know the pharmacokinetics and pharmacodynamics of commonly prescribed drugs
- be able to calculate drugs accurately according to specific dose for weight, or age/weight range or on a specific dose/surface area basis
- know the risks of prescribing in the child-bearing years, in pregnancy and in breast-feeding mothers
- know about the roles of the regulatory agencies involved in drug use, monitoring and licensing (for example the National Institute of Clinical Excellence, the Committee on Safety of Medicines, the Medicines and Healthcare products Regulatory Agency and Hospital Formulary Committees)

- be able to find out information necessary for safe prescribing through use of paediatric formularies and pharmacy liaison
- know about drug interactions of commonly used drugs
- know about procedures for obtaining consent in children and young people for the administration of drugs
- be able to use the local and national guidelines for the relief of pain in children
- know and follow local policies for intrathecal cytotoxic therapy
- respond appropriately to errors of prescription or administration and be able to talk to parents about this

- be able to prescribe safely and supervise prescription for the newborn, and for children of all ages
- know about the licensing of medicines for paediatric patients and unlicensed and off-label use and the implications of extemporaneous products
- know how to explain relevant potential adverse side-effects
- be able to advise and supervise safe prescription of intravenous fluids to medical and surgical patients
- be able to prescribe in a manner that enhances adherence and provide information and explanation that enhances concordance

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