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Introduction

This curriculum is for doctors in training in Paediatrics, the teachers and stakeholders with an interest in postgraduate medical education.

The curriculum gives the doctor in training and their teachers' guidance about the areas that need to be covered. It gives a clear picture of what has to be achieved by the end of each stage of training.

The curriculum can be used to help identify areas of practice that need to be improved and those in which the trainee has confidence.

The competences that are gained during phase A training form the basis for progression into phase B training and be successful being a Paediatrician. The way in which the statements are written is intended to reflect this. The framework of competences reflects a spiral curriculum in that it asks the trainee to demonstrate continual development as their training progresses i.e. basic competences become more complex and sophisticated as the Paediatrician in training works towards expertise.

How to use the curriculum

Trainee

First of all ensure you have read the Introduction to understand the purpose and key principles of Paediatric Training.

You should then read the sections on Learning and Support for Learning which will enable to understand the system of workplace based learning and other education opportunities that will be made available to you.

Then you should browse the competencies sections. The headings (assessment standards) are applied to a group of competencies will give you an idea of what you should be aiming to achieve throughout each level of training. The curriculum is separated out into phase A & phase B competencies. However it is important you are aware of progression and achievement of higher level competencies.

The curriculum has the following structure

- 1) Generic competences and generic clinical competences (e.g. history taking, consulting, clinical management, communication skills, teaching, management, law and ethics)
- 2) Specialty-specific competences (e.g. cardiology, endocrinology etc.)

There will be a induction at the start of the program which further introduces how the program will be delivered and assessed by the education provider. They will also be allocated a supervisor who will be responsible for their educational and other help.

Within paediatrics all consultants will have a role as trainer and the majority will have a role both as educational supervisor and clinical supervisor. All trainers will be required to have clinical credibility and the ability to teach within their chosen subject and demonstrate both an interest in their specialty and in trainee education.

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 behavior within their specialty and within the medical profession as a whole. Central to their works is the principle that all decisions should be made in the best interests of the child or young person in their care.

Objectives:

At the end of the course, the candidate should have the following capabilities and skills:

- 1) Possess sound knowledge in the principles of Paediatrics.
- 2) Perform thoroughly and suitable oriented history and physical examination.
- 3) Formulate a reasonable and comprehensive differential diagnosis, recognize and manage common disorders in Paediatrics as well as many of the rare ones, especially those that are amenable to treatment.

- 4) Select relevant investigations logically and conservatively and interpret the results accurately.
- 5) Recognize and manage emergency situations appropriately.
- 6) Possess good skills in various diagnostic and therapeutic procedures in Paediatrics.
- 7) Keep orderly and informative medical records.
- 8) Be able to provide appropriate preventive care and anticipatory guidance and act as a child advocate.
- 9) Communicate with patients, relatives and colleagues properly.
- 10) Advise colleagues from other specialties in problems related to Paediatrics.
- 11) Educate and update himself/herself and others in his/her field.
- 12) Possess high moral and ethical standards.

Learning

Learning will take place in a variety of settings with a range of approaches:

- 1) Acute settings
- 2) Out patient Clinics
- 3) Community setting
- 4) Handover
- 5) Ward rounds
- 6) Multi-disciplinary meetings
- 7) Audits and research
- 8) Seminars
- 9) Lectures
- 10) External training courses
- 11) Reflective practice
- 12) Self-directed learning

Trainees are encouraged to utilize the opportunities that arise at anytime within the workplace, as well as managing their study

leave to work towards the achievement of their personal development plan.

Support for Learning

During the Local Education Providers' induction the trainee will be allocated an education supervisor and informed of the local processes for learning support.

The trainee has responsibility as an adult learner to set their own individual learning objectives for each training post/training program with the support of their Educational Supervisor. The objectives should then be reviewed at regular intervals utilizing the e-portfolio and by demonstrating improvement through the use of work-place based assessments.

There will be deanery processes in place to support any doctor in training who may need additional support. Examples where additional support will suggested may include (and not limited too)

- 1) Doctors who have a learning need
- 2) A requirement for reasonable adjustment for the achievement of the competencies
- 3) Involvement in a serious incident
- 4) Disengagement with the educational process.

Focus of Phase-A Training In Paediatrics

This training program will focus on developing core skills and knowledge, introducing each of the disciplines and providing a foundation for consolidation and further study within Phase-B training.

1. The aim of the Phase-A training program is to produce Residents capable of entering into the specialty training program
2. Such Residents are differentiated from others by:
 - High level of medical basic science knowledge
 - Generic skill development

3. They will have:
 - The ability to diagnose and manage all common acute medical presentations and refer as appropriate
 - Skills, including communication and working as a team, in management of complex and chronic medical conditions
 - A good 'breadth of competence' and some 'depth of competence' across the medical specialties

Expected Outcomes At The Completion Of Phase-A

At the completion of Phase-A training, it is expected that the Residents will have:

1. Built on the knowledge and skills acquired during undergraduate level
2. Gained experience within and had the opportunity to develop and demonstrate competency in a comprehensive range of 'core' generic and discipline specific knowledge, clinical skills and attitudes
3. Had a broad-based exposure to and clinical experience within, each of the discipline areas that will be further developed and focused during the subsequent Phase-B training program
4. Acquired a breadth of competence that will be further developed into a depth of competence within their Part-B training program
5. Rotated through a series of training opportunities
6. Gained a background knowledge and understanding of the full range of discipline areas which will facilitate cross-referral/multi-specialty team work etc
7. Demonstrated the ability to communicate effectively and sensitively with patients and their families, colleagues and other allied health professionals

8. Gained an initial understanding of and be able to acknowledge the importance of the various socioeconomic factors that contribute to illness and vulnerability
9. Acquired an awareness of and sensitivity to the special needs of patients from culturally and linguistically diverse backgrounds
10. Acquired the skills to be able to work within and fully utilize multidisciplinary team-based approaches to the assessment, management and care of their patients
11. Implemented their future career planning and decision making processes based on a more informed level of knowledge and understanding.

2. General competences

The learning objectives in this section reflect the general practice of a paediatrician. By the end of phase A Training, trainees will:

1. Understand the duties and responsibilities of a paediatrician in the safeguarding of babies, children and young people
2. Understand the duties and responsibilities of a paediatrician to support and enable parents and carer to be effective in caring for their children
3. Know and understand the scientific base relevant to clinical practice in paediatrics
4. Know the aetiology and patho-physiology of common and serious childhood conditions
5. Understand the promotion of health and the management of ill-health in babies, children and adolescents
6. Understand the specific health issues, diseases and disorders related to these stages of growth and development
7. Recognize the mental health components of all paediatric illness
8. Understand the factors that affect a child's level of anxiety about illness, treatment or examination

9. Recognize the impact on parents and the rest of the family of acute or chronic illness, hospitalization or the death of a child
10. Know about the agencies, both statutory and voluntary that can provide support to children and their families in coping with their health problems
11. Understand the limitations of their competence and know where and when to ask for help, support or supervision.

Skills

1. Have understand the need for and begun to develop effective communication skills specific to their work with babies, children, young people and their families.
2. Be able to take a history accurately and sensitively that routinely includes biological, psychological, educational and social factors in the child and the family.
3. Be able to examine children and young people accurately and sensitively in appropriate settings.
4. Be able to assess symptoms and signs accurately.
5. Recognize presentations of common disorders
6. Recognize case histories which suggest serious or unusual pathology
7. Recognize the diseases and host characteristics which make certain presentations life-threatening
8. Be able to assess the developmental level of children and young people
9. Be able to assess the mental state of children and young people
10. Be able to formulate and appropriate differential diagnosis
11. Be able to assess and initiate management of patients appropriately
12. Be able to initiate appropriate investigations
13. Begin to develop skills in the management of emotionally complex family situations

14. Develop expertise in practical procedures specifically related to the clinical care of small babies and children and young people
15. Begin to develop analytic, clinical reasoning skills
16. Have begun to develop the ability to approach new situations which require good clinical judgment with an analytic and informed approach
17. Be able to use guidelines appropriately
18. Have strong communication and interpersonal skills to enable them to work effectively with patients and their families and colleagues ion multi-professional and multi-disciplinary teams
19. Be able to make reliable and accurate mathematical calculations required in clinical practice, eg, drug and fluid prescriptions.
20. Be able to prescribe safely and write legible prescriptions, using appropriate medications incorrect doses
21. Keep accurate, legible and relevant medical records
22. Show effective time management skills in their professional roles
23. Be able to use information technology effectively in clinical practice and audit
24. Know how to access clinical databases and where to go to find web-based information

Values and attitudes

1. Understand and follow the principle that all decisions are to be made in the best interests of the child or young person in their care
2. Understand the need for compassion and respect for children young people and their families
3. Understand the responsibility of paediatricians to consider all aspects of a child's well-being including biological, psychological and social factors
4. Be aware of and sensitive to the way in which cultural and religious beliefs affect approaches to treatment and care and respond respectfully to the expressed needs of patient and carer

5. 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 where to find legal and ethical guidelines to support their work
6. Begin to develop strategies to help children, young people and their families to follow these plans
7. Work with colleagues in multi-disciplinary teams to ensure consistency and continuity and a holistic approach to the treatment and care of children and young people
8. Develop a commitment to a policy of advocacy for a health lifestyle in children and young people and for the protection of their rights
9. Be aware of the ways in which their personal experiences, values and attitudes might affect their professional practice and know when to refer a case to another doctor
10. Understand the complexity of issues and conflicts in professional practice and have begun to develop strategies to respond (See Good Medical Practice)

Teaching and research

1. Begin to develop a sound understanding and a commitment to the principles and practice of effective teaching and learning in clinical contexts
2. Have begun to develop a reflective approach to their practice and a commitment to learning and improving their practice through reflection
3. Begin to develop critical appraisal skills and to apply these to their reading of the literature, including systematic reviews, reviews of their own teaching and the teaching of others
4. Show honesty and integrity when contributing to peer reviews of colleagues teaching or research
5. Know how clinical guidelines are produced and how they might be used appropriately within the context of clinical practice

6. Know how Cochrane systematic reviews are developed and the principles of meta-analysis

Leadership and management

1. Understand the need for open and non-discriminatory professional working relationships with colleagues
2. Demonstrate the ability to take on differing and complementary roles within the different communities of Practice within which they work, in hospitals, general practice and in the community
3. Be able to prioritise tasks in personal and professional contexts, for example, in medical emergencies
4. Ensure effective hand-over procedures and clear communications with colleagues to ensure the continuing good medical care of patients
5. Ensure effective discharge procedures to community and primary care services

Personal Commitment to Professional Standards

1. Ensure that they are up-to-date in their practice and endeavor to promote evidence-based medicine where possible
2. Understand how national and local policy initiatives impact on medical practice and social health and well-being
3. Be familiar with and follow local and national clinical guidelines and protocols in paediatric practice
4. Know the principles of the UN Convention on the Rights of the Child, apply these in their own practice and work for the protection of these rights
5. Demonstrate an understanding of and respect for legal and ethical issues relating to consent and confidentiality in paediatrics
6. Be aware of religious and cultural beliefs that parents might hold about the treatment of their children, to know how to

- respond in these cases, when to seek support and where to find legal and ethical guidelines to support their practice
7. Show a commitment to their continuing professional practice and to respond positively to requests for enquiries or critical incident reports and to outcomes of reviews, assessments and appraisals of their performance
 8. Participate in clinical governance activities, risk management and audit
 9. Understand the need for honesty and the procedures to follow where there is concern about the professional practice of a colleague which might be putting the health of patients at risk
 10. Take responsibility for their own obligations for health, safety and welfare issues
 11. Demonstrate a commitment to the highest standards of care and ethical and professional behavior within their specialty and within the medical profession as a whole.

Communication skills in paediatrics

1. Have begun to develop skills and strategies to manage consultations effectively with babies, young children, adolescents and their families
2. Have begun to develop skills to involve both the child and parents or carer when both are present in consultations
3. Be able to demonstrate courtesy to families, colleagues and members of multi-disciplinary team at all times
4. Understand the need to conduct a consultation in such a way that a child or young person and their family feel able to talk about difficult or emotional issues
5. Have experience of how to communicate a diagnosis and prognosis effectively to children, where appropriate, young people and their families
6. Show patience and sensitivity in their communications with children and their families and a particular ability to explore their individual perspectives of a problem

7. Have begun to develop active listening skills with children and young people and understood the need to respect their views in accordance with their age and maturity and to respond appropriately where, for example, a child is felt to be vulnerable
8. Have understood the need to respond to babies, disabled children or young people who may not be able to express themselves verbally and who might be in pain or distress
9. Have begun to develop appropriate responses and empathy for children, young people and their families experiencing difficulty and distress, for example, in the case of a child who is dying
10. Have understood the need for care full record-keeping and report-writing and begun to develop skills for effective written communications with patients and their families, with colleagues and with other professional organizations
11. Understand the limitations of their competence at this stage of their training and that they should seek help in managing sensitive and complex situations.

3. General Clinical Competences

Development

1. Understand the variations in relationship between physical, emotional, intellectual and social factors and their influence on development and health
2. Be familiar with the patterns of normal development from birth to adulthood
3. Recognize deviations from normal patterns of development
4. Be able to identify abnormal patterns of development
5. Understand the need for further assessment and investigation and how to access these.
6. Know and understand the principles of screening and monitoring

7. Be able to assess and monitor development using appropriate tools
8. Recognize that child neglect or abuse might affect a child's development
9. Know the causes of neuro-disability, how disability might affect clinical examination and assessment and understand the need for a multi-disciplinary approach to management

Emotional development

1. Know the factors which influence healthy emotional development
2. Understand the emotional impact of illness and hospitalization on children and their families
3. Be able to assess parenting skills and recognize indications of unsatisfactory or unsafe parenting
4. Recognize and know the principles of managing common behavioral problems
5. Understand a child's need for opportunities to play and to learn
6. Understand the emotional dimensions of eating disorders
7. Recognize the need for specialized input in cases of serious emotional distress or mental illness
8. Understand and recognize somatisation disorders
9. Know the factors that influence social development
10. Understand the impact of autistic spectrum disorders on social development

Educational development

1. Know the factors which influence intellectual development
2. understanding the vulnerability of a child with learning disabilities
3. Understand the impact of learning difficulties on social and emotional behavior

4. Known about the process of formal statutory assessment of children with possible special educational needs and other educational strategies to support learning and development

Growth and Nutrition

1. Be able to describe a child's nutritional status in terms of balance, body composition and function
2. Understand the relevance of nutritional requirements for health and sick children
3. Understand the range of factors, biological, psychological and social which influence normal growth and puberty
4. Understand the importance of emotional factors in feeding and nutrition, in particular in non-organic failure to thrive
5. Understand the relationship between nutritional status and disease
6. Be able to monitor growth using appropriate tools
7. Understand the effects of fetal growth restriction on long-term health
8. Understand the effects of obesity on long-term health
9. Know about the principles and methods of dietary supplementation
10. Understand interventional strategies involved in weight reduction
11. Understand the basic physiology of breast-feeding
12. Recognize common breast feeding problems and refer appropriately
13. Be able to advise a mother about the benefits and risks associated with infant feeding
14. Be able to advise a mother about appropriate complementary feeding
15. Be able to identify a family needing nutritional support or advice
16. Recognize cultural and religious issues related to nutrition
17. Understand the effects of malnutrition on clinical outcomes
18. Understand the role of nutritional support team, specialist nurses, dieticians, psychologists, pharmacists, speech and

language therapists in managing feeding and nutrition in paediatrics

Adolescence

1. Understand the variations in relationship between physical, emotional, intellectual and social factors and their influence on adolescent development
2. Understand the different specific and changing health needs of adolescents as inpatients and outpatients
3. Know about normal and abnormal pubertal development
4. Recognize risk-taking behaviors, particularly those which pose a threat to chronic disease management
5. Understand and respond appropriately to episodes of self-harm in adolescents
6. Know about national policies for reduction of teenage pregnancy
7. Know about contraceptive and sexual health issues and where appropriate advice might be sought
8. Be aware of issues relating to gender and sexual identity
9. Understand and follow the principles and legal aspects of consent and confidentiality
10. Know about issues around transition from paediatric to adult care in adolescents with chronic conditions

4. Specialty-specific competences

Behavioral paediatrics

1. Know about normal emotional and behavioral development and how it may affect the child and family at different stages
2. Be able to look at behavior as a form of communication and to take this into account when interviewing, examining and assessing children
3. Have begun to develop an approach to the assessment of behavioral problems
4. Know about the effects of developmental difficulties and physical diseases on behavior and vice versa

5. Know the principles of managing common behavior problems such as temper tantrums sleep problems, the crying baby, oppositional behavior, enuresis and encopresis, school refusal
6. Know about the signs and symptoms that indicate serious conditions such as ADHD, autistic spectrum disorders, depression, psychosis
7. Know about the effects of substance abuse

Cardiology

1. Have the knowledge and skills to be able to assess and initiate management of babies and children presenting with cardiological disorders
2. Know the genetic and environmental factors in the aetiology of congenital heart disease
3. Be able to formulate a differential diagnosis
4. Be able to respond appropriately to cardiac arrest
5. Be able to select and interpret appropriate cardiological investigations and know the indications for echocardiography
6. Understand the life-threatening nature of some of these conditions and when to call for help
7. Know the possible cardiac complications of other system disorders
8. Know when referral for specialist paediatric cardiology assessment for further management appropriate

Acute presentations

The patient presents with:	Knowledge and understanding	skills
Cyanosis	Know the normal fetal circulation and transitional changes after birth Know the anatomy of the common causes of cyanotic heart disease	Be able to differentiate between cardiac and non cardiac causes of cyanosis Recognize when treatment is urgent

Heart Failure, including cardiac conditions which present with shock	Understand the causes of heart failure	Be able to initiate appropriate investigations and treatment
Arrhythmia	Know the causes of arrhythmias	Be able to recognize common dysrhythmias on ECG Be able to initiate emergency treatment in arrhythmias such as tachycardia
Infective Endocarditis	Know when prophylaxis against endocarditis is indicated Know the causes of endocarditis	Be able to advise parents about prophylaxis against endocarditis be able to initiate appropriate investigations and treatment

Outpatient based scenarios

The patient presents with:	Knowledge and understanding	skills
Heart murmur	Know the causes of common heart murmur and the haemodynamic reasons for them	Be able to interpret correctly heart sounds and added sounds Be able to identify an innocent cardiac murmur
Hypertension	Know and understand the causes of hypertension	Be able to measure and interpret correctly blood pressure measurements at different ages Recognize the importance of examining femoral pulses in all children
Palpitations	Know the cardiac and non-cardiac causes of palpitations	Be able to initiate appropriate investigations

Syncope	Know the cardiac causes of syncope	Be able to initiate appropriate investigations including appropriate ECG analysis
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Social and community Paediatrics

- 1 Understand the effects of family composition, socio-economic factors and poverty on child health
- 2 Be aware of the effect of the media on public perception of health care issues
- 3 Be aware of child health exploitation issues including child prostitution, child labor and children in combat
- 4 Be aware of the work of the World Health Organization and UNICEF
- 5 Be aware of the millennium development goals
- 6 Be able to recognize and outline the management of children in need
- 7 Know about the resources that may be available from health and other agencies, including the voluntary sector, to support families in need
- 8 Have some familiarity with the roles of allied health professionals and other agencies in the support of children and families
- 9 Be able to record clearly the results of an examination of a baby, child or adolescent using body charts
- 10 Recognize the importance of noting all observations of the child's demeanor and interactions with parents or carers

Child Public Health

Topic	Knowledge and understanding	skills
Screening and surveillance	Know about screening and surveillance programs	Be able to explain specific screening issues to parents

	Know about conditions currently screened for understand the ethical dilemmas posed by screening	Be able to conduct developmental examinations at different ages
Health promotion	Understand the importance of evidence to support health promotion activities Know the role of health promotion programs, for example, to prevent dental decay, smoking, accidents, obesity, sudden infant death	Be able to advise parents on avoiding risks for children
Public health and epidemiology	Know about population statistics Understand the role of public health doctors in commissioning NHS services Understand good study design	Know the principles of how to conduct population studies Be able to evaluate evidence
Accidents and injuries	Understand the epidemiology of injuries in children and young people Know about the sequelae of injury Know about rehabilitation	Be able to recognize when injury may be non-accidental Be able to recognize and treat accidental ingestion and deliberate self-poisoning Be able advise parents on injury prevention

Dermatology

- 1 Be able to describe accurately any rash
- 2 Have the knowledge and skills to be able to recognize, investigate and manage common skin complaints
- 3 Know about the cutaneous and mucosal manifestations of systemic disease
- 4 Recognize the serious nature of some skin disorders or their associated conditions and know when to ask for help
- 5 Know about chronic skin rashes
- 6 Understand the principles of therapy for skin complaints
- 7 Be aware of the different potencies of topical steroids and of their side effects
- 8 Understand the impact of severe dermatological problems on children
- 9 Know when consultation with other specialties is appropriate

Acute Presentations

The patient presents with:	Knowledge and understanding	skills
Skin failure e.g. toxic epidermal necrolysis, staphylococcal scalded skin syndrome and epidermolysis bullosa	Know the features and management of staphylococcal scalded skin syndrome Be aware of the rarer causes of skin failure	Be able to assess and to start initial treatment promptly Recognize when to consult dermatology and ophthalmology
Skin infections	Know the causal bacteria, features, complications and management of cellulites including periorbital cellulites Know the features and management of infected eczema and eczema herpeticum	Recognize when to consult ophthalmology and ENT specialists Recognize and be able to treat scabies, pediculoses and common viral and fungal skin infections

Cutaneous drug reactions	Be aware of the different patterns of drug reaction and of the common precipitants Know about serious drug reactions e.g. stevens-johnson syndrome	Be able to assess mucosal involvement Recognize when to consult dermatology and ophthalmology specialists
Erythema nodosum	Know the causes of erythema nodosum	Recognize features in the presentation which suggest serious or significant pathology
Erythematous rash and fever	Know the causes of fever and an erythematous rash with or without desquamation Be aware of rare but serious causes e.g. toxic shock syndrome	Be able to recognize Kawasaki Disease and to institute appropriate treatment

Outpatient presentations

The patient presents with:	Knowledge and understanding	skills
Eczema and seborrheic dermatitis	Know the common treatments for eczema and the reasons for treatment failure	Be able to manage mild eczema and seborrheic dermatitis Be able to advise parents about these conditions

Diabetes and Endocrinology

- 1 Have the knowledge and skills to be able to assess and initiate management of patients presenting with diabetes, growth or endocrine presentations in inpatient and outpatient setting
- 2 Be able to measure children accurately and to assess their growth using appropriate growth charts and taking into account parental stature and pubertal status
- 3 Be able to assess accurately pubertal stages of development

- 4 Know about changes to insulin and steroid therapy in children with diabetes and hypoadrenalism during acute illness or perioperatively
- 5 Understand the endocrine complications of other diseases

Acute presentations

The patient presents with:	Knowledge and understanding	skills
A child presents with diabetes mellitus	Know the pathophysiology of diabetes mellitus Recognize the early features of this presentation Know the principles of diabetes management including commonly used insulin regimens Know about the long term complications of diabetes and about ways to reduce the risks of these occurring	Be able to explain this condition to parents Be able to liaise with children's diabetes team Be able to give basic advice about diet and exercise
Diabetic Ketoacidosis	Understand the pathophysiology of diabetic ketoacidosis Be aware of potential complications including cerebral oedema Know how to treat and monitor progress	Be able to recognize the clinical features of this condition Be able to lead the team when initiating resuscitation and early treatment Be able to manage ongoing treatment safely with guidance
Hypoglycaemia	Know the causes, complications and treatment in the neonatal period and beyond	Be able to take relevant investigations required for the confirmation of cause Be able to assess whether any change to insulin

	Know that blood glucose is an urgent investigation in patients with impaired conscious level Be aware of the clinical features which would suggest hypopituitarism or adrenal insufficiency	treatment is needed to prevent recurrence in diabetic patients Recognize the need to inform the diabetes team of serious hypoglycaemia in their patients
Neonatal thyrotoxicosis	Know the cause of this condition and its natural history	Recognize this presentation and the need for urgent treatment
Ambiguous genitalia	Be aware of the causes of this presentation Understand the features of congenital adrenal hyperplasia and its early management	Recognize the extreme sensitivity of this presentation and of the need to seek urgent help from senior colleagues with regards to management and counseling parents

Outpatient presentations

The patient presents with:	Knowledge and understanding	skills
Short and tall stature abnormal rates of growth	Know the causes of short stature or slow growth and the characteristics of these conditions Know when short stature needs to be investigated Understand and know the rationale behind the baseline and subsequent investigations be aware of treatments that are available for	Be able to explain to patients and parents non serious causes of short stature eg genetic short stature, constitutional delay and hypothyroidism. Recognize the need to rule out turner's syndrome as a cause of short stature in girls

	pathological short stature Know about the causes of tall stature	
Delayed and early puberty	Know the causes of early and late puberty	Recognize when the cause may be pathological rather than physiological
Goiter and thyroid disorders	Know the causes of congenital and acquired hypothyroidism Know about the national screening program for hypothyroidism Understand the need for precise treatment and monitoring during infancy and early childhood	Be able to assess thyroid status
Polyuria and polydipsia	Know the causes of this presentation including diabetes mellitus and insipidus	Be able to select patients who may require investigation Be able to advise parents about habit drinking
Obesity	Understand the causes of obesity Understand the long term complications Understand interventional strategies that are involved in weight reduction Be aware of the presentation of type 2 diabetes during childhood	Recognize features in the presentation which suggest serious pathology Be able to explain the long term complications to parents

Gastroenterology and Hepatology

- 1 Have the knowledge and skills to be able to assess and initiate management of patients presenting with gastroenterological problems in acute and outpatient settings
- 2 Understand the role of interventional procedures eg endoscopy or colonoscopy in the investigation of gastroenterological disorders

Acute presentations

The patient presents with:	Knowledge and understanding	skills
Acute abdominal pain	Know the causes of acute abdominal pain	Recognize when to request a surgical opinion Recognize conditions which require urgent intervention e.g. intussusception
Acute diarrhea and /or vomiting	Know the causes of the symptoms of acute diarrhea and/or vomiting Be familiar with local isolation policies Know about oral and intravenous fluid therapy	Recognize features in the presentation which suggest serious pathology e.g. haemolytic uraemic syndrome, appendicitis, intestinal obstruction
Jaundice	Know the causes of neonatal and childhood jaundice	
Upper and lower gastrointestinal bleeding	Know the causes of upper and lower gastrointestinal bleeding Understand the potentially life threatening nature of this presentation	Assess the severity of the condition Institute appropriate emergency treatment

Abdominal distension	Know the causes of abdominal distension	Initiate investigation and seek surgical opinion when required
Acute liver failure	Be familiar with the causes of acute liver failure Be familiar with the complications of acute liver failure Know the management of paracetamol poisoning	Recognize the need to discuss the case with the liver unit early
Congenital abnormalities	Know the presenting features of congenital abnormalities including tracheo-oesophageal fistula, malrotation, bowel atresias, Hirschsprungs disease, abdominal wall defects diaphragmatic hernia Be familiar with potential associated abnormalities Know when antenatal transfer to a Neonatal Surgical Centre should be considered	Institute appropriate emergency treatment Recognize the need to liaise with surgeons
Gastro-oesophageal reflux and oesophagitis	Know the range of presentations of gastro-oesophageal reflux and oesophagitis in otherwise well infants and children and also in disabled children	Recognize the range of signs and symptoms associated with gastro-oesophageal reflux and oesophagitis

Outpatient presentations

The patient presents with:	Knowledge and understanding	skills
Chronic or recurrent abdominal pain	Know the possible biological, psychological and social contributing factors in chronic or recurrent abdominal pain	Recognize features in the presentation that suggest the importance of different aetiologies
Chronic diarrhea and/or vomiting	Know the causes of Chronic diarrhea and/or vomiting Be aware of the characteristics of bulimia	
Constipation with or without soiling	Be familiar with local and national guidelines for management Know about predisposing conditions e.g. hypothyroidism, neurodisability, psychosocial problems	Manage simple constipation with and without soiling Recognize when to liaise with more senior paediatricians or with specialist nurses, psychologists or psychiatrists
Dysphagia	Know the causes of dysphagia	Be able to distinguish between organic and functional dysphagia
Malabsorption	Know the causes of malabsorption including celiac disease and cystic fibrosis and its consequences Understand the principles of treatment of the different types of malabsorption	Recognize the role of the dietician and to liaise appropriately
Malnutrition	Know the causes of malnutrition including organic and non-organic causes Be familiar with the	Be able to assess nutritional status Be able to initiate investigations to establish the

	consequences of malnutrition Know the principles of enteral and parenteral nutrition support	diagnosis and to detect nutritional deficiencies
Iron deficiency anaemia	Know the causes of iron deficiency anaemia including poor diet, bleeding and malabsorption Understand factors which predispose to dietary iron deficiency anaemia Be aware of the consequences of this condition	Be able to manage iron deficiency anaemia

Genetics and Dysmorphology

- 1 Understand the scientific basis of chromosomal disorders and inheritance
- 2 Be able to construct a family tree and interpret patterns of inheritance
- 3 Understand the basics of molecular genetics
- 4 Know about the features of common chromosome disorders
- 5 Know the basis of prenatal screening and diagnosis, the conditions for which they are used and the ethical dilemmas they pose
- 6 Be able to describe the features of a baby or child associated with common
- 7 malformation or deformation syndromes
- 8 Have an awareness of the use and non directive nature of genetic counseling
- 9 Understanding the risks of and cultural issues posed by consanguinity
- 10 Be able to recognize features suggesting dysmorphic or genetic syndromes and to identify associated anomalies

- 11 Know the processes involved in establishing and presenting the diagnosis to parents
- 12 Have experience of interviews where diagnoses of serious conditions are communicated to parents
- 13 Know what to do when the diagnosis of Down's syndrome is suspected at delivery or on the postnatal wards
- 14 Be aware of environmental factors which may affect pre-natal development.

Haematology and Oncology

- 1 Have the knowledge and skills to be able to assess patients presenting with haematological or oncological presentations in inpatient and outpatient settings
- 2 Be able to initiate management in common presentations of malignant & non-malignant disorders
- 3 Know the principles of cancer treatment
- 4 Be aware of the short and long term side effects of chemotherapy and radiotherapy
- 5 Be familiar with the indications and complications of bone marrow transplantation
- 6 Know about national and local blood transfusion policies and procedures

Acute and outpatient presentations

The patient presents with:	Knowledge and understanding	skills
Anaemia	Know and understand the causes of anaemia Understand the investigations which may clarify the diagnosis Understand the predisposing factors and consequences of iron deficiency anaemia	Be able to manage iron deficiency anaemia Know how to counsel parents about hereditary anaemias Be able to explain screening for the thalassaemia or sickle cell trait Be able to recognize and initiate

	Understand the hereditary basis and clinical features of the thalassaemias Understand the long term implications for families Know about the potential consequences of haemolytic anaemia	management of sickle cell crisis
Severe anaemia with heart failure	Know causes of severe anaemia according to age Understand the feature of heart failure Know the pathophysiology of anaemia	Able to diagnose heart failure Able to differentiate the different causes of anaemia Knows to investigate appropriately before transfusion Able to manage heart failure Able to get referral appropriately
Polycythaemia	Know the causes and treatment of polycythaemia in the newborn period Understand why children with cyanotic congenital heart disease are vulnerable to polycythaemia	Be able to describe the process of partial plasma exchange transfusion in a newborn infant
Febrile neutropenia	Understand the significance of fever in a neutropenic patient Understand the differentiating risks of neutropenia in different conditions	Be able to identify risk of these patients and assess the magnitude of the problem Be able plan investigation and to send blood culture

		and to initiate treatment following local network guidelines and recognizing
Neutropaenia	Understand the significance of fever in a neutropaenic patient	Be able to manage febrile neutropaenia with guidance
Purpura and bruising	Know the causes of purpura and bruising Recognize features in the presentation which suggest serious pathology or child abuse	Be able to explain Henoch-Schonlein purpura to parents Know how to explain idiopathic thrombocytopaenic purpura to parents
Other haemorrhage due to coagulopathy	Know the causes and presentations of haemorrhagic disease of the newborn Understand the hereditary basis of haemophilia and other coagulation disorders	Be able to discuss the need for prophylactic Vitamin K with parents Be able to recognize and treat haemarthrosis in a patient with haemophilia
Leukaemia	Be aware of the different types of leukaemia and of their prognoses Recognize and understand the clinical manifestations of leukaemia	Be able to recognize the immediate dangers of leukemia to the newly presenting child Be aware of national trials and protocols
Lymphomas	Know the clinical features of Hodgkin's disease and non-Hodgkin's lymphoma	Be aware of staging and protocols for treatment
Other solid tumours	Know about the clinical presentation,	Be aware of staging and protocols for

	treatment and prognosis of nephroblastoma and neuroblastoma Be aware of the clinical features and investigation findings of other solid tumours	treatment Be able to recognize the presenting features of these tumours
Tumor lysis syndrome	Know causes and pathophysiology of Tumor lysis syndrome Know the complication of Tumor lysis syndrome like renal failure respiratory failure Know the biochemical change that follows TLS	Able to differentiate the underlying causes Able to start resuscitation Able to investigate Able to refer to appropriately where necessary like renal failure
Mucositis	Know the causes and pathogenesis of mucositis Know potential complication of mucositis	Able to identify the sites affected by mucositis Able to start management Able to provide nutritional management
Chemotherapy induced vomiting	Knows the mechanism of vomiting by the chemotherapeutic drugs Know consequences of vomiting	Able to recognize the effect of vomiting (complication) and plan to investigate appropriately Able to use antiemetics effectively Able to monitor the patient
Mismatched blood transfusion/transfusion reaction	Know underlying causes of mismatched	Can identify the patient with mismatched

	transfusion Know common feature of mismatched transfusion	transfusion/transfusion reaction Able to find out causes of mismatched transfusion Take appropriate measure to combat complication
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Outpatient presentations

The patient presents with:	Knowledge and understanding	skills
Pallor/anemia	Know and understand the causes of anemia and recognize serious underlying pathology Understand the predisposing factors and consequences of iron deficiency anemia Understand the hereditary basis of anemia Understand the long-term implications differential diagnosis of anemia Know about the potential consequences of hemolytic anemia Know about anemia due to marrow failure	Be able to investigate anemia Be able to manage iron deficiency anemia Know how to counsel parents about hereditary anaemias Be able to identify anemia from marrow failure and investigate for the same
Thalassemia syndrome	Knows the epidemiology, classification of thalassemia and hemoglobinopathies Understand pathophysiology of thalassemia Know the clinical manifestation,	Be able to diagnose thalassemia and haemoglobinopathies at its earliest presentation Be able to investigate properly Be able to counsel parents and prepare the parents for

	complication and outcome of thalassemia Know the implication of hereditary on future child	antenatal diagnosis
Abdominal mass/hepatosplenomegaly	Knows causes of hepatosplenomegaly/abdominal mass, Be able to correlate with other physical findings	Be able to examine and identify separate organ plan for investigation appropriately Start emergency management plan for proper management
Bleeding disorders	Know the causes of purpura, bruising and ecchymoses Be able to identify new and old ones Be able to understand the underlying causes of the bleeding Know the pathophysiology of the different causes Know the causes and presentation of haemorrhagic disease of the newborn Understand the hereditary basis of haemophilia and other coagulation disorders Knows the effect of bleeding on hemodynamics	Recognize features in the presentation which suggest serious pathology or child abuse and able to differentiate different causes Be aware of situations where specialist referral is appropriate Be able to explain idiopathic thrombocytopenic purpura (ITP) to parents including when precautions and treatment are necessary and manage continuing care Be able to examine the swelling joints Be able to investigate to confirm the diagnosis Be aware of the

		need to treat urgently, with appropriate advice Be able to manage acute bleeding in hemophilia and Von Willebrands disease Use genetic counseling services appropriately
Leukemia	Know the epidemiology, pathology and classification of leukemia Know the clinical manifestations acute lymphoblastic leukemia Acute myeloblastic leukemia and Chronic myeloid leukemia Recognize and understand complication of acute leukemia	Be able to recognize and initiate investigations to diagnose leukemia Be able to recognize the immediate emergencies of leukemia to the newly presenting child Be able to follow protocols in treating leukemia
Lymphadenopathy	Know the causes of lymphadenopathy, other clinical features suggestive of Hodgkin's disease and non-Hodgkin's lymphoma or underlying pathology Knows how the lymphadenopathy of malignant lymphoma differs from those of tuberculosis	Be able to investigate to diagnose underlying pathology and do staging of the disease Be able to assess emergency situation and to start emergency therapy Be able to assess outcome and counsel family regarding treatment protocol
Proptosis	Knows the differential diagnoses of proptosis	Be able to identify and differentiate

		underlying disease presenting with proptosis Be able to investigate in proper direction Can initiate supportive treatment Can identify complication
Transfusion	Know the indications for irradiated blood products Knows the use of blood product transfusion eg. PRBC, platelet concentrates, FFP and coagulation factors Understand the risks of administering blood products	Follow transfusion procedures correctly Explain the risks and benefits ordering blood products appropriately Respond to transfusion reaction appropriately Manage transfusion reaction
Hematologic manifestation of systemic diseases	Knows the diseases with different hematological manifestation	Be able to order appropriate blood testing and to correlate the findings with the diseases

Diagnostic procedures/Practical procedure**Observation**

Hb electrophoresis
Automated hematological Analysis
Coagulation screening
Separation of platelets
Cross matching
Coomb's test

Performance

Interpretation of hematological data
Bone marrow aspiration
Lumbar puncture
Ascitic fluid aspiration
Mobile transfusion

Therapeutic procedures

- 1 IT Chemotherapy

Infection and Immunology

- 1 Have the knowledge and skills to be able to assess and initiate management of patients presenting with infectious disease and allergic conditions
- 2 Know and understand host defence mechanisms and their pattern of development
- 3 Know the causes of vulnerability to infection
- 4 Know and understand the classification of infectious agents
- 5 Know the mechanisms of maternal to fetal transmission of infection and the clinical manifestations of these infections
- 6 Know the epidemiology, pathology and natural history of common infections of the fetus, newborn and children in Bangladesh and important worldwide infections e.g. TB, HIV, hepatitis B, malaria, polio
- 7 Be able to follow agreed local or national guidelines on notification of infectious diseases
- 8 Understand the rationale for prescribing common antimicrobials
- 9 Know the indications for antimicrobial prophylaxis, understand the mechanisms of drug resistance
- 10 Understand nosocomial infections and the basic principles of infection control
- 11 Be aware of the policies for notifying communicable diseases
- 12 Understand the pathophysiology and the principles of treatment of allergic and autoimmune disorders
- 13 Understand the classification of immunodeficiencies
- 14 Know the clinical manifestations of the different types of immunodeficiencies
- 15 Know the conditions and treatments which result in secondary immunodeficiencies

Acute presentations

The patient presents with	Knowledge and understanding	Skills
Septic shock	Understand the pathophysiology of septic shock and its complications Know local and nationally agreed guidelines for the management of meningococcal disease Be aware of the differential diagnosis of septic shock	Be able to recognise the early features of septic shock Be able to lead the team when initiating resuscitation and early treatment Be able to liaise with anaesthetic and PICU staff
Fever of unknown origin	Know the possible causes of fever of unknown origin	Recognize features in the presentation which suggest serious or unusual pathology
Anaphylaxis	Know the management of anaphylaxis guidelines	Be able to lead the team when initiating resuscitation and early treatment Be able to liaise with anaesthetic and PICU staff

Outpatient presentations

The patient presents with	Knowledge and understanding	Skills
Recurrent infections	Understand why children suffer recurrent infections be aware of conditions which predispose to infection	Recognize features in the presentation which suggest serious underlying pathology
Food intolerance	Know the common	

	offending foods be aware of the investigations that are available and of their limitations know the features of cows milk protein intolerance and its management	
Immunization	Understand passive and active immunisation Understand the principles and the rationale behind the national immunization policy for children in Britain Know the indications contraindications and complications of routine childhood immunisations	Be able to advise parents about immunisations

Metabolic medicine

- 1 Recognize the clinical and biochemical features of electrolyte and acid base disturbances
- 2 Know the common clinical presentations of metabolic disease including encephalopathy neurodevelopmental regression, muscle weakness, visceromegaly and failure to thrive
- 3 Know when it is appropriate to perform metabolic investigations in neonates and children
- 4 Know the appropriate screening investigations that should be performed when a metabolic disorder is suspected
- 5 Know further investigations that should be performed in order to establish a diagnosis of a metabolic disorder
- 6 Be able to interpret commonly used investigations and understand how these differentiate between metabolic disorders including those that result in cot death

- 7 Know about the common biochemical findings in an acutely ill newborn or child presenting with metabolic disease, including hypoglycaemia, hyperammonaemia or metabolic acidosis
- 8 Understand when it is appropriate to investigate and which investigations to perform in a neonate or child with visceromegaly
- 9 Know the causes of metabolic bone disease and investigations to differentiate between the causes
- 10 Know when it is appropriate to consider porphyria in a child presenting with abdominal pain
- 11 Understand the principles of dietary, vitamin and pharmacological treatment of metabolic disorders
- 12 Be aware of those metabolic disorders which are vitamin responsive or responsive to pharmacological treatment
- 13 Know about the metabolic disorders which may respond to enzyme therapy or bone marrow transplantation.
- 14 Know the routine neonatal screening tests for metabolic disease and be able to explain them to parents
- 15 Know the inheritance patterns of common genetically determined metabolic disorders
- 16 Know about the education and social implications of metabolic disorders and the importance of organizing support in the community for special diets and other risks

Musculo-skeletal medicine

- 1 Have the knowledge and skills to be able to assess and initiate management of patients presenting with musculo-skeletal problems
- 2 Know the differential diagnosis of inflammatory, non-inflammatory and idiopathic cause of musculo-skeletal symptoms
- 3 Be aware of conditions that predispose to musculo-skeletal deformities, for example kyphosis and scoliosis

- 4 Take an appropriate history musculoskeletal examination and assessment
- 5 Recognize when to request the opinion of paediatric rheumatologists or orthopaedic surgeons
- 6 Recognize features in the presentation which suggest serious pathology serious pathology, e.g. inflammation, malignancy, infection and vasculitis
- 7 Be aware of the presentation of both chronic fatigue syndrome and generalized idiopathic pain syndromes
- 8 Recognize features in the presentation or investigation findings which suggest physical abuse emotional abuse and neglect
- 9 Understand the role of other professionals involved in the care of children with musculo-skeletal conditions
- 10 Be aware of the spectrum of conditions which can lead to musculo-skeletal problems
- 11 Be aware of the complications of immunosuppressive treatment
- 12 Understand the disease associations of rheumatological conditions, in particular juvenile arthritis and eye disease.

Acute presentations

The patient presents with	Knowledge and understanding	Skills
Joint swelling	Know the causes of joint swelling Be aware of indications for joint aspiration	Identify joint swelling on clinical examination
Joint or bone pain	Know the causes of joint or bone pain Understand the investigations that may differentiate between the causes	Be aware of referred pain Be able to distinguish between bone and joint pathology

Limp	Know the differential diagnosis of a limp Understand the appropriate investigations to differentiate the cause	Begin to develop intuitive skills to recognize possible serious physical or psychological conditions
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Outpatient presentation

The patient presents with	Knowledge and understanding	Skills
Limb pains	Know the differential diagnosis of limb pains Be aware of unexplained illness behaviour and pain syndromes Be aware of hypermobility and rickets	Be able to distinguish between non-serious causes and serious pathology and manage each appropriately
Back pain	Be aware of serious causes of back pain Understand the investigations that may clarify the diagnosis	Be able to assess clinically whether there is likely to be a serious underlying condition
Bow legs and knock knees	Be aware of the range of normality at different ages Be aware of pathological causes of these presentations Know the aetiology predisposing factors and presentation of rickets	Know how to give appropriate advice about these conditions
Torticollis	Know the common causes of torticollis Be aware of serious	

	causes including posterior fossa tumour atlanto-axial instability and juvenile idiopathic arthritis	
Inequality of limb length	Be aware of the causes of unequal limb length and normal variation	Know how to measure limb length
Multi-system disease	Recognize the features which suggest systemic onset of juvenile idiopathic arthritis Know the differential diagnosis of inflammatory or infective causes of multi-system disease Understand the investigations that may clarify the diagnosis	

Neonatology

- 1 Be able to examine the newborn baby appropriately and sensibly
- 2 Be able to perform an accurate assessment of the baby at birth
- 3 Have the knowledge and skills to be able to assess and initiate management of babies presenting in the neonatal period with problems (in acute, postnatal ward and outpatient settings)
- 4 Be able to initiate appropriate resuscitation when required
- 5 Know and understand the effects of antenatal and perinatal events on outcome
- 6 Know and understand the pathophysiology of prematurity
- 7 Be able to recognize and outline the management of common disorders

- 8 Be able to initiate diagnostic tests for common disorders
- 9 Understand the principles of mechanical ventilation and resuscitation
- 10 Be able to perform a reliable assessment of fluid status and initiate appropriate fluid management
- 11 Understand the principles of parenteral nutrition
- 12 Understand the principles and importance of nutrition in the neonatal period
- 13 Have experience of basic practical procedures and tests and be able to understand the results
- 14 Understand the principles of prescribing for newborn babies and breast-feeding mothers
- 15 Understand the life-threatening nature of some of these situations and when to call for help or look for personal support
- 16 Know when and how babies are transferred for specialist levels of intensive care
- 17 Understand the implications for families of babies with neonatal problems
- 18 Begin to develop strategies to communicate sympathetically with parents
- 19 Understand the long-term sequelae of prematurity and begin to recognize those at risk
- 20 Know about the retinopathy of prematurity and its prevention and treatment

Acute presentations

The patient presents with	Knowledge and understanding	Skills
Birth depression	Know the causes and possible outcomes Understand the principles of resuscitation Know the criteria necessary before perinatal asphyxia can be diagnosed	Be able to initiate resuscitation using bag and mask ventilation and cardiac compressions

	Understand the physiological effects of a hypoxic-ischaemic insult	Can intubate term babies and have had supervised experience of intubating pre-term babies Recognize features which suggest significant consequences
Respiratory distress (acute and chronic)	Understand the common causes of respiratory distress Know the relevant investigations understand the principles and complications of ventilation Know the guidelines for surfactant therapy Understand the pathophysiology and management of chronic lung disease Understand the contribution of patent ductus arteriosus to respiratory compromise	Be able to interpret chest radiographs Be able to initiate respiratory support Be able to suspect and diagnose pneumothorax Recognize when to request help from a medical or nursing colleague Obtain, interpret and act appropriately on blood gas results Be able to insert umbilical arterial and venous lines Be able to identify signs suggestive of patency of the duct and describe management options

Birth Injury	Know the types of common birth injuries Understand its pathophysiology	Be able to differentiate different types Be able to manage all types of birth injuries Be able to take interdisciplinary consultation
Cyanosis not of respiratory origin	Understand the anatomy and implications of cyanotic congenital heart disease Understand the pathophysiology of persistent pulmonary hypertension and know about treatment	Be able to suspect the diagnosis and initiate appropriate investigations
Hypotension	Understand the causes and effects Understand the rationale for different treatment options	Be able to interpret and act on blood pressure measurements
Intra-uterine growth restriction and other nutrition problems	Understand the importance of breast feeding Know the causes of intrauterine and postnatal growth failure Understand the principles of parenteral nutrition Know about risk factors for necrotizing enterocolitis	Be able to keep and interpret accurate growth records Be able to prescribe appropriate nutrition and supplements Be able to recognize early signs of necrotizing enterocolitis and initiate treatment
Fluid and blood product therapy	Know the fluid requirements of preterm and sick babies	Be able to assess fluid balance Recognize the

	Know the causes of abnormal coagulation Know the indications for therapy with blood products	need for blood product transfusions Be able to test for and recognize bleeding disorders
Neonatal seizures of abnormal neurological status including the floppy baby	Understand the aetiology and prognosis of abnormal neurological status Know about periventricular/intramural haemorrhage and leucomalacia Know about the management of post-haemorrhagic hydrocephalus	Be able to perform a neurological assessment Be able to recognize the basic features of cranial ultrasound scans Be able to recognize and initiate management of seizures
Serious congenital anomalies	Understand the underlying pathology Understand the use of antenatal diagnosis and the role of fetal medicine Be aware of surgical interventions Understand the impact on parents of the birth of a baby with serious congenital abnormalities or potential disabilities and the ensuing grief due to loss of the expected normal child	Be able to recognize serious abnormalities Be able to initiate appropriate tests Be able to respond to parents immediate questions
Sepsis	Know the likely pathogens Understand the importance of timely treatment Know about nosocomial infection	Recognize early signs of sepsis and initiate therapy appropriately Practice effective infection control

Neonatal transport	Implication of neonatal transport Rational of neonatal transport	Be able to organize neonatal transport
The dying baby	Understand the ethical principles involved Know about terminal care and bereavement counseling	Be able to communicate sympathetically with parents Begin to develop strategies to deal with personal stress and know when to look for support

Postnatal ward and outpatient presentations

The patient presents with	Knowledge and understanding	Skills
Jaundice	Understand the investigations that will differentiate between the causes of conjugated and unconjugated hyperbilirubinaemia Know the appropriate management know how an exchange transfusion is performed	Be able to diagnose haemolytic jaundice Be able to prescribe phototherapy appropriately Recognize features which suggest serious pathology
Feeding	Understand the importance of breast-feeding Know the causes of feeding problems	Be able to support and advise breast-feeding mothers Be able to identify underlying pathology or failure to thrive
Infants of diabetic mothers	Understand the physiology Know the likely complications	Be able to interpret blood glucose

		estimations Be able to initiate appropriate management
Minor congenital abnormalities	Know the common diagnoses and the likely prognosis of minor congenital abnormalities Know about common presentations of congenital cardiac disease	Be able to advise parents appropriately Recognize when referral to an appropriate specialist is needed
Disordered development	Know the causes and natural history of conditions causing disordered development Understand current theories about the pathophysiology of cerebral palsy Understand the common complications of cerebral palsy and disordered development and how to access expert assessment and management	Be able to perform a developmental assessment Be aware of the need for involvement of the multidisciplinary team Understand the impact of developmental delay on families
Screening	Know the range of screening tests used Know about the universal Newborn Hearing Screening Programme Understand the difference between a screening and a diagnostic test Understand the investigations that will follow Know about developmental dysplasia of the hip	Be able to explain the implications of a screening test to parents Order such tests appropriately Be able to examine newborn hips effectively

Nephro-urology

- 1 Have the knowledge and skills to be able to assess and initiate management of patients presenting with nephro-urology problems in acute and outpatient settings
- 2 Be able to perform a reliable and accurate assessment of fluid status and initiate appropriate initial fluid management
- 3 Have the knowledge and understanding of fluid and electrolyte imbalance and blood pressure in children with kidney problems
- 4 Understand the role of different renal imaging techniques including ultrasound, static and dynamic isotope scans in the investigation of urinary tract disorders
- 5 Have an understanding of the implications for families of children with chronic kidney problems
- 6 Understand the principles of prescribing in children with renal disease

Acute presentations

The patient presents with	Knowledge and understanding	Skills
Nephritic syndrome	Understand the complications of the nephritic state Understand the principles of the pharmacological, dietary and fluid management Understand the investigations including the indication for renal biopsy	Be able to advise parents on the complications of steroid therapy Recognize features in the presentation which suggest serious or significant pathology
Acute nephritis	Know the aetiology, pathophysiology and immunological basis of glomerulonephritides and vasculitides Understand the investigations that will differentiate between the	Recognize features in the presentation which suggest serious or significant pathology

	causes Be aware of the range of immunosuppressive therapies that may be used in these conditions	
Acute renal failure	Know the causes of acute renal failure Understand the investigations that may differentiate between these causes Know the features of haemolytic uraemic syndrome Understand the methods to correct fluid and biochemical abnormalities seen in renal failure Know the indications for dialysis	
Hypertension	Know the techniques of blood pressure measurement Know the causes of hypertension and the principles of treatment	Be able to interpret blood pressure measurements
Acute scrotal pain	Know the differential diagnosis of this symptom	Be able to recognize the important causes of acute scrotal pain Be able to identify children who require urgent surgical referral
Neonate with history of abnormal antenatal ultrasound of the renal tract	Understand the causes and management of antenatal hydronephrosis Know about the causes of echogenic or cystic kidneys Know about the	Be able to recognize when to refer to a nephrologist or urologist

	inheritance patterns of renal abnormalities detected in fetal life	
Stones	Know the causes of stone formation	
Voiding disorders including enuresis, dysuria, frequency and polyuria	Know both the physical and psychological causes of voiding disorders Understand the principles of investigation of urinary tract infection and the management of vesico-ureteric reflux Understand the principles of managing enuresis	Be able to take a detailed voiding history Be able to interpret common urine microscopic and culture findings Recognize features in the presentation which suggest serious or significant pathology
Haematuria and proteinuria	Know the causes of these signs Understand the investigations that will differentiate between the causes Know the indications for renal biopsy	Recognize features in the presentation which suggest serious or significant pathology
Urogenital abnormalities	Know when surgical referral is required for circumcision, impalpable testes hypospadias or suspected urinary tract obstruction	Be able to examine the genitalia appropriately and with sensitivity
Chronic renal failure	Know the causes and natural history of conditions causing chronic renal failure Understand the pathophysiology of bone disease, anaemia and growth failure Know about dialysis and transplantation	Appreciate the impact of chronic renal failure in childhood and later adult life

Tubular disorders	Know the range of presentations suggestive of an underlying renal tubular disorder Know about the inheritance patterns of different tubular disorders	
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Neurology and Neurodisability

- 1 Have knowledge and understanding of the pathophysiology of common disorders affecting the nervous system
- 2 Know and understand the common causes of disability
- 3 Understand concepts of disability and what this means for the child and family
- 4 Be able to take an accurate neurological and neuro-developmental history
- 5 Be able to examine the nervous system of a newborn baby, child and young person
- 6 Be able to perform a reliable assessment of neuro-developmental status at key stages, including the newborn period, the first year of life, nursery age, school entry and late primary education
- 7 Be able to recognize a disabled child
- 8 Have the knowledge and skills to be able to initiate management of children with neurological and neurodisabling conditions in acute settings and know when and whom to call for help
- 9 Understand the life-threatening nature of acute neurological deterioration and when to call for help
- 10 Be able to recognize, initiate diagnostic tests and outline the management of common disorders
- 11 Understand the principles and use of neuro-radiological imaging
- 12 Have a basic understanding and experience of neuro-physiological tests

- 13 Understand the principles of prescribing and monitoring therapy
- 14 Have experience of working with multi-disciplinary teams
- 15 Understand the implications for families of children with neurological and neurodisabling conditions
- 16 Understand the impact of developmental disorders on the life of child and family at different developmental stages
- 17 Understand the need for a range of communication skills with disabled children, their families and other professionals
- 18 Be able to work with families and professionals in the care of disabled children
- 19 Be aware of local services
- 20 Understand the need to work with other services outside neurology and neurodisability such as child protection, education, services for looked after children and adult services
- 21 Develop a commitment to advocacy on behalf of disabled children and their families
- 22 Understand the importance of seeking the views of all children to inform decisions about their individual care and about planning services
- 23 Be aware of how agencies work together to address how children with health and medical needs are managed at school.

Acute presentations

The patient presents with	Knowledge and understanding	Skills
Seizures	Know the common causes of seizures in newborn babies and children Be aware of common epileptic syndromes Begin to understand the links between epilepsy	Be able to initiate treatment for acute continuing seizures Be able to form a differential diagnosis understand the

	and behaviour problems Understand the place and principles of the EEG and neuro-imaging in investigation Know about the long term implications of epilepsy	principles of initial and continuing Work effectively with the multidisciplinary team
Faints and "funny turns"	Be able to formulate a differential diagnosis for faints and funny turns Understand the investigations that may differentiate between these causes	Be able to make a likely diagnosis Be able to explain likely diagnoses to parents
Acute focal neurological signs	Understand the implications of acute focal neurological signs Understand the principles of investigation	Be able to demonstrate the signs Begin to gain experience of interpretation of CT and MRI scans Have experience of how diagnoses are given to parents
Ataxia, clumsiness and abnormal movement patterns	Know the common possible causes of ataxia, clumsiness and abnormal movement patterns Know the indications for investigations	Be able to recognize the signs Recognize which urgent investigations are needed
Hypotonia, neuropathies and myopathies	Know about the common causes of hypotonia, neuropathies and myopathies Know about the relevant neurophysiological and metabolic investigations	Be able to demonstrate the signs Be able to form a likely differential diagnosis
Meningism and altered consciousness	Know the likely causes or pathogens of meningism and altered consciousness	Recognize early signs of meningitis and encephalitis

	Understand the principles of treatment Know about prophylactic therapy for contacts of meningitis Be aware that organic brain conditions can lead to psychotic symptoms Know when it is safe to perform a lumbar puncture Know the principles of establishing brain stem death	Use a validated coma score recognize signs and implications of raised Intra-cranial pressure initiate therapy appropriately Call for help promptly Recognize the need for urgent referral to audiology specialists after bacterial meningitis
Neural tube defects and other congenital anomalies	Know about antenatal diagnosis of neural tube defects and other congenital anomalies Know about the ethical principles involved in management decisions	Be able to recognize syndromes Be able to communicate sympathetically with parents
Trauma to central and peripheral nervous systems	Be aware of the implications of severe head injury and the possibilities for rehabilitation Know about other neurological trauma such as brachial plexus injury	Be aware of acute management and need to transfer appropriately Recognize the place of occupational and physiotherapy
Fever or illness in a child with complex disabilities	Be aware of the range of diagnostic possibilities, including chest infection, aspiration, gastrooesophageal reflux, oesophagitis, constipation, hip and joint problems, dental problems etc know when and where to get help	Be able to assess child to assess child with complex disabilities who is unwell Be able to recognize important indicators of specific conditions

Community and Outpatient presentations

The patient presents with	Knowledge and understanding	Skills
Neuro-developmental regression	Be familiar with the main investigations that will differentiate between the causes of neuro-developmental regression and how to access further expert help Understand the implications	Be able to assess development
Disordered development	Understand the common causes of disability, disordered development, and learning difficulties Know about the current theories on the pathophysiology of cerebral palsy Know about common secondary disabilities Understand the complications of cerebral palsy and disordered development	Be aware of the work of the child development team or centre

Ophthalmology

- 1 Be able to examine the eye and recognize those abnormalities which require urgent referral or treatment
- 2 Be able to take a relevant history for a child with suspected visual impairment
- 3 Be able to use an ophthalmoscope to recognize an abnormal fundus and lens opacity
- 4 Know the principles of visual acuity testing at various ages
- 5 Be able to test for colour vision
- 6 Understand the microbiology and treatments for common eye infections including orbital cellulitis
- 7 Know about the eye manifestations of common genetic and systemic diseases

- 8 Recognize and interpret abnormal eye movements
- 9 Know about support at school and other resources for children with visual impairments

The patient presents with	Knowledge and understanding	Skills
A red eye	Know the common causes of red eye	Be able to identify children who need referral Be able to initiate investigations and manage appropriately
A possible squint	Know the causes of acute onset and the congenital causes of a squint	Be able to recognize abnormal alignment of the eyes and examine corneal reflexes
Ptosis	Know the congenital and acquired causes of ptosis Know about the Tensilon test	
Proptosis	Know the common causes of proptosis	Be able to initiate appropriate investigations Be able to examine for signs of relevant systemic disease
Abnormal movement	Know the ocular and neurological causes of benign abnormal eye movements	Be able to interpret clinical findings correctly Be able to undertake a full neurological examination where appropriate
Abnormal fundus	Know the normal appearance of the retina	Be able to identify

		papiloedima, abnormal vessels and pigmentation Be able to identify haemorrhage
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Respiratory Medicine, with Ear, Nose and Throat

- 1 Have the knowledge and skills to be able to assess and initiate management of patients presenting with respiratory problems in acute and outpatient settings
- 2 Have the knowledge and understanding of factors relating to long-term management of chronic respiratory problems
- 3 Understand the life-threatening nature of some of these conditions and when to call for help

Acute presentations

The patient presents with	Knowledge and understanding	Skills
Sore throat and/or mouth	Know the causes of these complaints Know appropriate therapies	Recognize features in the presentation which suggest serious pathology
Nose bleeds	Know the common causes of nose bleeds	Recognize those with underlying pathology
Snoring and obstructive sleep apnoea	Know the causes of snoring Be aware of complications of this presentation Understand the indications for sleep studies	Recognize when referral to an ENT surgeon is appropriate
Earache	Know the common causes & complications Know the risk factors for	Recognize an abnormal ear drum

	otitis media with effusion Understand the vulnerability of children with cleft palate	Recognize when to treat with antibiotics Recognize when to refer to audiology specialists or an ENT surgeon
Acute stridor	Understand the potentially life threatening nature of this condition Know about allergic and infective causes eg epiglottitis, laryngotracheitis, retropharyngeal abscess and foreign body	Recognize when to request help from a senior colleague Recognize children with existing chronic upper airway problems
Acute severe asthma	Be familiar with the British Thoracic Society guidelines for management	Be able to assess the severity of an asthma attack Be able to institute appropriate emergency treatment Recognize when more senior help is needed
Lower respiratory tract infection, including pneumonia and bronchiolitis	Be familiar with the causes of respiratory tract infections Know appropriate therapies Be familiar with indicators of severity	Be able to initiate appropriate therapies Be able to recognize patients requiring intensive care Be able to recognize complications eg empyema
Respiratory failure	Know the indications for ventilation Be aware of the agreed	Recognize patients requiring urgent assessment

	resuscitation plans for individual patients	and treatment including assisted ventilation Liaise with more senior paediatricians anaesthetists and intensivists when appropriate
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Outpatient presentations

The patient presents with	Knowledge and understanding	Skills
Cervical Lymphadenopathy	Know the causes of cervical lymphadenopathy	Recognize when investigation and surgical intervention is needed
Chronic stridor	Know the causes of chronic stridor	
Asthma	Be familiar with the British Thoracic Society guidelines for management of asthma Know about patterns of asthma and exacerbating factors Know the complications of long-term use of medications for asthma	Institute age-appropriate individualized management plan for asthma Teach children how to use a peak flow meter and diary Teach and assess inhaler technique
Recurrent or chronic chestiness	Know the respiratory and non-respiratory causes, including aspiration, of recurrent or chronic chestiness Know about predisposing conditions such as neuromuscular and skeletal disorders	Recognize features in the presentation which suggest serious or unusual pathology eg atypical presentations of cystic fibrosis

		Be aware of role of bronchoscopy, hP studies and video-fluoroscopy
Cystic fibrosis	Know and understand the pathophysiology and natural history of cystic fibrosis Understand the principles of treatment	Work with a multi-disciplinary team, particularly physiotherapy and dieticians

5. Practical procedures and Investigations

- 1 Know the appropriate indications for practical procedures and investigations
- 2 Know the contraindications and complications of procedures
- 3 Know the local and national guidelines for obtaining informed consent
- 4 Know the relevant anatomical markers for procedures
- 5 Know and practice scrupulous aseptic techniques
- 6 Be able to interpret results and respond appropriately
- 7 Be able to record results and document procedures legibly and accurately
- 8 Be able to give appropriate medical information when requesting investigations
- 9 Be able to use all equipment required to undertake common procedures and investigations
- 10 Be able to explain the investigation results to parents and/or the child
- 11 Be aware of the role of complex investigations eg CT and MRI scans and their diagnostic potential and complications

Diagnostic procedures

- 1 Collection of blood from central lines
- 2 Electrocardiogram
- 3 Lumbar puncture/non-invasive blood pressure measurement
- 4 Umbilical artery and venous cannulation and sampling
- 5 Suprapubic aspiration of urine

Therapeutic procedures

- 1 Bag, valve and mask ventilation
- 2 External chest compression
- 3 Tracheal intubation of term newborn babies

They may need supervision to:

- 1 Administer injections intradermal, subcutaneous, intramuscular, intravenous injections
- 2 Perform needle thoracentesis
- 3 Administer surfactant
- 4 Perform percutaneous long line insertion
- 5 Perform tracheal intubation of pre-term and older child

Pharmacology and therapeutics

- 1 Know and understand the pharmacological basis for treatments
- 2 Know how to prescribe safely for the newborn and for children of all ages
- 3 Know how to find out information necessary for safe prescribing through use of paediatric formularies and pharmacy liaison
- 4 Know the approved indications and justification for prescribing drugs in common paediatric problems
- 5 Know the pharmacokinetics and pharmacodynamics of commonly prescribed drugs
- 6 Be able to calculate drugs accurately according to specific dose for weight or age/weight range or on a specific dose/surface area basis
- 7 Be aware of possible drug interactions where more than one drug prescribed
- 8 Know the risks of prescribing in the child-bearing years and in pregnancy
- 9 Be aware of procedures for obtaining consent in children and young people for the administration of drugs
- 10 Know about the licensing of medicines for paediatric patients and unlicensed and off-label use

- 11 Know the local and national guidelines for the relief of pain in children
- 12 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 of Safety of Medicines, the Medicines and Healthcare products Regulatory Agency and Hospital Formulary Committees).

Procedural Skill with independent capability

I/v cannulation
N/G tube placement
Blood transfusion including mobile transfusion
Collection of sample for body fluid culture
Throat swab collection
Pulse oxymetry
Bedside test for urinary sugar, albumin, ket one
Subcutaneous drug administration
BCG test
Tuberculin test
Vaccination
Anthropometry and charting
Ophthalmoscopy
Auroscopy
Oxygen therapy
LP
Per rectal Inj
Intralasal midazolam
Nebulization
PEFR
Blood gas analysis
ECG interpretation
Introduction of nasogastric tube
Upra pubic puncture
Albumin infusion
FFP infusion
I/V cyclophosphamide infusion
I/V Methylprednisolone infusion
Assessment of gestational age
Umbilical catheterization

B.P
Ventilator
Neonatal resuscitation
Neonatal IV cannula
CBG
Umbilical swab
Phototherapy
Syringe pump
Infusion pump
Drawing of Arterial blood
Arterial blood gas analysis
Setting Incubator

Procedural Skill with Observation status:

Pleural fluid aspiration
Ascitic fluid aspiration
Intra articular Injection
Synovial fluid aspiration
Spirometry
Liver biopsy
Upper GI endoscopy
Renal biopsy
Peritoneal dialysis
Hemodialysis
Urethral catheterization
Phlebotomy
Non invasive blood pressure measurement
Suprapubic aspiration of urine
Urethral catheterization, venesection, cannulation and capillary blood sampling
Bag, valve and mask ventilation
External chest compression
Tracheal intubation of term newborn babies

Skill attained to manage following Emergencies:

Neonatal resuscitation
Apnoea/apnoeic spell
Neonatal seizure-septic, hypoglycaemic, hypocalcaemic, hypomagnesaemia, hypoxic,

others
Neonatal sepsis and shock
Hemorrhagic disease of the newborn
Dyselectrolytemia in newborn
Fluid and electrolyte balance
Hypothermia
No urine in 24 hrs
Bowel not moved in 24 hrs
Septicaemia
Neutropenia
Aplastic crisis
Hemolytic crisis
Shock-septic, hemorrhagic, hypovolemic
Convulsion
Acute renal failure/acute tubular necrosis
Hemolytic uremic syndrome
Urinary retention
Hypertensive encephalopathy
Fluid overload
Ureteric colic
Respiratory distress
Heart failure
High fever
Severe Headache
Acute abdominal pain
Acute/frequent vomiting
Unconscious child
Severe dehydration
Common poisoning
GI bleeding
Tension pneumothorax
Upper airway obstruction-acute/chronic

Teaching and Learning Tools

A variety of teaching and learning tools are to be utilized throughout training. These tools cater to the variety of learning needs, styles and situations that may arise in workplace training. Key tools available are:

Ward rounds

Consultant-directed interactive question and answer based on the analysis of a range of cases presented in a particular ward round.

Grand rounds

Scheduled discussion sessions focused on a particular theme, topic or case. It may be presented by a guest lecturer or a Resident.

Journal Club

Critical review of articles from the current medical literature emphasizing an evidence-based medicine approach. The articles for discussion are chosen by the house staff.

Death review

Residents are to present deaths and critically analyze the situation in which the death occurred try to identify gaps and lapses that needs attention/prevention as well as creditable approaches.

Resident's Clinico-pathological conferences

During the third year, residents prepare for a clinicopathologic conference (CPC). This 1-hour, power point, evidence based, "grand rounds" style talk is presented by each PL-3 to the house staff and faculty using the principles learned during the 3rd year "teach resident" rotation.

Radiology Rounds

Radiological studies of inpatients will be reviewed periodically with a (pediatric) radiologist attending.

Formal Information Dissemination**Lecture series**

Formally delivered information sessions designed to enhance the knowledge of Trainees in a structured, non-interactive format.

Future possible resources:

Self-Directed and Goal-Oriented Learning

Experiential and Reflective Learning

Evaluation:

Below is an overview of the assessment tools used during Part-A. A variety of tools will be used, with the emphasis on provision of constructive feedback to Residents, to aid their learning. The assessment tools will require the Residents to provide good patient care and act as quality assurance towards this goal. Thus the better a person performs on the job, the better they will perform within the formal assessment program. The assessment system will link more closely with service provision, reducing the need to spend time away from the job studying books linked with the curriculum and are complemented with on the job assessment.

Continuous Assessment

This includes:

A. Daily evaluation from the use of the POMR as per following format:

Name of the resident:

ID No

Name of the supervisor:

Date of entry						Remarks
Parameter	Case 1	Case 2	Case 3	Case 4	Case 5	Remarks
History						
Chief complaint clearly identified?						
History of present illness complete and well developed?						
Pertinent negatives and positives identified?						
Past medical history complete?						

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Family history complete?						
Any other relevant special history complete?						
Current medications including allergies listed?						
Review of systems documented?						
Obtains accurate information on all parts of the history						
Proceeds in systematic thorough manner						
Physical examination						
Is the physical examination complete and pertinent to the HPI/PMH/ROS?						
Were vital signs taken by the house officer?						
Does examination causing some discomfort were done appropriately eg. throat, ear, eye, hernial orifices, rectal or PV examinations						
Assessment and plan						
Is an initial assessment documented?						
Are all pertinent admission laboratory data (including ECG, X-rays) summarized?						
Is there a comprehensive problem list?						
Are the diagnostic considerations for each problem presented?						
Progress notes						
Are progress notes						

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documented daily?						
Are laboratory studies, ECGs, X-rays ordered in a thoughtful, cost-effective manner?						
Do the progress notes adequately reflect diagnostic and therapeutic decisions?						
Procedures						
Were invasive procedures performed? (if Yes, answer the following?)						
Is written consent documented for each procedure?						
Is a procedure note present?						
Was the procedure indicated?						
Discharge						
Is a discharge, transfer or off-service note completed before the patient or doctor leaves the service?						
Is the note complete?						

B. End of rotation evaluation:

At the end of each training rotation, the supervision consultant/team shall provide the program manager with an approved evaluation form about the resident's performance during that rotation.

- Clinical skills evaluation: This is to be done by the supervising consultant/team at the end of each training rotation through
- Written assessment of relevant basic and clinical science knowledge
- Procedural assessment

C. Academic activities:

Performance of the trainee in the academic activities will be evaluated using standardized evaluation forms.

3. Annual overall evaluation:

This includes:

- a) Summation of the continuous assessment evaluations for the year (70% of the total mark)
- b) Result of the annual promotional examination (30% of the total mark)

Passing Mark: The trainee must score a general average of not less than 60% in the 2 parts above (a & b) provided that the mark in each part is not less than 50%.

Promotion:

The annual promotion (e.g R1 to R2) depends on getting the passing mark of the annual overall evaluation

Summative Examination:

This examination is given to candidates after successful completion of training, as evidenced by an acceptable final training evaluation. It is held at least once per year.

This examination consists of two parts:

- 1 A written part: designed to evaluate knowledge and clinical judgment. Candidates are allowed three years after completion of the training to pass this examination provided evidence of continuing clinical practice is presented
- 2 Clinical /Oral part: designed to test clinical skills, abilities and judgment in the field of Pediatrics.

Candidates are allowed three years, after passing the written examination to pass this examination (irrespective of number of attempts) provided evidence of continuing clinical practice is presented.

Certification:

Candidates passing the final specialty examination are awarded Part-A certification in the specified specialty by the University.