



**MASTER OF PAEDIATRICS (UM)**  
**DOCTOR OF PAEDIATRICS (UKM)**  
**MASTER OF MEDICINE (PAEDIATRICS) USM**  
**MASTER OF MEDICINE (PAEDIATRICS) UPM**

# **MANUAL FOR CANDIDATES**

**REVISED VERSION 2**

**SESSION 2018 / 2022**

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## Objectives

The philosophy of our postgraduate programme is to provide **training by apprenticeship** and learning from patients with emphasis on self-directed learning.

The objectives of the postgraduate programme are:-

1. To assist and guide trainees to acquire adequate knowledge in Paediatrics.
2. To ensure that the trainees acquire the required clinical skills and are able to function independently as competent general paediatricians at the end of the programme.
3. To provide opportunities and ensure that the trainees acquire the knowledge and skills in the management of acute paediatric and neonatal emergencies.
4. To train and provide opportunities for the trainees to acquire and improve communication skills with patients, families, colleagues and other allied health professionals as well as in academic presentations and at medical meetings.
5. Developing trainees who are able to evaluate and make decisions in clinical situations even with limited resources taking into consideration social and ethical issues.
6. To train the trainees to acquire the knowledge and skills of conducting clinical research.
7. To inculcate proper professional attitudes towards their work, their patients and families, and colleagues at work.
8. To train candidates in leadership and management skills

### **Entry Requirements**

The requirements for admission as a candidate for the programme are as follows:-

1. Possess a medical degree (M.D., M.B.B.S., M.B.Ch.B) or equivalent qualifications from universities recognized by the Malaysian Medical Council (MMC).
2. Registered for medical practice by the Malaysian Medical Council (MMC) under the latest Medical (Amendment) Act and Medical Regulations. The candidates must have at least one-year clinical experience after full registration approved by the MMC.
3. The candidate must pass the Malaysian Paediatric Entrance Examination which is valid for 3 years, or MRCPCH part 1b or 2a.

### **Duration of Study**

1. The duration of study will be four (4) full years as a full time student.
2. The maximum duration of study shall not exceed seven (7) years.

## STRUCTURE OF THE MASTER OF MEDICINE (PAEDIATRICS) PROGRAMME

<b>Year 1</b>	<ul style="list-style-type: none"><li>• Rotations in General Paediatrics</li><li>• Neonatology</li><li>•</li></ul>
<b>Year 2 &amp; 3</b>	<ul style="list-style-type: none"><li>• General Paediatrics / Subspecialty Rotation</li><li>• Initial preparation of Research Project</li></ul>
<b>Year 4</b>	<ul style="list-style-type: none"><li>• Function as a registrar/ junior specialist in General Paediatrics and Neonatology</li><li>• Subspecialty rotation / Elective</li><li>• Continuation of Research Project</li><li>• Presentation and submission of Research Project</li></ul>

The course comprises of a programme of advanced study and training under supervision over a period of not less than four years, divided into:

### **Year 1**

Year 1 comprises the study of basic medical sciences, general paediatrics, child health and nutrition, neonatal care and acquisition of basic clinical skills in paediatrics. During the first year, students are also expected to familiarize themselves with the diagnosis and management of common paediatric conditions. Candidates will undergo clinical clerkships under supervision. Candidates should use the syllabus guide provided in the manual for self-study.

**Candidates must have attended** the Neonatal Resuscitation Programme (NRP)

### **Year 2 and 3**

The 2<sup>nd</sup> and 3<sup>rd</sup> year comprises of training in different disciplines of Paediatrics which includes General Paediatrics, Developmental Paediatrics, Paediatric Intensive Care, Community Paediatrics, Respiratory, Gastroenterology & Hepatology, Cardiology, Haematology and Oncology, Immunology and Infectious Diseases, Metabolic Diseases, Endocrinology, Genetics, Neurology, Nephrology, Neonatology and Adolescent Paediatrics. The general objective is to enable students to acquire knowledge, skills and attitudes appropriate for the management of patients in the various paediatric disciplines which will be useful in their general paediatric practice.

The candidate is also required to do a research project, starting with literature search, followed by the study proposal, application for appropriate funding, getting ethical committee approval and reporting on the progress of the project to the supervisor and final presentation to the department at the scheduled time.

### **Year 4**

Year 4 consists of further advanced training in paediatrics. The trainee who has passed the Part II Examination and completed 3 years of clinical training is expected to function more independently under the supervision of the lecturer/consultant.

#### **Within 4 years of enrollment, the candidate has to :**

1. Be a Paediatric Advanced Life Support (PALS) or Advanced Paediatric Life Support (APLS) provider
2. Be a NRP trainer
3. Attend a Basic Statistics and research methodology course (organized by the respective universities)
4. Attend a Good Clinical Practice course (organized by the respective university or Clinical Research Centre [CRC] Malaysia)

#### **Within 4 years of enrollment, the candidate is recommended to attend the following courses:**

1. Communication
2. Bioethics
3. Scientific writing

## **SUPERVISION AND ROLE OF THE SUPERVISOR**

Supervision is the dynamic process in which the supervisor encourages and participates in the development and training of the candidate. Supervision is fundamental to the educational process and is imperative in the open learning programme.

The two major roles of supervision are:

1. Objective evaluation of candidate's performance using appropriate methods of assessment, and
2. Establishing a relationship that will help the candidate to be independent learners and highly motivated individuals.

### **Supervisors**

#### **Educational Supervisor**

Educational supervisors will supervise the candidate through the course until graduation. These are lecturers from the Department of Paediatrics of the respective university and specialists from the Ministry of Health.

The educational supervisor is expected to:

- be a mentor/academic advisor to the candidate in matters pertaining to academic performance
- be a liaison officer between the candidate, the HOD and clinical supervisors
- advise the candidate regarding career development
- participate in programme evaluation
- help the candidate plan and complete the dissertation
- encourage and assist the candidate to write papers and attend seminars/conferences
- monitor completion of formative assessments

#### **Clinical Supervisor**

A clinical supervisor is a paediatrician whom the candidate is working with during the 3-monthly clinical rotations. The clinical supervisor plays a major role in the supervision of the candidate's clinical training. The clinical supervisor is expected to:

- evaluate the candidate using the overall supervisor's report (OSR)
- supervise the candidate's clinical work
- ensure that the candidate keeps up with the literature, attends hospital teaching activities (e.g. CPC) and maintains a professional attitude toward patients
- conduct formative assessments

Candidates are expected to approach their supervisors for their respective assessments

## ASSESSMENT AND EXAMINATIONS

### 1. FORMATIVE ASSESSMENT

Candidates must keep a portfolio as evidence of their formative assessment. All documentation of the formative assessment **MUST BE** submitted to the respective university **every 3 months**, within 1 month after completion of the rotation. Candidates failing to submit the formative assessments within the allocated time, will not be eligible to sit for exams and/or graduate from the programme.

#### 1.1 Overall Supervisor's report (OSR)

OSR is a report detailing or appraising the candidate's performance throughout each clinical posting. It should be filled out by the respective clinical supervisor or any specialist/consultant within the same team. Candidate must obtain a minimum of satisfactory grade in the overall clinical competency.

**OSR must be submitted every 3 months and candidates are expected to get feedback from the clinical supervisor on their performance.**

*Appendix 2: Format for overall supervisor's report*

#### 1.2 Case-based Discussions (CbD)

The assessment is candidate-driven. **A case-based discussion is done at least once every 3-month posting.** The candidate must submit at least one satisfactory CbD per posting.

*Appendix 3: Format for Case-based Discussions*

#### 1.3 Mini Clinical Evaluation Exercise (Mini CEX)

The assessment is candidate-driven. **A Mini CEX is done at least once every 3-month posting.**

The candidate must submit at least one satisfactory Mini CEX per posting.

*Appendix 4: Format for Mini CEX*

#### 1.4 Directly Observed Procedural Skills (DOPS)

DOPS are instrument to assess competence in practical procedures. **It should be assessed by the respective clinical supervisor.** Please refer to Appendix 5 for the DOPS list.

*Appendix 5: Format for DOPS*

#### 1.5 Sheffield Instrument for Letters (SAIL)

SAIL is an assessment method to review quality of letter writing of each candidate. The candidate are encouraged to **submit one SAIL** every 3 months.

*Appendix 6: Format for SAIL*



## 1.6 Research project proposal

Candidates have to prepare and present their research proposal to the department. The research proposal should be approved by the department before submission to the institutional research and ethics committee. Approval may be required at both the National and University level.

## 1.7 Portfolio

A candidate **MUST** keep a portfolio of his/her training from the beginning of year 1. This portfolio should comprise the documentation of all the work-based assessments, courses attended and other training-related activities.

## 2. SUMMATIVE ASSESSMENT

### 2.1 Examinations

Candidates must apply to sit for the examination, to the Paediatric Department of the respective university before:

- 30<sup>st</sup> June for the October/November or
- 31<sup>st</sup> December for the April/May exam the following year.

Failure to do so may result in barring of the candidate from sitting for the respective examination.

#### 2.1.1 Eligibility to sit for examinations

##### Part I Examination

- Satisfactory overall supervisors' reports (OSR) from at least 75% of postings prior to the examination
- At least ONE satisfactory CbD from each posting or 3-monthly training prior to the examination
- At least ONE satisfactory Mini CEX from each posting or 3-monthly training prior to the examination
- At least ONE satisfactory SAIL
- Completed TEN satisfactory Directly Observed Procedures (DOPS)
- The first attempt of the Part 1 examination can only be taken by the end of the first year of the programme, and should not be taken later than two years after enrolment into the programme.

##### Part II Examination

- Satisfactory overall supervisors' reports (OSR) from at least 75% of postings prior to the examination
- At least ONE satisfactory CbD from each posting or 3-monthly training prior to the examination
- At least ONE satisfactory Mini CEX from each posting or 3-monthly training prior to the examination
- At least ONE satisfactory SAIL from each posting or 3-monthly training prior to the examination
- Completed FIFTEEN **cumulative** DOPS satisfactorily, prior to the examination
- Written certification from the Head of Department/coordinator responsible for the programme that confirms that he/she has satisfactorily completed the prescribed training under supervision.
- Submitted portfolio not later than one month before the examination.
- The Part II Examination can be taken only after passing the Part I Examination.

- The first attempt should not later than 4 years into the programme.

[Repeat assessments are allowed for CbDs and mini-CEX to achieve the satisfactory number]

**MASTER OF MEDICINE (PAEDIATRICS) EXAMINATION (CONJOINED)**

**3.1. Examination Format**

**A. Part I Examination (Conjoined)**

- The examination is usually held at the end of the 1<sup>st</sup> academic year. Another examination will be held 6 months later for those who do not satisfy the examination rules and regulations.
- The Part I Examination consists of a theory paper which is divided into Paper 1 and Paper 2.

Paper	Question type	Number of Questions	Marks
1	Multiple choice questions (MCQ)*	20	100
	One Best Answer (OBA)	20	100
	Extended Matching Item (EMI)	20	100
2	Long Modified Essay Question (MEQ)	2 (50 marks each)	100
	Short Modified Essay Question (MEQ)	6 (25 marks each)	150
	Slides	10 (5 marks each)	50
<b>Total Marks</b>			<b>600</b>

\* There is NO negative marking for the MCQ

## B. Part II Examination (conjoined)

- The Part II Examination will be held twice a year, around April/May and October/November.
- Part II Examination consists of :

Examination Type/Station	Number of cases
Classical Long Case	1
Observed Long Case	1
Short Cases	5
Communication	1
Emergency Paediatrics	1

### 4.1. Criteria for Passing

#### Part I

To pass the Part I examination the candidate has to obtain a pass mark that has been agreed by members of the Standard Setting Panel .

#### Part II

A candidate is deemed to have passed the Part II examination if the total marks is  $\geq 100$  AND pass one long case AND pass at least 3 short cases.

Allocation of Marks For Each Clinical Station*	
i) Clear pass	12
ii) Pass	10
iii) Fail	8
iv) Clear Fail	4

\* Except for the classical long case: pass for the classical long case is  $\geq 20$  marks.

An examination board will be appointed according to the University Laws presently available.

## **RESEARCH PROJECT**

The objective of the research project is to introduce the candidate to research methodology, data analysis and journal writing.

Each candidate needs to undertake a research project approved by the respective university. The project must be conducted according to guidelines approved by the respective university. All candidates are encouraged to discuss with their supervisors early concerning starting a research project. The research report may be written up as a journal manuscript or dissertation book.

To obtain a **PASS**, the dissertation book or article must be submitted and examined according to the rules and regulations of the respective university.

### **5.1 Repeating an Examination**

#### **Part I Re-Examination**

- To re-sit the Part I examination, the candidate needs to complete the required formative assessments satisfactorily
- The candidate must pass Part I Examination within 4 years in the programme, failing which, the candidate shall not be permitted to continue the programme

#### **Part II Re-Examination**

- To re-sit the Part II examination, the candidate needs to complete the required formative assessments satisfactorily
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- A candidate who has failed the Part II examination may be permitted to sit for the examination at 6 monthly intervals.
- There are no limits to the number of attempts for Part II examination, but the total duration of the course must not exceed 7 years.
- The Part II Examination should be completed within 5 years after passing Part I.

## **TERMINATION FROM PROGRAMME**

A candidate at **any time** prevented from continuing with the course at the recommendation of Department, Faculty and after approval of the Senate of the respective university if the Department and Faculty find any of the following issues:

- i. the candidate is unable to fulfill the requirements of the course
- ii. formative assessments are deemed unsatisfactory
- iii. the candidate has broken university rule
- iv. the candidate fails to show improvement, after at least 2 warning letters and counselling sessions
- v. the candidate has been proven to have committed a malpractice or a crime
- vi. the candidate has not registered at the beginning of each annual session and without written approval of the Dean of the respective university
- vii. the candidate who failed to pass the Part I examination by FOUR years into the programme
- viii. the candidate who failed to fulfill the exit criteria within SEVEN years

## **AWARD OF DEGREE**

The degree of **Master of Medicine (Paediatrics) / Doctor of Paediatrics / Master of Paediatrics** will be awarded to the candidate who has:

1. Fulfilled all the requirements of this programme:
  - (a) Training
    - Satisfactory overall supervisors' reports (OSR) from at least 75% of postings
    - At least ONE satisfactory CbD from each posting or 3-monthly training
    - At least ONE satisfactory Mini CEX from each posting or 3-monthly training
    - At least one satisfactory SAIL from each posting or 3-monthly training (excluding the first year)
    - Completed ALL DOPS
  - (b) Examination
    - PASS Part I and Part II examinations
  - (c) Research Component
    - PASS Research Project
2. Approved to be awarded this degree by the Examination Board and approved by the Faculty and Senate of the respective university
3. Paid all fees due to the respective university including all other additional fees that the candidates may have incurred

## **THE OPEN SYSTEM PROGRAMME**

Under this existing system, a candidate will be trained in Paediatrics for 2 years in a university hospital and another 2 years in an accredited hospital under the Ministry of Health.

**List of Accredited Hospital as of June 2016 : Appendix 7**

## Appendix I

### STAGES FOR PREPARATION OF RESEARCH PROJECT BY CANDIDATES

No.	Stage of Preparation
1.	Literature search and review.
2.	Finalized objective, methodology, and survey forms and questionnaires preparation.
3.	Preliminary oral presentation to Department with hard copy of 1-4.
4.	Ethics Committee request and clearance.
5.	Request for funding.
6.	Data collection.
7.	Results Tabulation and analysis.
8.	Writing, discussion and presentation to Supervisor with a sample in hard copy.
9.	Oral presentation and defending of research project to panel of Internal Examiners (with draft hard copy. Please provide a copy to Head of Department 1 week prior to presentation and copies of slides to panel.)
10.	Corrections and submission to supervisor (draft hard copy)
11.	Binding of hard copy.
12.	Submission of final copy (bound) to the Department.
13.	Examiners Board Meeting (i.e. corrected unbound/bound copy)



## STUDY GUIDE

### A. Year 1

#### 1. Cardiology

Basic Knowledge	Clinical and technical skills
<ul style="list-style-type: none"><li>• Anatomy and physiology of foetal circulation</li><li>• Circulatory changes at birth in health and disease</li><li>• Variation of blood pressure with age</li><li>• Conducting system of the heart and its relation to ECG</li><li>• Recognise the changes on the ECG from birth to adolescence</li><li>• Presentation of cardiac failure in children and infants</li><li>• Pharmacology of drugs used in the treatment of heart failure</li><li>• Recognition and management of acute cardiopulmonary arrest</li><li>• Anatomy, diagnosis, functional consequences and complications of common congenital heart defects (VSD, ASD, PDA, Tetralogy of Fallot)</li><li>• Rheumatic fever and rheumatic heart disease</li><li>• Diagnosis and management of infective endocarditis</li><li>• Indications for bacterial endocarditis prophylaxis and knowledge of an appropriate regime</li><li>• Diagnosis and management of supraventricular tachycardia</li><li>• Diagnosis and aetiology of hypertension</li><li>• Pharmacology of anti-hypertensives</li><li>• Kawasaki disease</li></ul>	<ul style="list-style-type: none"><li>• Perform cardiovascular examination</li><li>• Differentiate pathological from innocent murmurs</li><li>• Cardiopulmonary resuscitation of the infant and child</li><li>• Measure and interpret blood pressure at different ages</li><li>• Interpretation of chest radiographs, including pulmonary vascularity and cardiac size</li><li>• Interpretation of ECGs</li><li>• Differentiate cardiac and pulmonary causes of respiratory distress and cyanosis in the newborn</li></ul>

## 2. Clinical Pharmacology and Therapeutics

Basic Knowledge	Clinical and technical skills
<ul style="list-style-type: none"> <li>• Knowledge of therapeutic drug monitoring</li> <li>• Principles of pharmacodynamics and kinetics</li> </ul>	<ul style="list-style-type: none"> <li>• Ability to write correct and legible prescriptions</li> <li>• Preparation and administration of intravenous injections and infusions</li> <li>• Calculation of drug dosage according to weight and surface area</li> </ul>

## 3. Developmental Paediatrics

Basic Knowledge	Clinical and technical skills
<ul style="list-style-type: none"> <li>• Normal development including gross motor, fine motor, speech and language, emotional, cognitive: normal variation and deviation</li> <li>• Normal visual and hearing development</li> <li>• Tests of vision and hearing at different ages</li> <li>• Recognition of strabismus in children</li> <li>• Influences of genetic and environmental factors on development</li> <li>• Autism and autistic spectrum disorders</li> </ul>	<ul style="list-style-type: none"> <li>• Perform developmental assessment</li> <li>• Able to recognise and elicit primitive and secondary reflexes</li> </ul>

## 4. Endocrinology

Basic Knowledge	Clinical and technical skills
<ul style="list-style-type: none"> <li>• Synthesis, transport, biochemical actions and control of hormones</li> <li>• Development and physiology of the thyroid gland</li> <li>• Aetiology of goitre</li> <li>• Diagnosis and management of hypothyroidism</li> <li>• Physiology of sex organ development</li> <li>• Physiology of the adrenal glands</li> </ul>	<ul style="list-style-type: none"> <li>• Perform examination of the neck and thyroid gland</li> <li>• Recognise the signs of hyperthyroidism</li> <li>• Use of glucometer</li> </ul>

<ul style="list-style-type: none"> <li>• Vitamin D and calcium metabolism</li> <li>• Diagnosis and management of hypocalcaemia and hypercalcaemia</li> <li>• Glucose metabolism</li> <li>• Aetiology of hypoglycaemia</li> <li>• Pathophysiology of diabetic ketoacidosis</li> <li>• Hypothalamic-pituitary axis (including the physiology of growth hormone and IGF)</li> <li>• Factors determining physical growth</li> <li>• Physiology of normal puberty</li> </ul>	
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5. Gastroenterology and Hepatology

Basic Knowledge	Clinical and technical skills
<ul style="list-style-type: none"> <li>• The relationship of abnormal embryogenesis to clinical disorders eg diaphragmatic hernia, malrotation and atresias</li> <li>• Digestion and absorption of protein, carbohydrate and fat</li> <li>• Metabolism of bilirubin and causes of jaundice</li> <li>• Causes and pathophysiology of liver failure</li> <li>• Anatomy of the portal system in understanding the aetiology and signs of portal hypertension</li> <li>• Common manifestations of gastrointestinal disease in paediatrics (including vomiting, diarrhoea, gastrointestinal bleeding, abdominal pain)</li> <li>• Causes, pathophysiology and management of acute gastroenteritis and its complications, including secondary lactose intolerance</li> <li>• Causes, pathophysiology and management of chronic diarrhoea</li> <li>• Hirschsprung disease and causes of constipation</li> <li>• Diagnosis and management of pyloric stenosis, intussusceptions and other</li> </ul>	<ul style="list-style-type: none"> <li>• Perform abdominal examination</li> <li>• Assessment of dehydration</li> <li>• Planning oral and intravenous fluid therapy</li> <li>• Interpretation of investigations in paediatric gastroenterology and hepatology</li> </ul>

<p>causes of intestinal obstruction</p> <ul style="list-style-type: none"> <li>• Tests available for assessing gastrointestinal and hepatic disease</li> </ul>	
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## 6. Clinical Genetics and Congenital Defects

Basic Knowledge	Clinical and technical skills
<ul style="list-style-type: none"> <li>• Basic genetics (chromosome structure and function, replication in meiosis and mitosis, protein transcription)</li> <li>• Basics of genetic disorders and mode of inheritance</li> <li>• Chromosomal abnormalities eg Down, Patau and Edward syndrome</li> <li>• Clinical and nutritional importance of major metabolic pathways eg carbohydrate, protein and fat metabolism</li> </ul>	<ul style="list-style-type: none"> <li>• Assessment of an infant or child with dysmorphic features</li> </ul>

## 7. Genito-urinary system

Basic Knowledge	Clinical and technical skills
<ul style="list-style-type: none"> <li>• Changes in renal physiology from newborn to adult</li> <li>• Physiology of water and electrolyte balance</li> <li>• Management of water and electrolyte imbalance</li> <li>• Requirements for fluid and electrolytes in health and disease</li> <li>• Understanding acid-base balance in health and disease</li> <li>• Urinary tract infection and reflux nephropathy</li> <li>• Diagnosis, pathogenesis and management of nephrotic syndrome including indications and long term complications of steroid use</li> <li>• Diagnosis, pathogenesis and management</li> </ul>	<ul style="list-style-type: none"> <li>• Examination of the kidneys, bladder and genitalia</li> <li>• Obtain urine by appropriate techniques including suprapubic tap</li> <li>• Urinary catheterisation</li> <li>• Interpretation of urinalysis results</li> <li>• Understand the use and limitations of urine dipstick</li> <li>• Interpretation of electrolyte and blood gas results</li> </ul>

<p>of acute postinfectious glomerulonephritis</p> <ul style="list-style-type: none"> <li>• Normal bladder innervations in understanding mechanisms of neurogenic bladder</li> <li>• Causes and pathophysiology of acute and chronic renal failure</li> <li>• The relationship of abnormal embryogenesis to clinical disorders</li> <li>• Understanding renal function tests</li> </ul>	
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## 8. Growth and maturation

Basic Knowledge	Clinical and technical skills
<ul style="list-style-type: none"> <li>• Normal growth – physical and endocrinological changes</li> <li>• Influence of genetic, prenatal and postnatal (including environmental) factors on growth</li> <li>• Causes, diagnosis and management of failure to thrive</li> <li>• Physical and endocrinological changes of normal puberty</li> <li>• Measuring equipment for growth</li> <li>• bone age as a measure of physical maturity</li> </ul>	<ul style="list-style-type: none"> <li>• Accurate measurement of height, length, weight, head circumference, arm span and upper/lower segment ratio</li> <li>• Plotting and interpretation of growth charts</li> <li>• Assessment of Tanner staging of puberty</li> </ul>

## 9. Haematology

Basic Knowledge	Clinical and technical skills
<ul style="list-style-type: none"> <li>• Development, structure and function of formed elements of the blood and blood forming organs</li> <li>• Changes in haemoglobin chain and peripheral blood elements after birth to adolescence</li> <li>• Metabolism of iron</li> <li>• Diagnosis, classification and basic</li> </ul>	<ul style="list-style-type: none"> <li>• Interpretation of FBC and differential counts</li> <li>• Recognition of common abnormalities of blood film</li> <li>• Assessment of haemostasis and interpretation of tests of haemostasis</li> <li>• Performing and interpreting Hess test</li> </ul>

<p>investigations for childhood anaemia</p> <ul style="list-style-type: none"> <li>• Thalassaemia and other haemoglobinopathies</li> <li>• Diagnosis and management of G6PD deficiency and understanding principles of newborn screening</li> <li>• Mechanisms of normal haemostasis (including platelet physiology) and clinical and laboratory diagnosis of bleeding disorders</li> <li>• Diagnosis of immune thrombocytopaenic purpura</li> </ul>	
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#### 10. Immunology and Allergy

Basic Knowledge	Clinical and technical skills
<ul style="list-style-type: none"> <li>• Normal body defence mechanisms at different ages</li> <li>• Understanding cellular and humoral immunity</li> <li>• Classification of hypersensitivity</li> <li>• Physiological basis and principles of immunization</li> </ul>	

#### 11. Infectious Diseases

Basic Knowledge	Clinical and technical skills
<ul style="list-style-type: none"> <li>• Classification of infectious diseases</li> <li>• Mechanisms of intrauterine infections</li> <li>• Classification and pharmacology of common antimicrobial agents</li> <li>• Rationale use of antimicrobials</li> <li>• Mechanisms of drug resistance</li> <li>• Role of immunisation in the prevention of infectious disease</li> <li>• Characteristics and side-effects of routine vaccines in the Ministry of Health expanded programme of immunisation</li> </ul>	<ul style="list-style-type: none"> <li>• Investigation for pyrexia of unknown origin</li> <li>• Early recognition and management of septic shock</li> <li>• Avoidance of nosocomial infection in everyday practice</li> <li>• Collection and safe handling of microbiological specimens</li> <li>• Perform Mantoux test</li> </ul>

<ul style="list-style-type: none"> <li>• Pathophysiology of septic shock</li> <li>• Diagnosis of common exanthems – measles, rubella, chickenpox</li> <li>• Understanding the transmission, presentation and management of common infections eg infectious diarrhoea, mumps, pertussis, tuberculosis, typhoid, hepatitis, poliomyelitis, dengue fever, malaria</li> <li>• Principles of prevention of nosocomial infections</li> <li>• Understanding the life-cycle, complications and treatment of common intestinal nematodes</li> </ul>	
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12. Musculoskeletal

Basic Knowledge	Clinical and technical skills
<ul style="list-style-type: none"> <li>• Clinical anatomy and physiology of bones and joints</li> <li>• Diagnosis and initial management of osteomyelitis and septic arthritis</li> <li>• Pharmacology of common anti-inflammatories and analgesics</li> <li>• Aetiology of arthritis in children</li> </ul>	<ul style="list-style-type: none"> <li>• Newborn hip examination</li> <li>• Examination of spine and joints</li> </ul>

13. Foetal and Neonatal medicine

Basic Knowledge	Clinical and technical skills
<ul style="list-style-type: none"> <li>• Physiological changes at birth including the foetal circulation and postnatal changes</li> <li>• Placental functions in health and disease</li> <li>• General principles of care of the newborn</li> <li>• Infant nutrition</li> <li>• Thermal neutral environment and temperature regulation</li> <li>• Fluid balance and therapy</li> <li>• Nutrition in sick infants</li> <li>• Problems of preterm and post-term</li> </ul>	<ul style="list-style-type: none"> <li>• History taking – use relevant sources to elicit history in order to understand problems of the newborn</li> <li>• Screening examination at delivery including the Apgar score</li> <li>• Detailed examination including assessment of growth, gestational age, behavioural and neurological state</li> <li>• Routine postnatal examination</li> <li>• Neonatal resuscitation</li> </ul>

<p>infants. LGA and SGA babies</p> <ul style="list-style-type: none"> <li>• Physiology of surfactant</li> <li>• Hyaline membrane disease and other causes of respiratory distress</li> <li>• Meconium aspiration</li> <li>• Neonatal jaundice</li> <li>• Hypoglycaemia</li> <li>• Neonatal infections</li> <li>• Fits in newborns</li> <li>• Haemorrhagic disease of the newborn</li> <li>• Perinatal asphyxia</li> <li>• Apnoea</li> <li>• Clinical anatomy of the scalp and brachial plexus in relation to common birth injuries</li> <li>• Pharmacology of drugs used in neonatal and paediatric resuscitation</li> <li>• Transport of the sick newborn</li> </ul>	<ul style="list-style-type: none"> <li>• Venepuncture and cannulation</li> <li>• Umbilical venous cannulation</li> <li>• Arterial access: umbilical and peripheral</li> <li>• Lumbar puncture</li> <li>• Passing nasogastric tube and orogastric tube to exclude choanal atresia and trachea-oesophageal fistula respectively</li> <li>• Exchange transfusion</li> </ul>
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#### 14. Neurology

Basic Knowledge	Clinical and technical skills
<ul style="list-style-type: none"> <li>• Basic clinical neuroanatomy</li> <li>• Development of the CNS in relation to common congenital malformations</li> <li>• Circulation of CSF in health and disease</li> <li>• Aetiology and pathophysiology of raised intracranial pressure</li> <li>• Classification of seizures</li> <li>• Basic principles of neurophysiological investigations (EEG, EMG, nerve conduction)</li> <li>• Diagnosis, pathogenesis and management of meningitis and encephalitis</li> <li>• Recognition and management of febrile convulsions</li> <li>• Aetiology of mental retardation</li> <li>• Diagnosis of common congenital malformations: spina bifida, hydrocephalus and microcephaly</li> <li>• Classification and diagnosis of cerebral palsy</li> </ul>	<ul style="list-style-type: none"> <li>• Perform neurological assessment on infants and children</li> <li>• Differentiation between upper and lower motor neuron lesions</li> <li>• Recognition of cerebellar and extrapyramidal signs</li> <li>• Perform lumbar puncture</li> <li>• Interpretation of CSF results</li> </ul>



<ul style="list-style-type: none"> <li>• Neurocutaneous diseases and syndromes</li> <li>• Classification of seizures and epilepsy syndromes</li> <li>• Pharmacology of anti-epileptic drugs</li> <li>• Parainfectious and inflammatory disorders of immunological origin egGuillainBarre syndrome</li> <li>• Neuromuscular diseases</li> </ul>	
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### 15. Nutrition

Basic Knowledge	Clinical and technical skills
<ul style="list-style-type: none"> <li>• Normal nutritional requirements in infants and children</li> <li>• Physiology of lactation</li> <li>• Infant feeding including breast and formula feeding and weaning</li> <li>• Understanding the pathophysiology and management of protein-energy malnutrition</li> <li>• Signs and symptoms of deficiencies of specific nutrients and vitamins</li> <li>• Knowledge of various types of milk, liquid food preparations, nutritional supplements</li> </ul>	<ul style="list-style-type: none"> <li>• Take a history to estimate intake of major nutrients</li> <li>• Assessment of nutritional state of infants and children</li> <li>• Advise on health eating for normal children</li> </ul>

### 16. Oncology

Basic Knowledge	Clinical and technical skills
<ul style="list-style-type: none"> <li>• Characteristics of common malignancies of childhood (leukaemia, neuroblastoma, Wilm's tumour)</li> <li>• Principles of cancer therapy</li> <li>• Tumour lysis syndrome – pathophysiology and management</li> </ul>	<ul style="list-style-type: none"> <li>• Examination of lymph nodes and masses</li> </ul>

## 17. Respiratory Medicine

Basic Knowledge	Clinical and technical skills
<ul style="list-style-type: none"> <li>• Pulmonary physiology relevant to clinical practice: ventilation, perfusion, gas exchange and transport, haemoglobin dissociation curve, lung volumes, compliance, blood gas physiology</li> <li>• Mechanisms and causes of dyspnoea</li> <li>• Development of the lung</li> <li>• Differences between the infant and adult respiratory system</li> <li>• Central and peripheral control of respiration</li> <li>• Normal respiratory defences</li> <li>• Recognition and causes of respiratory failure</li> <li>• Mechanisms of respiratory symptoms and signs: cough reflex, wheezing, recession, stridor, grunting</li> <li>• Diagnosis and management of upper respiratory tract infections: rhinitis, pharyngitis, tonsillitis, otitis media, sinusitis, acute laryngotracheobronchitis, epiglottitis</li> <li>• Diagnosis and management of Lower respiratory tract infections: bronchiolitis, pneumonia</li> <li>• Causes of wheezing and stridor in infants and children</li> <li>• Diagnosis and management of asthma</li> <li>• Pharmacology of drugs used in treatment of asthma</li> <li>• Obstructive sleep apnoea</li> <li>• Chronic cough: diagnosis and management</li> <li>• CSLD/Bronchiectasis: diagnosis and management</li> </ul>	<ul style="list-style-type: none"> <li>• Ability to examine the respiratory system including the ear, nose and throat</li> <li>• Familiarity with use of peak flow meter and various inhaler devices</li> <li>• Assessment and recognition of respiratory failure</li> <li>• Interpret results of chest radiograph a, blood gases and oximetry</li> <li>• Obtain cultures: throat, nasopharyngeal and pernasal swab</li> <li>• Perform thoracocentesis for pleural effusion and pneumothorax</li> </ul>

## 18. Research and Statistics

Basic Knowledge	Clinical and technical skills
<ul style="list-style-type: none"> <li>• Basic medical statistics and tests of hypothesis</li> </ul>	

19. Skin and related tissues

Basic Knowledge	Clinical and technical skills
<ul style="list-style-type: none"> <li>• Common skin lesions in the newborn</li> <li>• Diagnosis and management of common skin problems eg eczema, seborrhoeic dermatitis, impetigo, napkin rash, scabies and pediculosis</li> </ul>	<ul style="list-style-type: none"> <li>• Ability to describe dermatological abnormalities in terms of morphology, configuration and distribution</li> </ul>

**B. Year 2 and 3**

Candidates will rotate through subspeciality disciplines during these 2 years besides continuing with training in general paediatrics and neonatology. During these 2 years, the candidate should:

- understand the natural history, diagnosis and management of childhood diseases
- be able to take a thorough history, perform a complete physical examination, request relevant investigations, formulate the provisional and differential diagnoses and manage the patient appropriately
- be able to perform common diagnostic and therapeutic procedures and interpret the results of investigations: understanding the indications, contraindications, limitations and possible contraindications
- be able to appreciate the effect of disease on physical, mental and social well-being of the patient
- be able to plan in consultation with senior colleagues, the further management of the patient in a multidisciplinary setting
- be able to apply the rules of evidence to clinical, investigational and published data in order to determine their applicability and validity in reviewing various aspects of disease management.

### **C. Year 4**

Candidates function as a junior specialist/ registrar during their final year, assisting the consultant in management of the patients. During this year, the candidate should:

- be a role model in the teaching and training of junior doctors and other health personnel
- assist in performing the managerial duties of the ward
- apply rules of evidence to clinical, investigational and published data, in conducting research, scientific writing and audit
- identify areas of deficiency in their performance and to rectify these by utilizing appropriate clinical and educational resources

## **RECOMMENDED READING LIST FOR THE MASTER OF MEDICINE (PAEDIATRICS) PROGRAMME**

The following list of book titles is by no means exhaustive but is a useful list of Paediatric books for the Paediatric Postgraduate Masters' Student. The list includes books that cover both General Paediatrics Overview and various Paediatric Subspecialty References. These books are available in either the Paediatric Department Library or the main Medical Library. Books titles with the asterisk \* indicate recommended reading material for the Master of Medicine (Paediatrics) Programme.

Some of the books below have newer editions

### **Standard Paediatric Texts:**

1. ***Forfar and Arneil's Textbook of Paediatrics.*** Neil McIntosh *et al* (eds). Churchill Livingstone; 7<sup>th</sup> edition, 2008.
2. ***Nelson Textbook of Paediatrics.*** Robert M Kliegman *et al* (eds). WB Saunders; 19<sup>th</sup> edition, 2011.
3. ***Community Paediatrics.*** Colin Thomson, Leon Polnay (eds). Churchill Livingstone; 3<sup>rd</sup> edition, 2002. (This book is concerned with the interrelationship between environment and health and its impact on children and adolescents. Recommended for beginners).
4. ***Pediatric Clinical Skills.*** Richard B Goldbloom. Saunders. 4<sup>th</sup> edition, 2010.
5. ***Zitelli and Davis' Atlas of Pediatric Physical Diagnosis: Expert Consult.*** 6<sup>th</sup> edition. Elsevier, 2012
6. ***The Normal Child – Some Problems of the Early Years and Their Treatment.*** Illingsworth RS; 10<sup>th</sup> edition, 1992.

### **Colour Atlas for Paediatrics**

1. ***The Hospital for Sick Children: Atlas of Pediatrics.*** Ronald M Laxer (ed). Jaypee, 2005.
2. ***Atlas of Pediatric Physical Diagnosis.*** Basil J Zitelli & Holly W Davis. Mosby; 6<sup>th</sup> edition, 2012.
3. ***Smith's Recognizable Patterns of Human Malformation.*** Kenneth Jones. Saunders; 7<sup>th</sup> edition, 2013.

### **Paediatric Gastroenterology**

1. ***Pediatric Gastrointestinal Disease: Pathophysiology, Diagnosis, Management.*** W Allan Walker *et al* (eds). BC Decker; 5<sup>th</sup> edition, 2008.

### Paediatric Hepatology

1. ***Diseases of the Liver and Biliary System in Children***. DA Kelly (ed). Blackwell Publishing; 3<sup>rd</sup> Edition, 2009.
2. ***Liver Disease in Children***. Frederick Suchy *et al* (eds). Mosby; 4<sup>th</sup> edition, 2014.

### Paediatric Nutrition

1. ***Handbook of Pediatric Nutrition***. Patricia Samour. Jones and Barlett; 3<sup>rd</sup> edition, 2005.
2. ***Pediatric Nutrition Handbook***. American Academy of Pediatric Committee on Nutrition. 6<sup>th</sup> edition, 2009.

### Paediatric Neurology

1. ***Clinical Pediatric Neurology: A Signs and Symptoms Approach***. Gerald M Fenichel. Elsevier; 7<sup>th</sup> edition, 2013.
2. ***Paediatric Neurology: Principles and Practice, 2 Volume Set***. Kenneth Swaiman, Stephen Ashwal, Donna Ferrier (eds). Elsevier; 5<sup>th</sup> edition, 2012.

### Paediatric Cardiology

1. ***Heart Disease in Paediatrics***. Jordon SC and Scott O. Butterworth; 3<sup>rd</sup> edition, 1994 (This is a highly readable book but no new edition available).
2. ***Nadas' Paediatric Cardiology***. Donald Flyer (ed). WB Saunders; 2<sup>nd</sup> edition, 2006.
3. ***How to read Paediatric ECGs***. Myung K Park & Warren G Guntheroth. Elsevier; 4<sup>th</sup> edition, 2006.
4. ***Cardiac Arrhythmias: Practical Notes on Interpretation and Treatment***. David H Bennett. Butterworth; 8<sup>th</sup> Ed, 2013.
5. ***Pediatric Cardiology for Practitioners***. Myung K Park. Mosby; 5<sup>th</sup> edition, 2007.

6. ***Feigenbaum's Echocardiology***. Harvey Feigenbaum *et al* (eds). Lippincott Williams & Wilkins; 7<sup>th</sup>ed 2009.
7. ***Moss & Adams – Heart Diseases in Infants, Children and Adolescents***. Hugh D Aleen, eds. Lippincott Williams & Wilkins; 8<sup>th</sup> edition, 2012.

### **Paediatric Infectious Disease**

1. ***Red Book Atlas of Pediatric Infectious Diseases***. Carol Baker. American Academy of Pediatrics; 2<sup>nd</sup> edition, 2007.
2. ***Principles and Practice of Pediatric Infectious Disease: Text with CD-ROM (Principles and Practice of Pediatric Infectious Diseases)***. Sarah Long, Larry K Pickering *et al* (eds). WB Saunders & Elsevier; 3<sup>rd</sup> edition, 2009.
3. ***Infectious Diseases of the Fetus and the Newborn Infant***. Jack S Remington, Jerome Klein. Elsevier Saunders; 7<sup>th</sup> edition, 2010.
4. ***Pediatric Infectious Diseases – Requisites***. Jeffrey Bergelson, Theoklis Zaoutis, Samir S. Shah (eds). Mosby; 2008.
5. ***MIMS' Medical Microbiology***. Richard Goering, Dockrell Hazel, Mark Zuckerman (eds). Elsevier; 5<sup>th</sup> edition, 2012.
6. ***Introduction to Modern Virology***. NJ Dimmock, AJ Easton, KN Leppard. Blackwell Sciences; 6<sup>th</sup> edition, 2007.

### **Immunology & Vaccinology**

1. ***Malaysian Immunization Manual***. Lee EL & Choo KE. College of Paediatrics, Academy of Medicine Malaysia. 2<sup>nd</sup> edition, 2008.
2. ***Basic Immunology: Functions and Disorders of the Immune System***. Abul K Abbas, Andrew H Lichtman. Saunders; 3<sup>rd</sup> edition, 2010.
3. ***How the Immune System Works***. Lauren Sompayrac. Blackwell Publisher; 4<sup>th</sup> edition, 2012.

4. ***The Vaccine Handbook – A Practical Guide for Clinicians.*** Gary S Marshall, *et al* (eds). Lippincott Williams & Wilkins; 4<sup>th</sup> edition, 2012.

### **Accident & Emergency Paediatrics**

1. ***Pediatric Emergency Medicine – A comprehensive Study Guide.*** Strange GR, Ahrens WR, Lelyrelds & Schafermeyer, RW. McGraw Hill; 2<sup>nd</sup> edition, 2002.

### **Neonatology**

1. ***Fararoff & Martin's Neonatal & Perinatal Medicine.*** Richard Martin, Avry Fanaroff, *et al* (eds). Elsevier Mosby; 9<sup>th</sup> edition, 2010.
2. ***Textbook of Neonatology.*** JM Rennie & NRC Robertson. Elsevier; 5<sup>th</sup> edition, 2012.
3. ***A Manual of Neonatal Intensive Care.*** JM Rennie, NRC Robertson. Arnold International; 5<sup>th</sup> edition, 2013.

### **Paediatric Respiratory Medicine**

1. ***Kendig and Chernick's Disorders of the Respiratory Tract in Children.*** Victor Chernick, Robert W. Wilmott, Andrew Bush. Elsevier Sanders; 8<sup>th</sup> edition, 2012.
2. ***Pediatric Respiratory Medicine.*** Lynn Taussig, Louis I Landau. Mosby; 2<sup>nd</sup> edition, 2008.
3. ***Comprehensive Perinatal and Pediatric Respiratory Care.*** Kent Whitaker. Thomson; 4<sup>th</sup> edition, 2015.
4. ***Respiratory Physiology. The Essentials.*** John B. West. Lippincott, Williams and Wilkins; 9<sup>th</sup> Edition, 2012

### **Paediatric Intensive Care**

1. ***Rogers' Textbook of Pediatric Intensive Care.*** David G Nichols, *et al* (eds). Lippincott, Williams and Wilkins; 4<sup>th</sup> edition, 2008.

### **Paediatric Hematology and Oncology**



1. ***Principles and Practice of Pediatric Oncology.*** Pizzo P and Poplack D. Lippincott Williams & Wilkins; 6<sup>th</sup> edition, 2010.
2. ***Manual of Pediatric Hematology and Oncology.*** Philip Lanzkowsky. Elsevier Academic Press; 5<sup>th</sup> edition, 2010.
3. ***Hematology of Infancy and Childhood; volume 1 and II.*** Nathan and Oski. WB Saunders; 7<sup>th</sup> edition, 2008.
4. ***Colour Atlas of Paediatric Haematology.*** Ian M Hann, *et al* (eds). Oxford Medical Press; 1st edition, 1996.

### **Paediatric Nephrology**

1. ***Clinical Pediatric Nephrology.*** Kanwalkher, *et al* (eds). Informa; 2<sup>nd</sup> edition, 2006.
2. ***Pediatric Nephrology.*** Ellis D Avner, *et al* (eds). Lippincott Williams and Wilkins; 6<sup>th</sup> edition, 2009.

### **Paediatric Dermatology**

1. ***Color Textbook of Pediatric Dermatology: Text with CD-ROM.*** William L Weston, *et al* (eds). Mosby; 4<sup>th</sup> edition, 2007.
2. ***Hurwitz Clinical Pediatric Dermatology: A Textbook of Skin Disorders of Childhood and Adolescence.*** Amy S Paller, *et al* (eds). Mosby; 4<sup>th</sup> edition, 2011.

### **Paediatric Rheumatology**

1. ***Pediatric Rheumatology in Clinical Practice.*** Patricia Woo, *et al* (eds). Springer; 1<sup>st</sup> edition, 2007.
2. ***Textbook of Pediatric Rheumatology.*** James T Cassidy, *et al* (eds). Elsevier ; 6<sup>th</sup> edition, 2010.

### **Paediatric Endocrinology**

1. ***Pediatric Endocrinology: A Practical Clinical Guide.*** Sally Radovick and Margaret H Margaret Gillivray. Humana Press; 2<sup>nd</sup> edition, 2013

2. ***Brook's Clinical Paediatric Endocrinology.*** Brook CG, Hindermash P, Clayton. Wiley-Blackwell; P 6<sup>th</sup> edition 2009.

### **Medical Genetics**

1. ***Practical Genetic Counselling.*** Peter Harper. Edward Arnold Ltd; 7<sup>th</sup> edition, 2010.
2. ***Thompson & Thompson Genetics in Medicine.*** Robert Nussbaum, Roderick R. McInnes, Huntington F. Willard. Elsevier; 7<sup>th</sup> edition, 2007.
3. ***Smith's Recognizable Patterns Of Human Malformation.*** Kenneth L. Jones et al. Elsevier; 7<sup>th</sup> edition, 2013.

### **Inherited Metabolic Disorders**

1. ***Inborn Metabolic Diseases: Diagnosis and Treatment.*** John Fernandes, Jean-Marie-Saudubray, Georges van den Berghe, John H. Walter. Springer; 5<sup>th</sup> edition, 2011.
2. ***Physician's Guide to the Laboratory Diagnosis of Metabolic Diseases.*** N. Blau, M. Duran, M.E. Blaskovics, K.M. Gibson, C.R. Scriver. Springer; 2<sup>nd</sup> edition, 2004.

### **Medical Journals of Interest**

1. Archives of Diseases of Childhood
2. Journal of Pediatrics
3. Pediatrics
4. Journal of Paediatrics and Child Health
5. Paediatric Clinics of North America
6. Paediatric Infectious Disease Journal
7. Archives of Pediatrics and Adolescent Medicine
8. Developmental Medicine and Child Neurology
9. European Journal of Paediatrics
10. Annals of Tropical Paediatrics
11. Lancet
12. New England Journal of Medicine

13. Journal of Paediatrics Gastroenerology and Nutrition
14. Paediatric Respiratory Reviews

**Recommended Websites:**

1. Neonatology on the web
2. Medscape
3. Cochrane Library
4. BMJ Learning  
Uptodate
5. OMIM

## Appendix 2

# **OVERALL SUPERVISOR'S REPORT (OSR)**



**Masters of Medicine Conjoined Programme (UM, UKM, USM, UPM)  
Overall Supervisor's Report**

Trainee's Name																																					
Date of enrolment	d	d	/	m	m	/	y	y	y	y	Matric number																										
Phase of study											Hospital																										
Posting											Date of posting																										

Please mark the box which corresponds with your observations in each category. Please make judgment according to the criteria outlined and not according to your experience with other students under your supervision.

The behavior outlined in the first box in each category is the 'gold standard' by which the student should be judged. A tick here indicates excellent performance. Tick in other boxes indicate performance that is good, satisfactory, further improvement necessary (i.e. borderline), further improvement essential (i.e. weak) in descending order

**History**

- Excellent  Consistently elicit problem related data from patient and other relevant sources, stresses important points, well organise approach.
- Good  As above but less consistent.
- Satisfactory  As above but sometimes concentrates on data not related to the problem, sometimes omits to consult other sources, occasionally misses important information.
- Borderline  Approach not well organized, not always problem related, frequently misses important data.
- Weak  Approach not organized, frequently not problem related/wrongly elicit data, important data missed on most occasions

**Physical Examination**

- Excellent  Consistently elicits and interprets correctly all signs, techniques and organizational approach consistently good.
- Good  As above, but less consistent.
- Satisfactory  As above, sometimes misses important physical signs.
- Borderline  Approach technically imperfect and not very systematic: frequently misses important signs.
- Weak  Approach technically unacceptable and not systematic, important signs missed on most occasions.

**Investigations**

- Excellent  Consistently plans and interprets investigations appropriate to the problem with attention to specificity, reliability, patient safety and comfort, cost and, explain reasons for and nature of investigations to patients.
- Good  As above, but less consistent.
- Satisfactory  As above but occasionally requests investigations not appropriate to the problem and/or without attention to specificity, reliability, etc. sometimes misses important data.
- Borderline  Frequently requests investigations not appropriate to the problem and/or without attention to specificity, reliability, patient safety and misses important data.
- Weak  Consistently makes inappropriate decisions in ordering investigations, consistently misinterprets and/or misses important data.

<b>Diagnostic ability and reasoning</b>		
Excellent	<input type="checkbox"/>	Consistently makes careful reasoned deductions from available data (history, physical examination, investigations) to arrive at the appropriate decision
Good	<input type="checkbox"/>	As above, but less consistent.
Satisfactory	<input type="checkbox"/>	As above, but occasionally makes incorrect deductions. Most times able to give correct provisional diagnosis.
Borderline	<input type="checkbox"/>	Frequently does not follow a logical approach to deduction from available data, occasionally gives incorrect provisional diagnosis.
Weak	<input type="checkbox"/>	Illogical reasoning and deductions. Frequently makes incorrect diagnosis.
<b>Procedural skills</b>		
Excellent	<input type="checkbox"/>	Consistently carries out procedures with an appropriate level of technical skill and with due consideration to the patient.
Good	<input type="checkbox"/>	As above, but less consistent.
Satisfactory	<input type="checkbox"/>	As above, but not equally skilled in all manipulative tasks.
Borderline	<input type="checkbox"/>	Not skilled in most manipulative tasks, occasionally exhibits lack of consideration and/or care and attention to detail.
Weak	<input type="checkbox"/>	Serious lack of skill in a number of manipulative tasks, frequently exhibits lack of care and attention to detail, not considerate to the patients.
<b>Patient Management</b>		
Excellent	<input type="checkbox"/>	Consistently suggests appropriate management, exhibits awareness of the role and possible complications of the proposed intervention (e.g. adverse drug reaction, surgical morbidity), self-reliant and conscientious in approach, involves patients, family and community in management decision.
Good	<input type="checkbox"/>	As above, but less consistent.
Satisfactory	<input type="checkbox"/>	As above, but occasionally suggests inappropriate management.
Borderline	<input type="checkbox"/>	Shows some lack of awareness of role of proposed interventions and their possible complications, is unsure/not conscientious in implementing management.
Weak	<input type="checkbox"/>	Frequently makes inappropriate management decisions.
<b>Record Keeping</b>		
Excellent	<input type="checkbox"/>	Consistently records legibly and updates accurately patient's problems and management progress, with emphasis on own observations and examinations and provides regular informative summary of progress.
Good	<input type="checkbox"/>	As above, but less consistent.
Satisfactory	<input type="checkbox"/>	As above, but occasionally one or more aspects of record keeping inadequate.
Borderline	<input type="checkbox"/>	Records are frequently illegible, not up-to-date, inaccurate and poorly organized.
Weak	<input type="checkbox"/>	Records are frequently inadequate according to above criteria
<b>Knowledge</b>		
Excellent	<input type="checkbox"/>	Consistently applies appropriate knowledge of basic and clinical sciences to the solution of patient problems.
Good	<input type="checkbox"/>	As above, but less consistent.
Satisfactory	<input type="checkbox"/>	As above, but occasionally has gaps in knowledge and/or difficulty in application to patient problems. However makes effort to seek information.
Borderline	<input type="checkbox"/>	Inadequate knowledge and/or difficulty in application to patients' problems. Sometimes makes effort to seek information.
Weak	<input type="checkbox"/>	As in borderline, but lacks initiative in seeking information.
<b>Personal and Professional Attitudes</b>		
Excellent	<input type="checkbox"/>	Consistently manages own learning by asking questions and searching for answers (proactive): improves progress as a learner and as a future practitioner by seeking feedback and acting on the latter, and shows evidence of accepting responsibility, being caring, thorough, trustworthy, self-driven and respecting confidentiality.

Good	<input type="checkbox"/>	As above, but less consistent or as effectively.
Satisfactory	<input type="checkbox"/>	As above, but with occasional deficiencies in self-directed learning, self-monitoring and/or professional qualities as defined above.
Borderline	<input type="checkbox"/>	Frequently deficient in area as defined above.
Weak	<input type="checkbox"/>	Consistently deficient in areas defined above

<b>Communication skills</b>		
Excellent	<input type="checkbox"/>	Consistently communicates with patients and his/her family, listens, be sensitive to the needs of the patients and family comforts, gives equal priority to the patient/family and the illness: establishes and maintains professional relationship with patient; realizes that the patient's attitude to the doctor affects management and cooperation: is aware that owns personality affects patient's reaction/behavior: provides information accurately and clearly.
Good	<input type="checkbox"/>	As above, but less consistently or effectively.
Satisfactory	<input type="checkbox"/>	As above, but with occasional deficiency in communication skills as outlined above.
Borderline	<input type="checkbox"/>	Frequently deficient in communicating skills outlined above.
Weak	<input type="checkbox"/>	Consistently deficient in communicating skills outline above.

<b>Conduct with Other Professionals</b>		
Excellent	<input type="checkbox"/>	Consistently communicating/working with other professionals, is courteous, sensitive to needs of others: fulfils role in team appropriately by collaborating readily with others: provides clear information, instructions/advice to others: readily accepts reasonable advice/criticism from others.
Good	<input type="checkbox"/>	As above, but less consistently or effectively.
Satisfactory	<input type="checkbox"/>	As above, but with occasional deficiencies in the areas outlined above. .
Borderline	<input type="checkbox"/>	Frequently deficient in areas outlined above.
Weak	<input type="checkbox"/>	Consistently deficient in areas outlined above.

<b>Participation in Teaching-Learning Activities</b>						
	Excellent	Good	Satisfactory	Borderline	Weak	NA
1. Ward round	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Clinic	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Case presentation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Tutorial	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Journal read	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Mortality summary	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
*NA not applicable						

<b>Overall Clinical Competence</b>	
<input type="checkbox"/>	Excellent
<input type="checkbox"/>	Good
<input type="checkbox"/>	Satisfactory
<input type="checkbox"/>	Borderline
<input type="checkbox"/>	Weak





## Appendix 3

# **CASE-BASED DISCUSSION (CbD)**



\*U/C = Please mark this if you have not observed the behavior and therefore unable to comment.

In relation to **THIS CASE**, do you have any concerns about this trainee's knowledge base?

No concern       Serious concern       Minor concern       Unable to judge

Please document any concerns you have about this trainee's knowledge base:

In relation to **THIS CASE**, do you have any concern about this trainee integrity, ethical, personal and professional practice or any other areas not highlighted by the questions?

No concern       Serious concern       Minor concern       Unable to judge

Please document any concerns you have about this trainee's integrity, ethical, personal and professional practice or any other areas:

Please grade the area listed below using the given scale (1 -6)

- |                                                                                                                                                                              |  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| 1. On the basis of <b>THIS CASE</b> , how would you rate this trainee's overall clinical care for their stage of training                                                    |  |
| 2. On the basis of <b>THIS CASE</b> , how would you rate this trainee's overall clinical care in relation to the standard expected at confirmation of completion of training |  |

Scale

1. Unsafe
2. Below expectation
3. Borderline
4. Meets expectation
5. Above expectation
6. Well above expectation
7. Unable to comment

Is there anything especially good you wish to comment on?

Suggestions for development

Agreed action

Assessor's Name

MMC's Number

Assessor's position:

Consultant

Specialist

Number of previous Paediatric CBD observed by assessor with any trainee:

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
0	1	2	3	4	5	5-9	>9

What training have you had in the use of this assessment tool: Have read guidelines Face-to face   
Web/CD-Rom

Time taken for discussion (in minutes):

Time taken for feedback (in minutes):

Assessor's signature

Student's signature

## Appendix 4

# MINI CLINICAL EXAMINATION (MINI CEX)



## Masters of Medicine Conjoined Programme (UM, UKM, USM, UPM) Assessment by Mini CEX

Trainee's Name															
Date of enrolment	D	D	/	M	M	/	Y	Y	Y	Y	Matric Number				
Date of assessment	D	D	/	M	M	/	Y	Y	Y	Y	Student's MMC Number				
Phase of study										Posting					
Hospital															
Clinical Setting: <input type="checkbox"/> Neonates <input type="checkbox"/> In-patient <input type="checkbox"/> OPD <input type="checkbox"/> A&E <input type="checkbox"/> Acute Admission															
Clinical Problem Category: <input type="checkbox"/> Sepsis <input type="checkbox"/> CVS <input type="checkbox"/> Shock <input type="checkbox"/> Gastro <input type="checkbox"/> Neuro <input type="checkbox"/> Airway/Breathing															
<input type="checkbox"/> Behaviour/Developmental <input type="checkbox"/> Others (Please specify):															
New or follow up case: <input type="checkbox"/> New <input type="checkbox"/> Follow up															
If follow up, number of time patient seen before by trainee: <input type="checkbox"/> 0 <input type="checkbox"/> 1-4 <input type="checkbox"/> 5-9 <input type="checkbox"/> >10															
Focus of clinical encounter: <input type="checkbox"/> History <input type="checkbox"/> Diagnosis <input type="checkbox"/> Management <input type="checkbox"/> Explanation															
Complexity of case in relation to stage of trainee: <input type="checkbox"/> Low <input type="checkbox"/> Average <input type="checkbox"/> High															
Using the given scales, please grade the areas listed below:	Weak	Borderline	Satisfactory	Good	Excellent	*UC									
	1	2	3	4	5	6									
History taking	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>									
Communication skills with child/young person	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>									
Communication skills with parent/carer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>									
Examination	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>									
Clinical judgement	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>									
Initial management	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>									
Professionalism	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>									
Organisation/efficiency	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>									
Overall clinical care	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>									
*U/C = Please mark this if you have not observed the behavior and therefore unable to comment.															
Please address any concern or serious issues regarding the trainee via appropriate channels.															
Areas of strength:							Suggestions for development:								
Agreed Action:															
Assessor's Name															
MMC's Number										Assessor's position:	<input type="checkbox"/> Consultant	<input type="checkbox"/> Specialist			

Number of previous Paediatric Mini-CEX observed by assessor with any trainee:		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		0	1	2	3	4	5	5-9
What training have you had in the use of this assessment tool:		<input type="checkbox"/> Have read guidelines		<input type="checkbox"/> Face-to face		<input type="checkbox"/> Web/CD-rom		
Time taken for discussion (in minutes):		Time taken for feedback (in minutes):						
Assessor's signature		Trainee's signature						

## Appendix 5

# **DIRECTLY OBSERVED PROCEDURAL SKILLS (DOPS)**



## Masters of Medicine Conjoined Programme (UM, UKM, USM, UPM) Directly Observed Procedural Skills (DOPS)

Trainee's Name														
Date of enrollment	D	D	/	M	M	/	Y	Y	Y	Y	Matric Number			
Date of assessment	D	D	/	M	M	/	Y	Y	Y	Y	Student's MMC Number			
Phase of study							Posting							
Hospital														
Clinical Setting:	<input type="checkbox"/> A&E	<input type="checkbox"/> OPD	<input type="checkbox"/> In-patient	<input type="checkbox"/> Neonates	<input type="checkbox"/> Acute Admission									
Clinical Problem Category:	<input type="checkbox"/> Sepsis	<input type="checkbox"/> CVS	<input type="checkbox"/> Shock	<input type="checkbox"/> Gastro	<input type="checkbox"/> Neuro	<input type="checkbox"/> Airway/Breathing								
	<input type="checkbox"/> Behaviour/Developmental	<input type="checkbox"/> Others (Please specify):												
Procedural Number:							Other:							
Number of times procedure performed by trainee:	<input type="checkbox"/> 0	<input type="checkbox"/> 1 - 4	<input type="checkbox"/> 5 - 9	<input type="checkbox"/> >10										
Complexity of the procedure:	<input type="checkbox"/> Difficult	<input type="checkbox"/> Low	<input type="checkbox"/> Average	<input type="checkbox"/> High										
Using the given scales, please grade the areas listed below:	Weak	Borderline	Satisfactory	Good	Excellent	UC								
	1	2	3	4	5	6								
1. Demonstrate understanding of indications, relevant anatomy, technique of procedure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>								
2. Obtained informed consent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>								
3. Demonstrate appropriate preparation pre-procedure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>								
4. Appropriate anaesthesia or safe sedation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>								
5. Technical ability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>								
6. Aseptic technique	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>								
7. Seek help where appropriate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>								
8. Post procedural management	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>								
9. Communication skills	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>								
10. Consideration of patient and professionalism	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>								
*U/C= Please mark this if you have not observed the behavior and therefore unable to comment.														
Please use this space to record areas of strength or any suggestions for development														
<b>Strength of trainee</b>						<b>Suggestions for development</b>								
Assessor's Name														
MMC's Number														
Assessor's email														
<i>Please note: by providing your email address, Conjoined Board reserve the right to contact you to confirm individual assessments were conducted and completed in line with local procedures and by any good assessment practice</i>														
Assessor's position:	<input type="checkbox"/> Consultant	<input type="checkbox"/> Specialist	<input type="checkbox"/> Senior Registrar	<input type="checkbox"/> Nurse	<input type="checkbox"/> Others (please specify):									
Number of previous Paediatric DOBS observed by assessor with any trainee:	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 5-9	<input type="checkbox"/> >9						
Have you had training in the use of this assessment tool?	<input type="checkbox"/> Have read guidelines <input type="checkbox"/> Face-to face <input type="checkbox"/> Web/CD-Rom													
Time taken for discussion (in minutes):							Time taken for feedback (in minutes):							



Assessor's signature

Trainee's signature

**Core Procedures**

*Include all procedures performed in Neonatal Resuscitation (NRP), Paediatric Advance Life Support (PAL) and those required by the National Specialist Register for accreditation as a General Paediatrician.*

	Procedure	Code
1.	Peripheral venous cannulation	01
2.	Peripheral artery cannulation	02
3.	Capillary blood sampling	03
4.	Arterial puncture	04
5.	Central venous insertion	05
6.	Percutaneous long line insertion	06
7.	Collection of blood from central line	07
8.	Umbilical vein cannulation	08
9.	Umbilical artery cannulation	09
10.	Exchange transfusion	10
11.	Intraosseous cannulation	11
12.	Basic ventilation indication, set up	12
13.	Bag, mask and valve ventilation	13
14.	Surfactant administration	14
15.	Endotracheal intubation	15
16.	External chest compression	16
17.	Chest tube insertion	17
18.	Suprapubic aspiration of urine	18
19.	Urethral catheterization	19
20.	Peritoneal dialysis	20
21.	Peak flow	21
22.	Bone marrow aspiration and trephine biopsy	22
23.	Lumbar puncture	23
24.	Ultrasound neonatal brain	24
25.	Electrocardiogram	25
26.	Basic ECHO	26
27.	Mantoux test	27
28.	Vaccination – BCG	28
29.	Vaccination – intramuscular injection	29
30.	Vaccination – subcutaneous injection	30

## Appendix 6

# **SHEFFIELD INSTRUMENT FOR LETTERS (SAIL)**



**Masters of Medicine Conjoined Programme (UM, UKM, USM, UPM)  
Sheffield Instrument for Letters (SAIL)**

Trainee's Name														
Date of enrolment	D	D	/	M	M	/	Y	Y	Y	Y	Matric Number			
Phase of Study											Trainee's MMC Number			
Hospital											Posting			
Patient's registration number:														
Type of patient: New patient / Follow up / Referral / Other														
Complexity of case(s) referred in the letter: Low / Average / High														
How is the letter chosen: Selected / Random														
<b>Problem list</b>														
1.	Is there a medical problem list?										Yes	No		
2.	Are any obvious and significant problems omitted?										Yes	No		
3.	Are any irrelevant problems listed?										Yes	No		
<b>History</b>														
4.	Is there a record of the family's current concerns being sought or clarified?										Yes	No		
5.	Is the documented history appropriate to the problem(s) and question(s)?										Yes	No		
<b>Examination</b>														
6.	Is the documented examination appropriate to the problem(s) and question(s)?										Yes	No		
<b>Overall assessment</b>														
7.	Is the current state of health or progress clearly outlined?										Yes	No		
8.	Are the family's problems or questions addressed?										Yes	No		
9.	Is/Are the referring doctor's question(s) addressed?										Yes	No		
<b>Management</b>														
10.	Is a clear plan of investigation or non-investigation recorded?										Yes	No		
11.	Are the reasons for the above plan adequately justified?										Yes	No		
12.	Are all known treatments, or the absence of treatment, recorded clearly?										Yes	No		
13.	Are all drug doses stated in formal units?										Yes	No		
14.	Is adequate justification given for any changes to treatment?										Yes	No		
15.	Is there an adequate record of information shared with the family?										Yes	No		
<b>Follow up</b>														
16.	Is it clear whether or not hospital follow-up is planned?										Yes	No		
17.	Is the purpose of follow-up adequately justified?										Yes	No		
<b>Clarity</b>														
18.	Is there much unnecessary information?										Yes	No		
19.	Does the structure of the letter flow logically?										Yes	No		
20.	Are there any sentences you don't understand?										Yes	No		



**Appendix 7: Accredited Ministry of Health hospitals and duration of placement allowed.**

	<b>Hospital</b>	<b>Subspecialties</b>	<b>Accredited duration for training (years)</b>	<b>Allowable trainee placement</b>
1	Hospital Sultanah Bahiyah, Alor Setar	Adolescent Medicine, Intensive Care	2	Year 1 and Year 2
2	Hospital Pulau Pinang	Cardiology, Developmental Paediatrics, Infectious Diseases, Intensive Care, Nephrology, Neurology, Respiratory Medicine	4	Year 1 to Year 4
3	Hospital Seberang Jaya		2	Year 1 and Year 2
4	Hospital Raja Permaisuri Bainun, Ipoh	Adolescent Medicine, Community Paediatrics, Haematology/Oncology, Infectious Diseases, Neurology	4	Year 1 and Year 2 <b>OR</b> Year 3 and Year 4
5	Hospital Kuala Lumpur	Adolescent Medicine, Cardiology, Developmental Paediatrics, Gastroenterology, Haematology/Oncology, Intensive Care, Nephrology, Neurology, Respiratory Medicine	4	Year 1 and Year 2 <b>OR</b> Year 3 and Year 4
6	Hospital Selayang	Gastroenterology, Nephrology, Rheumatology, Adolescent Medicine	4	Year 1 and Year 2
7	Hospital Serdang	Cardiology, Endocrine, Immunology, Intensive Care, Respiratory Medicine	4	Year 1 and Year 2 <b>OR</b> Year 3 and Year 4
8	Hospital Seremban	Infectious Diseases, Nephrology	2	Year 1 and Year 2
9	Hospital Melaka	Intensive Care	2	Year 1 and Year 2
10	Hospital Sultanah Aminah and Hospital Sultan Ismail, Johor	Cardiology, Haematology/Oncology, Nephrology, Neurology	4	Year 1 and Year 2 <b>OR</b> Year 3 and Year 4

	Bahru			
11	Hospital Tengku Ampuan Afzan, Kuantan	Cardiology, Nephrology, Respiratory	2	Year 1 and Year 2
12	Hospital Terengganu	Oncology	2	Year 1 and Year 2
13	Hospital Raja Perempuan Zainab II	Cardiology, Infectious Diseases, Neurology, Respiratory	4	Year 1 and Year 2 <b>OR</b> Year 3 and Year 4
14	Hospital Umum Sarawak	Cardiology, Haematology/Oncology, Neurology, Intensive Care	4	Year 1 and Year 2 <b>OR</b> Year 3 and Year 4
15	Sabah Women's and Children's Hospital	Cardiology, Haematology/Oncology, Infectious Diseases, Intensive Care	4	Year 1 and Year 2 <b>OR</b> Year 3 and Year 4