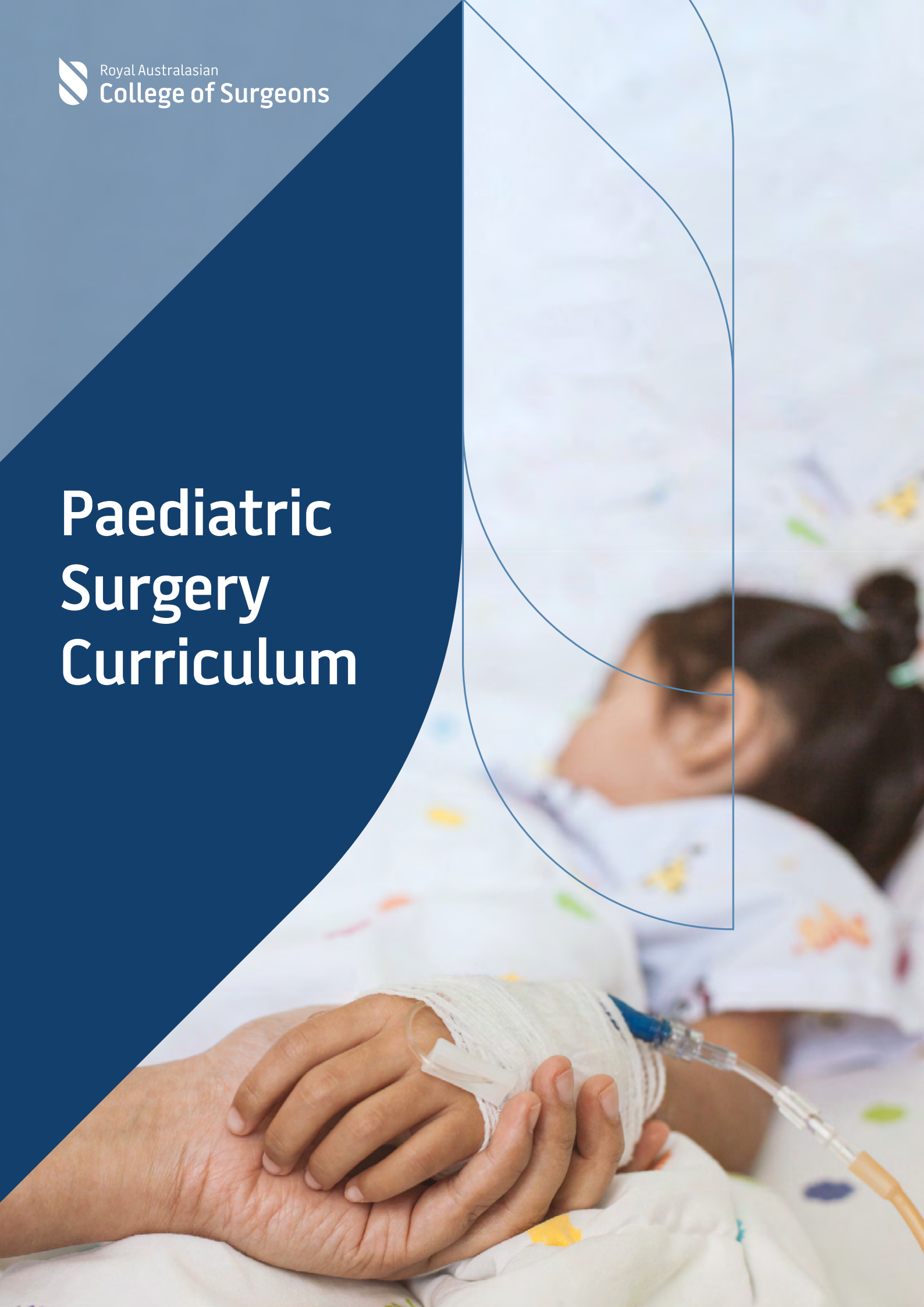
Royal Australasian
College of Surgeons

Paediatric Surgery Curriculum



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Introduction

Overview of SET Program

The Paediatric Surgery SET program aims to produce graduate surgeons with the professional clinical skills to allow independent practice of Paediatric Surgery within Australia and Aotearoa New Zealand.

Applicants to the program are assessed for competencies that will facilitate completion of the training program and successful practice as a member of the Paediatric Surgical Community on completion. The application process assesses competence across all the 10 College competencies. These are assessed by CV and Logbook, referee report and interview. The requirements and process are described in the Selection regulations.

The SET program is divided into three main divisions, Early, Mid and Senior SET.

The first year of SET has specific and detailed requirements as it is considered an extension of selection. There are a series of assessments that aim to calibrate the Trainee to the training program. Many of these assessments are formally certifying that the experience listed on the application logbook are at the expected standard for a Trainee in paediatric surgery. Following successful completion of the SET One Assessments the Trainee will remain an early SET Trainee until completion of the Anatomy and Embryology exam (PAE) and in training assessments document achievement of all Early SET competencies. This would be expected to take between one and two years.

Mid SET is when Trainees develop their core knowledge and skills. In Mid SET the Trainee will develop skills in general Paediatric Surgery. Completion of Mid SET is when the Trainee shows capability for independent management of common paediatric presentations, and surgical skills to allow operative management of common paediatric emergencies and day-case paediatric surgery. During this time the Mid SET Trainee will also be developing skills in neonatal surgery and the core knowledge which is assessed by the Paediatric Pathophysiology Exam (PPE). This will form the basis for advancement to Senior SET.

Senior SET is when Trainees develop mastery of General Paediatric surgery. Senior SET Trainees will complete the development of their skills for the independent management of complex surgical problems and critically ill neonates and children. Senior SET Trainees will refine their surgical skills in Neonatal surgery and in subspecialty areas of Paediatric Surgery (such as Oncology, Thoracic, Urology). Senior SET Trainees are expected to adopt a leadership role and begin to develop their skills as surgical teachers by mentoring junior registrars. Senior SET is when Trainees will pass the Fellowship exam and complete their training by developing the leadership skills required to be independent surgical practitioners.

Introduction to Paediatric Surgery Clinical Curriculum

The full Paediatric Surgical Curriculum (and Syllabus) is outlined over the following documents.

Professional Skills Curriculum

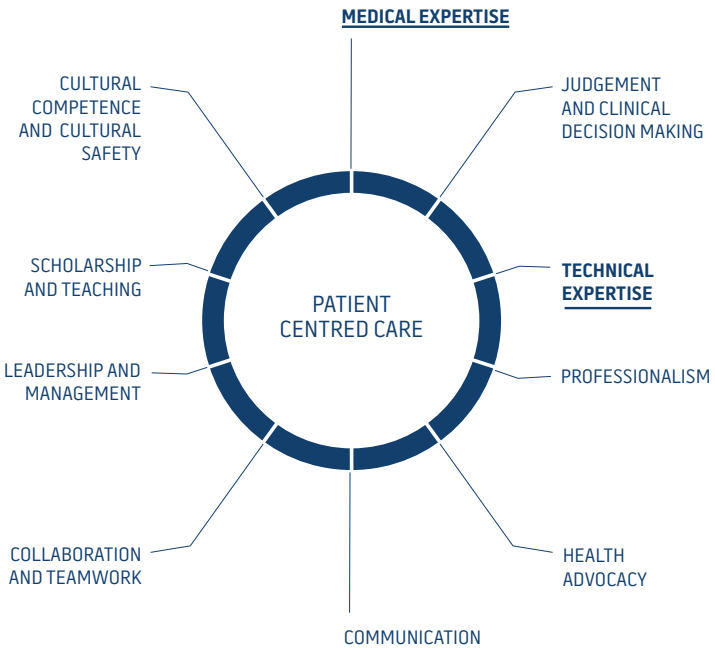
Paediatric Anatomy and Embryology Exam (PSE) Syllabus

Paediatric Pathophysiology Exam (PPE) Syllabus

The Clinical Curriculum

There are Separate Syllabi for the in-training Examinations. Paediatric Anatomy and Embryology (PAE) examinations set the standard required to progress to MidSET and the Paediatric Pathophysiology Exam (PPE) is taken in MidSET prior to progression to SeniorSET. These two Syllabi constitute core knowledge requirements for the practice of paediatric Surgery. The clinical curriculum builds on this knowledge and maps its application to clinical problems.

The Professional Skills Curriculum concentrates on eight of the ten RACS competencies, sometimes referred to as non-technical Skills. These competencies underpin everything we do as surgeons and embody the standards expected of a Fellow of the RACS. The Committee of Paediatric Surgery SET endorse the RACS Professional Skills Curriculum (PSC) and its application to Paediatric Surgical Training. For purposes of Paediatric Surgical Training the three phases described in the curriculum align with completion of Early, Middle and Senior SET (Graduate Outcomes) respectively. These skills are essential to the practice of Paediatric Surgery and are relevant throughout clinical practice. The Clinical Curriculum is built around these in addition to Medical Expertise and Technical Skills as described broadly here.



Medical Expertise	Early SET Learning Outcomes	Mid SET Learning Outcomes	Senior SET Graduate Outcomes
Basic Science: knowledge of Anatomy, embryology, physiology, pathology	– Consolidate and apply knowledge from GSSE – Anatomy and Embryology Syllabus and exam – Discuss acute surgical stress response and healing	– Paediatric Surgery Pathophysiology syllabus and Exam – Apply basic science knowledge to common clinical situations	– Apply knowledge to novel clinical situations
Normal Growth and Development	– Discuss normal development growth and behaviour – Physiological changes in the newborn	– Discuss variations from normal growth and development to clinical problems	– Integrate knowledge of normal growth and development into assessment and management plans
Paediatric Surgical Disease	– Discuss salient issues and key diagnostic concerns	– Formulate appropriate differential diagnosis – Explain disease processes – Discuss appropriate management options	– Interpret conflicting information in diagnosis of Paediatric Surgical disease. – Evaluate data to formulate management plans for individual patients
Paediatric conditions of relevance to the practice of surgery	– Discuss salient co-morbidities and complicating factors	– Prioritise management concerns	– Coordinate care of complex patients with multidisciplinary needs
Clinical Assessment and Investigations	– Elicit clinical history and formulate differential diagnosis – Describe potential investigations to advance a diagnosis	– Elicit relevant clinical history for paediatric surgery diagnosis – Discuss differential diagnoses based on clinical assessment – Initiate and interpret appropriate investigations – Teach physical examination and clinical history taking	– Interpret and demonstrate patient's physical signs and elicit clinical history that identifies and prioritises patient centered clinical issues & pathologies – Integrate clinical information to establish a diagnosis – Evaluate limitations, advantages and disadvantages of investigations – Supervise and assess students and junior medical staff

Technical Expertise	Early SET Learning Outcomes	Mid SET Learning Outcomes	Senior SET Graduate Outcomes
Physical examination	– Perform appropriate systems examinations for different developmental ages	– Identify, evaluate and interpret physical signs	– Interpret and demonstrate patient's physical signs Supervise and assess students and junior medical staff
Basic Surgical Skills (Open/close abdomen, suturing, knot tying, tissue handling etc)	– Apply in practice Basic surgical skills and principals	– Perform basic and routine surgical procedures	– Teach routine Surgical procedures – Modify technique to account for patient and disease factors
Paediatric Surgery	– Describe common paediatric Surgical procedures	– Perform common paediatric surgical procedures – Perform diagnostic cystoscopy – Perform Laparoscopic procedures	– Teach common procedures – Manage complications – Perform revisions
Neonatal Surgery	– Describe considerations involved in performing surgery on neonates, and premature infants	– Prepare infants for surgery – Assist and perform parts of neonatal operations	– Perform neonatal surgery
Advanced techniques in Paediatric Surgery (Thoracic, Oncology, Reconstructive Urology)		– Describe/assist advanced techniques	– Perform advanced laparoscopic procedures – Describe/assist with complex reconstructive surgery – Assist in tumour surgery

In clinical practice we utilize all 10 RACS competencies to a greater or lesser extent in a variety of clinical and professional scenarios. It is easy to focus on Medical Expertise and Technical Skills when thinking about clinical skills but when working through the curriculum it is important to consider how the professional skills as defined in the PSC are integrated alongside knowledge and skills. To help with this integration at times reference is made to specific professional skills that are considered intrinsic to certain clinical activities. For more detailed guidance to teaching, knowledge and assessment of the professional competencies over time Trainees, Trainers, and supervisors should look to the RACS Professional Skills Curriculum.

The Clinical Curriculum is contained in a series of problem-based modules.

The Clinical Curriculum begins with a group of modules that contextualise key professional skills within the clinical practice of Paediatric Surgery. These modules describe professional skills that are integral to the practice of Paediatric surgery in multiple clinical contexts. These modules draw more heavily on the PSC but there are also significant Medical Expertise requirements covered. By exploring them in these modules we seek to avoid repeating them in multiple times in the subsequent clinical scenarios. Whilst these skills are not unique to Paediatric Surgery, they are considered crucial to the practice of surgery in a paediatric population, and thus warrant specific elaboration.

The remainder of the clinical modules are grouped into areas of interest. Paediatric Surgery is a broad specialty, and these groupings reflect a natural breakdown of how the specialty is practiced. Within these groups there are individual modules. The titles of these modules are based on common and important clinical presentations. This is a deliberate move to embed a patient focused approach to considering the practice of Paediatric Surgery. In general patients come to us with a problem, not a diagnosis. In limited contexts a patient does present with a given diagnosis, as such some modules are based on that single, core condition. A small number of modules group clinical concerns together that are important and affect patient care in Paediatric Surgery but may not constitute a separate referral per se. The modules are structured to guide knowledge and skill acquisition that enables safe independent specialist practice at the completion of the programme. The core knowledge requirements to navigate these presentations is contained within the PAE and PPE syllabi. There is potentially limitless information related to the principles and practice of Paediatric Surgery and the knowledge of the specialty continues to expand. It is to be expected that the knowledge and skills held by each graduate will vary somewhat. The Clinical Curriculum has been written to give guidance as to the competency expected to safely practice at the completion of training.

The final important feature of these modules is the graduated description of expectations to guide progression of knowledge and assessment over the course of the programme. There are no conditions that are just for SET One Trainees and no conditions that will only be experienced as a Senior SET. Rather the expectations of a Trainee in terms of their application of knowledge, their management and their technical skills related to a given presentation, or diagnosis will evolve over the course of training. This evolution will not be uniform. Depending on exposure and opportunity some Trainees will achieve earlier competency in some areas than others. The absence of opportunity will not necessarily be a barrier to progression of training. What is important is for the clinical opportunities that a trainee has where in the matrix they are performing. The modules are structured to create a framework for describing knowledge needs and evaluating performance across the breadth of the specialty at each phase of training.

Structure of the Modules

The modules have a title that describes a presentation, or groups related presentations together. There is then a description to outline the knowledge, and skills that will be developed/are required to independently manage this presentation or condition. Generally, particular diagnoses are not specifically named in order to avoid prematurely focusing the subject to a single diagnosis. Sometimes this is inevitable as it is a core condition e.g. Oesophageal Atresia. At times some conditions are mentioned as they require a specific technical skill (e.g. posterior urethral valve ablation), or to give some guidance to the scope of the module. These should always be noted as examples for illustration or emphasis not seen as an exhaustive list.

The reality of clinical practice means some diagnoses may fall under more than one presentation, for this reason there are 'linked modules' to highlight where these overlaps may occur. Conversely, within some modules (for example acute abdominal pain) there are vastly different conditions so working though the expectations around management will involve multiple threads of investigation/diagnosis/intervention. To help signpost this breadth of knowledge there are 'Learning links' given to guide reading and thinking about the scope of possible diagnoses within the given presentation.

These modules taken together describe the Medical expertise and Technical expertise competencies of the Paediatric Surgical curriculum. However, there are 'Professional Skills of particular importance' listed. This is to highlight areas where a professional skill is of relevance such as Communication in Ante-natal counselling or Health Advocacy in Trauma. Again, this is not meant to be limiting but rather indicating clinical contexts in which Trainees and Trainers may focus on opportunities to develop and demonstrate these competencies.

The modules are then divided into three domains 'Clinical Assessment and Investigations', 'Non-operative Management' and 'Operative Management'. These domains are broken down into expectations for each stage of training. The performance descriptors are to be interpreted as the expectations for the completion of that stage of training. For example, Early SET describes the competency level that indicates readiness for progression to Mid SET, Senior SET describes the expected competency at the completion of training, i.e. Graduate Outcomes.

Finally, there are listed teaching and learning opportunities and assessments. This is to map these modules to the training and assessment. Where relevant related resources will be provided to give guidance to knowledge opportunities outside of the Clinical attachments. These lists are neither exhaustive nor compulsory.

It is important that a progressing Trainee can demonstrate this developing knowledge to a degree greater than that required to simply do their job. The breakdown in the modules helps direct these expectations realistically at earlier stages of training.

Clinical Assessments and Investigations

This covers history taking, examination, ascertaining differential diagnosis, planning and interpreting investigations, and importantly formulating management plans. This is predominantly within the competency of Medical expertise. Whilst there is a focus on the knowledge base around investigations (indications, limitations, interpretation etc) Judgement & Clinical Decision making competencies are intrinsic to progression in these domains.

The behavioural descriptors focus on the knowledge that the Trainee has and can demonstrate through workplace-based activity, but more so through case-based discussion. Trainees must demonstrate higher order thinking, or ability to critically analyse information, and their understanding of priorities of treatment before they are entrusted to independently instigate management plans. This capacity can be interrogated via discussion with supervisors and Trainers to ascertain if reasons for decisions are understood within context of individual patient needs rather than just application of guidelines or reproducing previously seen plans for similar cases. This is in keeping with the Trainee's role to work under supervision. At a junior level a Trainee will be able to apply guidelines and protocols. During training an ability to appraise and critique guidelines and protocols should be developed with the expectation that a graduate will be expected to manage patients who fall outside of standard guidelines and assume responsibility for writing and revising evidence-based protocols and guidelines. It is important that a progressing Trainee can demonstrate this developing knowledge to a degree greater than that required to simply do their job. The breakdown in the modules helps direct these expectations realistically at earlier stages of training.

Specific descriptors are used to describe hierarchical expectations of knowledge and its application. In general, the expectation is that knowledge is developed early (most notable around the PAE and PPE) and the demonstration of that knowledge moves from the ability to discuss the science, pathology, and epidemiology, through to its application to individual cases and finally problem solving around complex cases, comorbidities, or other competing demands (higher order thinking).

To this end the common descriptors utilised demonstrate progression through Bloom's taxonomy. There is a glossary of descriptors at the end of this document.

Describe: Reflects the baseline of remember. At the descriptive level the Trainee will be able to reply to a question about a condition by repeating appropriate information from their reading, study, or describe their previous experience.

Discuss: In addition to simple recall the Trainee will demonstrate some understanding and relate their knowledge more specifically to the clinical scenario in question. The expectation is that this performance will be in a clinical environment but may require prompting and not yet be to the level of independently formulating a management plan for a particular patient.

Formulate: This introduces the application of knowledge. At this level the expectation is that the Trainee will when be able to propose an investigation or management strategy appropriate to the clinical scenario. The use of "Formulate" implies that this would be part of a discussion with a senior or supervising clinician. In some contexts, the term "implement" is used when it is appropriate for the Trainee to initiate treatment independently. Whilst this is at the level of independent practice when

utilised for standard presentations of common conditions it could still be a MidSET competency as it doesn't require the higher cognitive skills of Evaluate and Create- the higher order thinking.

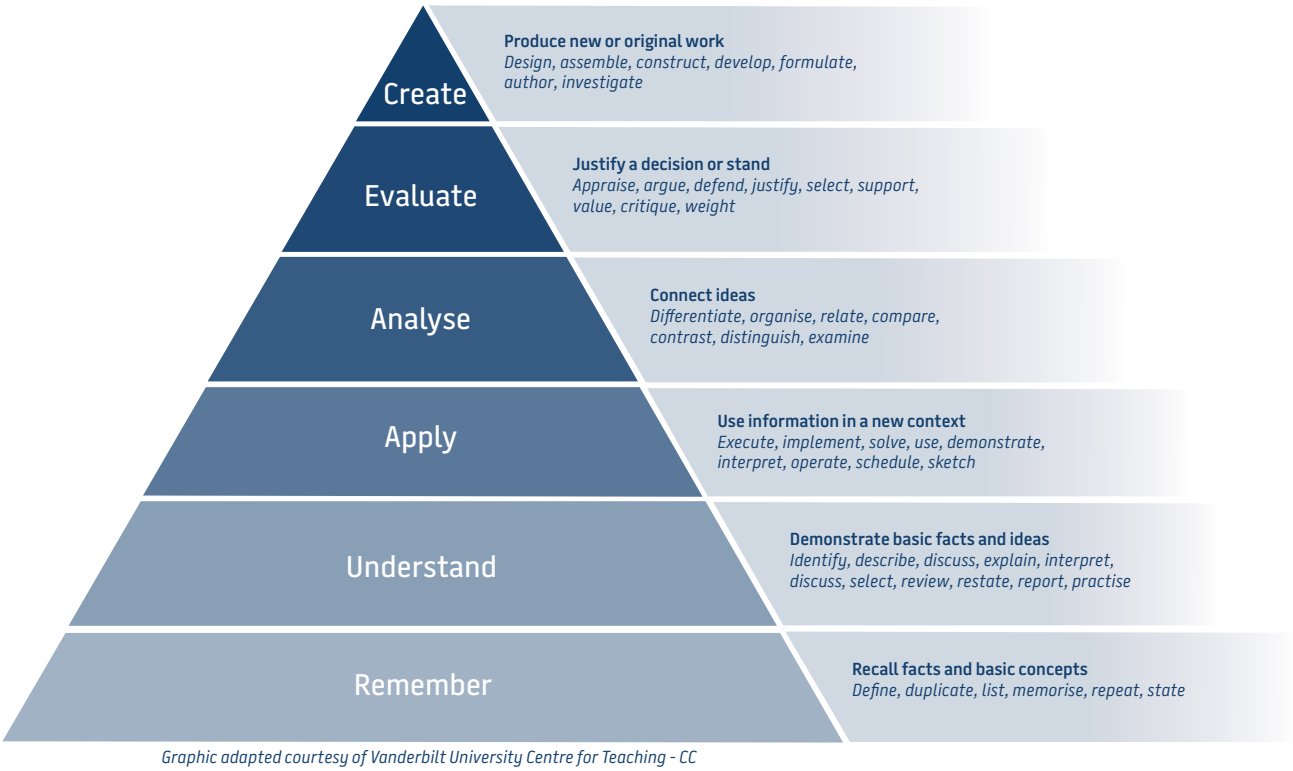
Evaluate: This is a considerable higher level of expertise than discuss. At this level the Trainee will critically analyse the strength of evidence available and identify areas of clinical uncertainty that will require attention. At a Senior level the Trainee will identify gaps in the literature, or aspects of a case which mean the usual guidance is inadequate for decision making.

Develop: At this level the Trainee will identify that the usual protocols or guidelines do not cover the specific clinical scenario so will have to develop a management plan that deals with this uncertainty, in addition to the patient or family's goals and values.

Within each domain the descriptors for a stage of training indicate the expected standard at completion of that stage. Some Trainees will be performing at, or even above, the described level for some domains but will still be working on achieving the standard in others. This variance will inform the comments for in training assessments, areas of strength/areas for development.

There is an expectation that at a more junior level a Trainee will be further up the Bloom's taxonomy for simple and important conditions, such as initiating fluid resuscitation for the shocked patient, yet still discuss investigations and describe interventions.

For complex patients whilst the Trainee practices under supervision they may remain at the stage of formulating management plans as they will still discuss the case with the responsible consultant. The sophistication of their proposal should be such that as a graduate they will be capable of independently initiating that treatment.



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Non-operative Management

Non-operative management is essential at each stage of the curriculum.

Not all patients require an operation, and not all surgeons will perform all operations. However, all patients require management. These modules represent the core presentations that all graduating Paediatric Surgeons must be capable of seeing, assessing, and up to a certain point managing. The expectation is that important medical management can be articulated, and then instituted at a more junior level than full independent operative management.

The knowledge and skills in this section of each module describe activities that demonstrate the Trainee's medical expertise and its application. Multifaceted perioperative medical care is required for paediatric surgical patients, and non-operative management is an important adjunct or at times alternative to surgery. This section of the curriculum outlines the expectation of involvement in teams and communication competencies. The eventual outcome is for demonstration of leadership within teams including planning, assembling, multidisciplinary consultation and communication within teams. The competency of communication with families, includes conveying complex and often distressing information around diagnosis and prognosis with families, and working with families to develop and then deliver management plans. The terms "participate in" and "lead" are used to indicate progressive responsibility and leadership in these management settings. The other descriptors used are similar to those within the domain of medical expertise. There is considerable scope for all the Professional competencies (Judgement and clinical decision making, Leadership and management, Collaboration and Teamwork etc.) to feature in performance in this domain.

At each stage of training there is increasing expectation of degrees of independence, awareness of and performance of tasks and finally knowledge and skills that trainees demonstrate but may still be developing full independence in performance at the completion of training.

All surgeons have areas of strength and areas of less experience. Even the most experienced surgeon in certain contexts will need advice or assistance.

Operative management

Operative management is a core function of being a surgeon, but still just one aspect of the patient's overall care. This domain falls most obviously under the umbrella of Technical skills but of course there are important professional skills utilised in the performance of surgery as covered in the TIPS framework.

Operative management is described as part of a progression through a problem-based approach. The surgical interventions must be seen in the context of how to manage this patient with this clinical problem. Surgical skills are embedded in this way to avoid the uncoupling that would occur with a list of conditions and then a list of operations grouped as Early/Mid/Senior SET competencies. Care has been taken to avoid naming specific interventions (especially eponymously) as across our fellowship practice can vary, and changes over time.

All surgeons have areas of strength and areas of less experience. Even the most experienced surgeon in certain contexts will need advice or assistance. The descriptors are meant to guide learning and assessment over time. There are key conditions where in all but the most unusual of circumstances a graduating "day one" FRACS (Paed Surg) must be capable of managing independently (e.g. infant hernia, perforated appendicitis, malrotation with volvulus). There are conditions that most would be comfortable with a standard case, but some at first –or in complicated circumstances- may require collegial support (CDH, Oesophageal Atresia, PSARP). Finally, there are procedures that most FRACS (Paed Surg) do not routinely perform. Some Trainees depending on experience and interest may have developed a degree of competence, but independence would largely represent Post-Fellowship development (Chest wall reconstruction, Bladder Augmentation, Cloacal reconstruction, Liver resection).

The following terminology is used to differentiate and describe performance expectations. Within each stage the proficiency described indicates what the Trainee in that stage of training should be working towards. These terms are applied at different training stages in the modules so a skill that is "Perform Independently" at completion of training could be "Describe" at Early SET and "Perform" at MidSET, e.g. pyloromyotomy. For some conditions it is appropriate to expect "Perform Independently" as MidSET competency e.g. scrotal exploration. The Senior SET capabilities describe the expectation at the completion of Senior SET i.e. Graduate outcomes.

Independently perform & manage complications/teach procedure: This is the highest expectation. This is mastery and would typically reflect a procedure that a MidSET would be routinely performing with supervision and the Senior SET Trainee is already demonstrating consultant like independence. Examples: Surgery for undescended testes, appendicitis, inguinal hernia.

Independently perform: This means that the individual can select appropriate cases and complete the procedure in most cases. The expectation is that all Trainees will have documented performance of this procedure competently (Logbook/MOUSEs). Laparotomy for NEC, management of Empyema, intestinal obstruction, abdominal wall defect.

Perform: These procedures are also considered core paediatric surgery. "Perform" means that the Trainee is capable of doing but, may require collegial support at first. They may not have large logbook numbers, and potentially may have not completely performed a case from start to finish independently but have demonstrated competence through parts of the procedure or similar procedures such that it would be safely in their scope of practice as a consultant. They should have knowledge and skills to manage common complications. An example of this would be surgery for Thyroglossal duct cysts, Laparoscopic Pyeloplasty, fundoplication, lung resection or distal Hypospadias.

Describe: This is a procedure that not every surgeon does, and not every Trainee will have had the opportunity to have performed during training. It is considered a core aspect of Paediatric Surgery and familiarity with the procedure is essential as we would expect the Graduate to manage the patient independently even if they may get a colleague to assist with or perform the procedure. An example of this would be long segment Hirschsprung's Disease, Cloaca, or long gap OA. Other procedures under this category are those which a Trainee may not have seen in training but must still be considered within scope of practice for a general Paediatric Surgeon. Such procedures are seldom performed but rely on transferable skills such as emergency splenectomy.

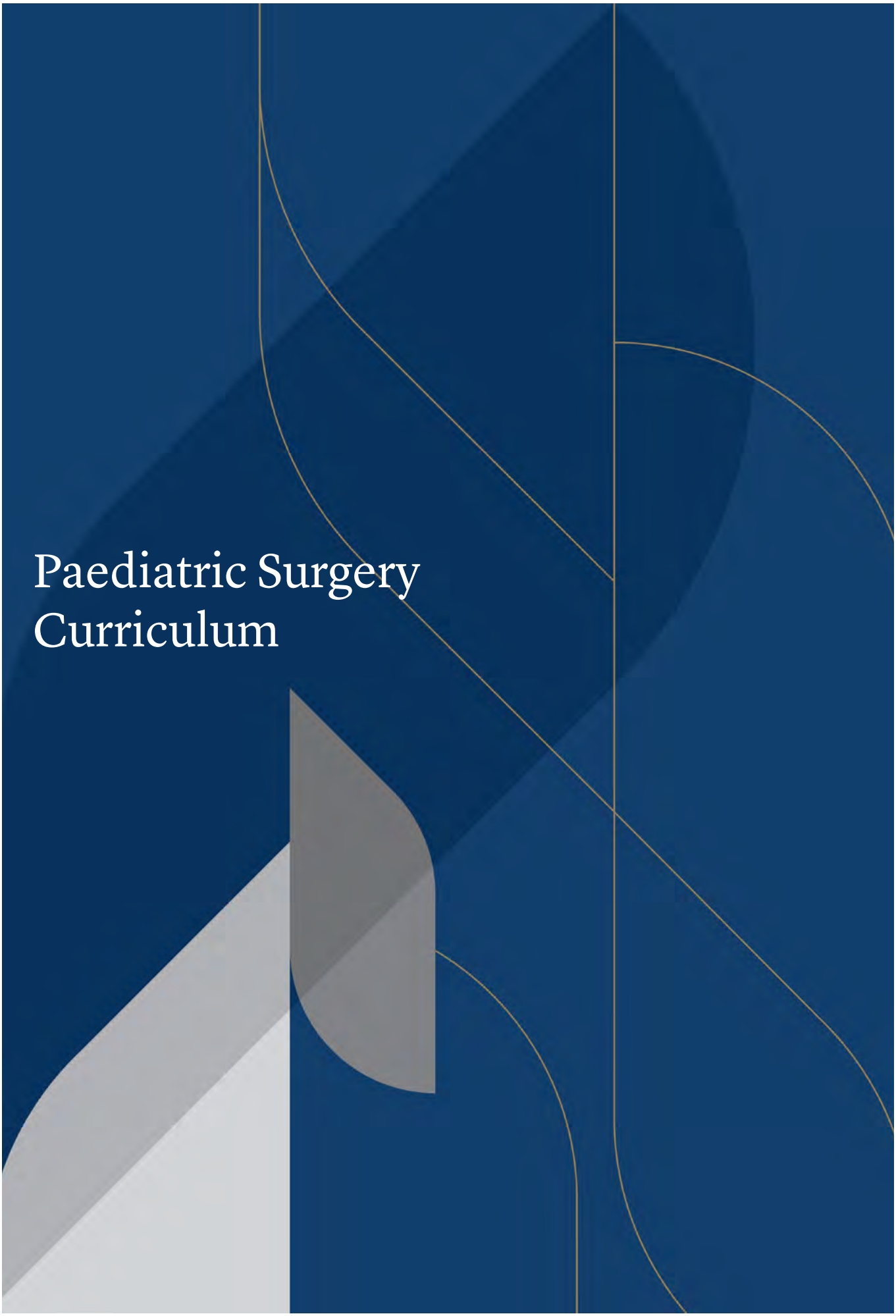
Discuss/Evaluate: These are non-core sub-Specialty procedures that Trainees should have had exposure to and should be actively involved in aspects of patient management. Knowledge of the procedure is important for their practice as a Paediatric Surgeon particularly with regards recognition of need for and knowledge of perioperative management including follow up but referral of these patients for surgery would be the expectation for most especially outside of quaternary centers. Examples are Chest Wall reconstruction, Kasai, bowel lengthening procedures.

Preparing and Assisting: These are essential components of operative management and should be achieved earlier than some operative skills. The ability to plan and prepare surgery (under supervision or delegation) is an indicator of peri-operative knowledge and situational awareness. Knowing how to book surgery, consult with an anaesthetist regarding a patient, anticipate needs for equipment and blood transfusion, and, arrange critical care support; are examples of demonstrating knowledge, and professional skills that are integral to safe surgery. Positioning a patient and preparing operative equipment are important skills that need to be developed early and demonstrates emerging knowledge of the procedure. Being a competent active assistant at complex surgery is more nuanced than taking direction and holding a retractor as it requires expansive knowledge of the procedure, instrumentation and tissue handling. Early and midSET trainees should be involved in the complex operations that will only be performed as a Senior SET (if at all in training). Therefore Assisting has been identified as a specific technical skill that shows progressive development of comprehension and competence from early to senior stages.

Using this curriculum

The breadth of Paediatric Surgical knowledge is covered in the PPE syllabus, any of the major textbooks of Paediatric Surgery, and the Paediatric Surgical literature which is constantly expanding. Trainees are encouraged to read widely and develop their knowledge base in preparation for the PPE, during the CATS and DOGS and from week to week in relation to the clinical cases they encounter in the workplace. These modules should act as a framework to build that knowledge around. The nature of Paediatric Surgical practice is inherently general and often providing support to other clinicians broadens it further. Therefore, the scope of practice is wide. These modules cover the day-to-day important conditions, and the rare or unusual presentations that fall squarely within the scope of a Paediatric Surgeon who must be a leader in the delivery of care for that patient. To that end these modules taken together describe the expectations of a graduating FRACS Paediatric Surgeon, but they should be seen as non-limiting, there will always be other clinical scenarios in which the Paediatric Surgeon will make an important contribution to clinical care.

There is no formal course work or specific assessment for each module, rather knowledge should be developed progressively in the workplace directed by cases encountered and managed. The Trainee and Trainer should utilise the modules as a guide when assessing current knowledge needs and assessing performance. Heterogeneous progress across the curriculum signals knowledge areas that need addressing through study, courses, unit rostering and training allocations. Assessment is through the quarterly in-training assessments, and performance in MOUSE's, CATS, DOGS etc. The modules describe for each stage of training what level of performance is expected when that assessment occurs. The expectation of increasing independence supports recognition of training opportunities, and if concerns about performance are identified they can be referenced to specific expectations in relevant modules.


Paediatric Surgery
Curriculum

The Practice of Paediatric Surgery

1. Antenatal counselling

Summary: Antenatal counselling is a rapidly advancing field, involving suspected conditions that may require paediatric surgical input postnatally. Paediatric Surgeons play an important role in providing antenatal counselling, in partnership with materno-fetal medicine teams. At the completion of training a Trainee will demonstrate knowledge of the complexities of prematurity and other comorbidities that impact on surgical management of antenatally diagnosed surgical conditions. The Trainee will be able to adopt a leading role in multidisciplinary assessment, management and investigation of ante-natally detected anomalies.

Linked Modules: Neonatal, Renal tract dilatation, Lower urinary tract dysfunction, Renal dysplasia/Upper tract anomalies, Child with genital anomalies, Abdominal mass, Thoracic Mass, Vascular Anomalies, Tracheo-oesophageal disorders, Diaphragmatic Defects, Lung Lesions, Head and neck lumps, Child, family and community, Child with co-morbidities and interdisciplinary Care

Learning Links: PAE, PPE: Embryology/developmental,

Professional Skills of particular importance: Communication; Collaboration and teamwork; Cultural competence and cultural safety

SET	Knowledge	Skills	Behaviours
Early	– Describe paediatric surgery conditions that can present antenatally – Discuss antenatal diagnostic modalities	– Discuss the principles of antenatal counselling	– Demonstrate sensitivity to factors affecting antenatal diagnosis and management
MId	– Evaluate reported antenatal diagnostic findings, and their implications for antenatal and postnatal course. – Discuss antenatal interventions	– Discuss principles of antenatal counselling, with respect to specific antenatal findings	– Demonstrate professionalism in interactions with MDT members
Senior	– Evaluate the role of antenatal interventions	– Interpret antenatal investigations, in partnership with the MDT, to formulate a differential diagnosis, severity and prognosis – Formulate ante-, peri-, and postnatal management plans.	– Communicate with parent(s) potential and expected outcomes and management plans of antenatally diagnosed paediatric surgical conditions

Teaching/learning: Clinical Attachments, RATS, CATS, MFM clinic/MDT

Assessment: In training assessment, Mini-CEX, FEx

Teaching and learning opportunities: SPUNZA Paediatric Urology Update

2. Perioperative care

Summary: An integral part of being a surgeon once the decision has been made for a surgical intervention is preparing them for this surgery, ensuring the surgical team is prepared to deliver safe and effective care, and anticipating and attending to the needs of the patient following surgery. When performing surgery on infants and children there are additional considerations. This module explores the knowledge, clinical skills and professional behaviours integral to delivering high quality surgical care. They are explicitly described here but should be embedded into practice within all aspects of the child's surgical management. By the completion of training the Trainee will be able to lead and coordinate a team that attends to the perioperative needs of patients and their carers. The Trainee will adopt a leadership role in advocating for appropriate paediatric peri-operative services in their clinical workplace and the broader community.

Linked Modules: All clinical modules, RuFUS, Child, family and community

Learning Links: PPE; Fluids Growth Nutrition

Professional Skills of particular importance: Leadership and management, Professionalism, Health advocacy

SET	Knowledge	Skills	Behaviours
Early	– Discuss normal childhood emotional and behavioural development and anticipate the implications for perioperative care – Describe physiological considerations for surgery in infants and children, contrast this to adult patients	– Demonstrate age-appropriate communication – Obtain and document consent for standard procedures. – Manage perioperative preparation, equipment, team, support, and post-op disposition	– Demonstrate culturally competent patient centered care when making operative arrangements – Maintain appropriate professional relationships with members of perioperative team
MId	– Discuss anaesthetic and analgesic concerns for premature infants, term infants and children – Evaluate role of pharmaceutical and non-pharmaceutical interventions for pain and procedural distress – Discuss blood transfusion, haemostatic management	– Obtain and document consent for Complex procedures – Demonstrate understanding of social dynamics, medico-legal requirements and ethical considerations around including the patient in this process – Tailor the perioperative approach for specific patient groups including neurodiverse children according to their specific needs	– Demonstrate patient advocacy in all domains of patient management – Demonstrate active interest in post operative course both immediate and long term
Senior	– Evaluate hospital systems and perioperative protocols. – Discuss factors that promote delivery of age-appropriate care	– Lead both MDT and Family conferences for complex cases	– Demonstrate leadership of the perioperative team. – Anticipate issues in care delivery

Teaching/learning: Outpatient clinic, on-call, Ward rounds, Operating Theatre, CATS/DOGS, TIPS, CRiSP

Assessment: Mini-CEX, MOUSE, In training assessment, FEx

3. Rural focused urban surgeon (RuFUS)

Summary: The wide scope of Paediatric Surgery means that it is comprised of many rare conditions drawn from a large referral base. Paediatric Surgery is a specialty predominantly based in tertiary children's hospitals and large general hospitals in major population hubs in high income countries. However, within Aotearoa New Zealand and Australia there are many children with Paediatric Surgical needs who live outside these centres. This topic explores issues around providing care to these children and the Paediatric Surgeon's role in supporting services and delivering care. By the end of training the Trainee will be able to adopt an active role in the delivery of Paediatric Surgical Care to non-urban populations.

Linked Modules: All Clinical Modules, Child, family and community, Preparation for practice

Professional Skills of particular importance: Health advocacy, Management and leadership, Collaboration and teamwork

SET	Knowledge	Skills	Behaviours
Early	– Discuss the geographic and systemic barriers to accessing clinical care for paediatric surgical patients	– Discuss clinical cases with colleagues outside of Paediatric Surgical units with emergency referrals – Describe the factors affecting care delivery – Engage with seniors to develop and implement plans for rural patient referrals	– Demonstrate a patient centred approach to coordinating care for patients from remote or regional settings
MId	– Evaluate the evidence for the effects on clinical outcomes and health issues for patients in regional and remote communities – Discuss various technological and logistic solutions for addressing the health inequality issues secondary to geographic considerations	– Anticipate perioperative needs of patients from outside major urban centres and formulate plans to minimise the impact of surgical interventions on the patients and their families – Participate in the delivery of care outside the tertiary setting for paediatric surgical patients, including telemedicine and virtual care	– Account for the cultural and social aspects of the provision of healthcare within the patient's own setting including aspects relating to Indigenous and Māori populations
Senior	– Evaluate health systems to identify geographic barriers and formulate strategies to deliver care to remote and regional populations – Assess local resources (human and physical) in referring centres to identify capacity and risk	– Engage with colleagues in other specialties and allied health to provide appropriate non-surgical and surgical care to children outside of urban centres – Adopt a leadership role in developing and delivering outreach services for assessment and management of children, including longitudinal follow up, in settings close to their homes	– Model supportive relationships with rural and regional colleagues with the shared goal of improving healthcare withing their own setting – Create a shared patient centric environment where every action is focused on improving the care that is provided in the patient's own setting

Teaching/learning: Outpatient clinic, on-call, Ward rounds, Operating Theatre, CATS/DOGS, Outreach services (telehealth, remote clinics)

Assessment: Mini-CEX, MOUSE, In training assessment, FEx

4. Child, family and community

Summary: For safe and effective practice of Paediatric Surgery the surgeon must identify their patient is embedded in family and community supports. These factors can be utilized to ensure delivery of high-quality care, but the surgeon must also be cognisant of barriers to care and potential sources of health inequity. At the heart of paediatric surgery is the paediatric patient, delivery of high-quality care requires an understanding of the needs of the paediatric patient. Australia and Aotearoa New Zealand are colonized nations which create additional considerations for Indigenous patient's and their families. In order to deliver high quality culturally safe care the paediatric surgeon must demonstrate an understanding of the effects of colonization and a commitment to addressing health inequities. By the completion of training the Trainee will identify family and community resources that can be leveraged to improve care, and barriers that must be addressed. The Trainee will adopt a leadership role when necessary to address barriers to paediatric patients obtaining equity of outcome.

Linked Modules: All clinical modules, Perioperative care, RuFUS

Professional Skills of particular importance: Cultural competence and cultural safety, Health advocacy, Communication

SET	Knowledge	Skills	Behaviours
Early	– Discuss socio-economic and cultural factors that influence patient presentation and management – Discuss the effects of colonization on Māori, Aboriginal and Torres Strait Islander peoples, and how that relates to equity of health outcomes – Evaluate guidelines and legislative requirements for screening and reporting concerns about family violence and inflicted injury	– Utilise adaptive communication when interacting with patients and their carers – Utilise social and community resources to improve patient's access to secondary and tertiary care – Adopt a culturally safe approach to interactions with Māori, Aboriginal and Torres Strait Islander peoples.	– Demonstrate culturally safe integration of the patient's family/whānau/mob and other community resources in assessment and management
MId	– Discuss medico-legal and ethical considerations around communication and consent for pediatric patients, including refusal of consent – Discuss graduated capacity for assent/consent relative to a child's psycho-social development	– Facilitate family and patient discussions with interpreter or family advocate tailored to the specific needs of the family – Engage with Family/carers to ensure optimal care for patient creating a safe open environment	– Model respectful attitude when dealing with families of different cultural groups and adapt this approach when needed
Senior	– Evaluate regional and national systems that facilitate or obstruct access of paediatric patients to healthcare in particular Māori, Aboriginal and Torres Strait Islander children.	– Coordinate care for patients with difficulty navigating healthcare system	– Engage in discussion around cultural safety and model personal reflection – Establishes an environment that promotes cultural safety and is responsive to the needs of Māori, Aboriginal and Torres Strait Islander peoples

Teaching/learning: Outpatient clinic, on-call, Ward rounds, CATS/DOGS,

Assessment: Mini-CEX, MOUSE, In training assessment, FEx

5. Child with major comorbidities and interdisciplinary care

Summary: Many of the most complex paediatric surgical patients have syndromes or conditions that result in multi-system clinical considerations. The Paediatric Surgeon must identify presentations and conditions that are linked to potential additional diagnoses and adopt a leading role in their investigation and management. In some instances, the index presentation will be to Paediatric Surgery, in others the Paediatric Surgical concerns will arise during (or due to) the investigation and management of another healthcare team. Additionally, due to the general nature of the Paediatric Surgeon's scope of practice they may be involved in coordinating colleagues with the care of children whose primary diagnoses is outside of Paediatric Surgical domains. By the completion of training the Trainee will be an active member of the Paediatric Services for complex patients in their institution. The Trainee will have an in-depth knowledge of syndromes and associations that affect the children in their care. The Trainee will adopt a leading role in surgical support for paediatric patients in interdisciplinary contexts.

Linked Modules: All Clinical Modules, Antenatal counselling, RuFUS, Child, family and community

Learning Links: PPE

Professional Skills of particular importance: Collaboration and teamwork, Health advocacy, Communication

SET	Knowledge	Skills	Behaviours
Early	– Describe patterns of associations that commonly affect Paediatric Surgical patients – Describe lifestyle, environmental and personal factors that can influence health and health outcomes – Describe the specific different team members or specialties in which it is appropriate to include in the ongoing care of the patient with a syndrome or association	– Assess referred patients to identify issues of Surgical relevance – Coordinate the care of patients involving multiple different specialties	– Interact with other teams in a respectful and productive fashion – Treat patients and families with sensitivity
MId	– Describe common paediatric syndromes and associations that present with paediatric surgical concerns – Discuss wider clinical systems based sequalae of common syndrome and associations including immuno-suppression or other systemic compromise	– Propose management plans that account for the clinical urgency and logistics of the different conditions and specialties – Facilitate MDTs and family conferences in children with complex clinical leads	– Incorporate patient and carer views in the management of a patient with complex medical needs secondary to their syndrome or association
Senior	– Demonstrate knowledge of co-morbidities for common paediatric surgical syndrome and associations – Describe different syndromes and associations in which it might be appropriate to divert care to a palliative pathway	– Demonstrate the ability to both anticipate problems and predict certain issues prior to their occurrence – Lead both MDT and Family conferences for complex cases involving multiple clinical systems and specialties	– Demonstrate compassion and empathy for the family and patient with complex medical needs due to a syndrome or association – Demonstrate advocacy for the patient and their needs in the wider healthcare system

Teaching/learning: Outpatient clinic, on-call, Ward rounds, CATS/DOGS,

Assessment: Mini-CEX, MOUSE, In training assessment, PPE, FEx

Other Resources: TIPS, APLS

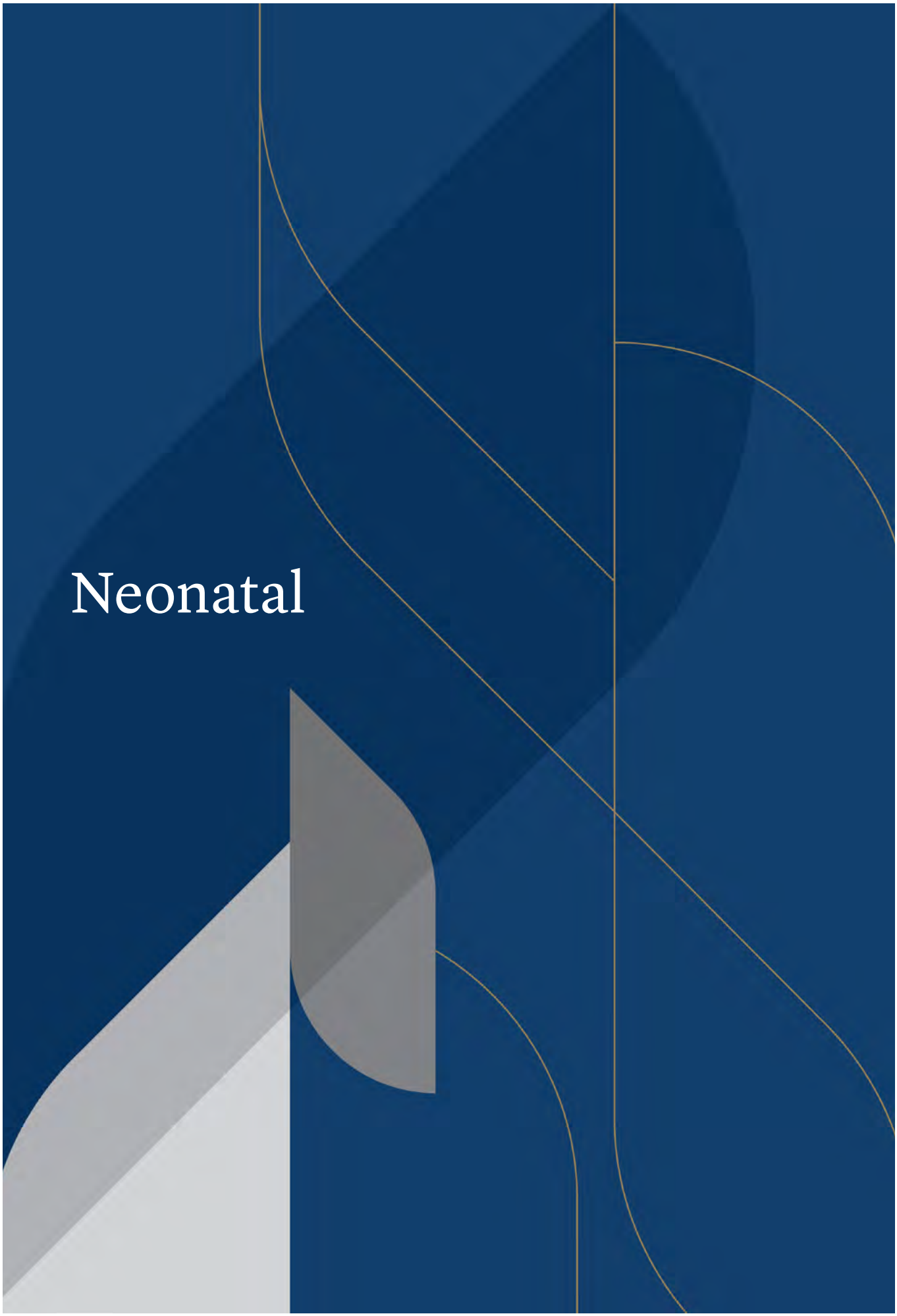
6. Preparation for practice

Summary: The graduating paediatric surgeon will need to establish themselves in independent clinical practice. This requires an understanding of the healthcare systems in Aotearoa/New Zealand and Australia. In training the Trainee will be required to comply with jurisdictional requirements as well as fulfilling the requirements for employment and training. By the completion of training the Trainee will be aware of registration requirements, the role of the registration bodies and the College. They will have knowledge of employment and practice arrangements in their chosen region. The graduating surgeon will have knowledge of CME and professional development obligations and opportunities.

Professional Skills of particular importance: Professionalism, Health advocacy, Leadership and management

SET	Knowledge	Skills	Behaviours
Early	– Describe requirements for registration, jurisdictional documentary requirements, and training regulations	– Assist families navigating the health care system	– Describe requirements for registration, jurisdictional documentary requirements, and training regulations
MId	– Discuss healthcare delivery, public-private systems – Evaluate financial and environmental factors that influence healthcare decisions – Discuss systemic factors that influence access to healthcare and equity of outcome	– Participate in guideline review and development – Manage junior staff and team members – Integrate clinical and non-clinical responsibilities (research, teaching, administrative duties)	– Support junior team members and other team members to function within their role
Senior	– Evaluate how health systems function from government policy to employment types – Discuss role in challenging systemic barriers to healthcare	– Discuss role in challenging systemic barriers to healthcare – Lead audit and quality improvement projects	– Engage in clinical governance – Demonstrate probity around billing and financial aspects of employment/ training

Teaching/learning: TIPS, RACS Preparation for Practice Workshops


Neonatal

1. Neonatal abdominal distension/vomiting/Failure to pass meconium

Summary: Neonatal abdominal distension and vomiting are common and may be preceded by delayed passage of meconium. Neonatal abdominal distension and vomiting can be caused by a wide variety of anatomical and functional disorders. Surgical causes (congenital or acquired) are important differentials. At the completion of training the Trainee will assess and manage infants with surgical abdominal conditions.

Linked Modules: Antenatal counselling, Neonatal respiratory distress, Jaundice, Groin lumps, Neonatal abdominal wall defects, Neonatal masses, or abnormal growth

Learning Links: PAE, PPE: Embryology Neonatal Cystic Fibrosis and Meconium ileus/Hirschsprung's Disease/ Gastro-oesophageal reflux/ Oesophageal disorders/ Intestinal insufficiency/ ano-rectal malformations/ malrotation

Professional Skills of particular importance: Judgement and clinical decision making, Collaboration and teamwork, Communication

SET	Clinical assessment and investigations	Non-operative management	Operative management
Early	– Report findings of appropriate history and examination – Discuss key symptoms and signs indicating surgical pathology – Describe potential investigations to advance a diagnosis – Describe the characteristics of a sick neonate	– Escalate care for patients that need urgent senior input – Perform intravenous cannulation and placement of nasogastric tube – Reduce neonatal inguinal hernia. – Describe appropriate fluid resuscitation – Discuss antibiotic regimes – Implement MDT management plan as delegated	– Perform rectal dilatation/washout and suction rectal biopsy – Coordinate perioperative care – Assist neonatal surgery
Mid	– Discuss differential diagnoses based on clinical assessment – Differentiate medical from surgical causes – Initiate and interpret appropriate investigations	– Initiate resuscitation and relevant medical management – Discuss inter and intra-facility transfers	– Describe the principles of neonatal abdominal surgery – Perform entry and closure of a neonatal laparotomy – Perform needle decompression and insertion of an abdominal drain
Senior	– Integrate clinical information to establish a diagnosis	– Propose and initiate a management plan – Determine when non-operative and surgical interventions are appropriate – Participate in conversations with families about severity of risks and redirection of care – Anticipate and counsel potential early, medium and long term outcomes of management – Manage complications	– Perform emergency neonatal laparotomy, bowel biopsy, bowel anastomosis, stoma formation – Justify intra-operative decisions based on operative findings and patient status – Perform neonatal laparoscopy – Perform reconstructive and/or definitive surgical procedures with assistance as required

Teaching/learning: Outpatient clinic, ward rounds, on-call, Operating Theatre, CATS/DOGS,

Assessment: Mini-CEX, MOUSE, In training assessment, PAE, PPE, FEx

Other Resources: Neonatal Surgical Course, Colo-rectal Course

2. Neonatal abdominal wall defects

Summary: Neonatal abdominal wall defects are a wide spectrum of disorders of varying complexity. They are a core component of Paediatric Surgery. There may be significant associated anomalies making treatment of these conditions challenging. At the completion of training the Trainee will assess and manage most infants with abdominal wall pathologies, as a leading member of the MDT.

Linked Modules: Neonatal, Neonatal abdominal Distension/vomiting, Antenatal counselling, Renal tract anomalies, Groin Lumps, Gut Dysfunction

Learning Links: Anatomy/Embryology syllabus; Pathophysiology Syllabus: Body wall, Abdominal wall, Chest wall, Bowel, Malrotation, intestinal failure

Professional Skills of particular importance: Leadership and management, Collaboration and teamwork

SET	Clinical assessment and investigations	Non-operative management	Operative management
Early	– Describe normal abdominal wall development, and the embryological theories for abnormalities thereof – Discuss initial investigations, e.g. blood sugar – Diagnose umbilical and central abdominal anomalies – Discuss the pathophysiology of abdominal compartment syndrome	– Insert nasogastric tube – Perform rectal washout – Assess and protect viscera – Discuss neonatal antibiotic and pain management medications – Implement MDT management plan as delegated	– Perform umbilical/epigastric hernia repair – Perform excision of umbilical polyp – Describe silo placement
Mid	– Diagnose abdominal wall anomalies – Describe possible associations and relevant investigations – Anticipate abdominal compartment syndrome	– Perform appropriate dressing of abdominal wall anomalies – Coordinate MDT communication on perioperative care including silo and dressings, and safe transfer – Manage neonatal fluid resuscitation – Evaluate treatment options for abdominal closure	– Perform silo placement – Discuss post-operative monitoring for complications of operative management – Perform simple gastroschisis closure
Senior	– Describe the principles of neonatal enteral nutrition in the context of neonatal intestinal dysfunction – Formulate a surveillance plan for possible associated anomalies	– Justify selected option for abdominal closure in a particular patient – Lead MDT plan for the non-operative management of abdominal wall anomalies	– Manage complex periumbilical and central abdominal wall anomalies, including associated intra-abdominal anomalies – Evaluate indications and principles of surgical procedures for complex abdominal wall defect reconstruction

Teaching/learning: Outpatient clinic, on-call, ward rounds, Operating Theatre, CATS/DOGS,

Assessment: Mini-CEX, MOUSE, In training assessment, PAE, PPE, FEx

Other Resources: Gold Coast University Hospital Neonatal Surgery Course

3. Jaundice

Summary: Surgical causes of neonatal jaundice are uncommon but important paediatric surgical conditions. At the completion of training the Trainee will assess and manage infants with jaundice due to surgical conditions. Some congenital hepatobiliary disorders will present out of the neonatal period.

Linked Modules: Antenatal counselling, Acute Abdomen, Abdominal mass

Learning Links: PAE, PAE: Neonatal bilary atresia; Fluids Growth Nutrition Liver, other acquired disorders

Professional Skills of particular importance: Judgment and clinical decision making, Collaboration and teamwork

SET	Clinical assessment and investigations	Non-operative management	Operative management
Early	– Describe the anatomy and embryology of the hepatopancreaticobiliary system – Take a relevant history and perform a clinical examination – Propose a diagnostic/clinical algorithm for causes of jaundice in infancy – Interpret blood tests in a jaundiced infant	– Discuss the medical management of jaundice in infancy	
Mid	– Discuss malformations/ syndromes associated with biliary tract disorders – Discuss investigations (pathology, radiology) to identify causes of pathological jaundice – Describe aetiological theories, and classification of, congenital hepatobiliary disorders	– Describe the approach to management of congenital biliary disorders based on the morphological classification – Discuss the supportive management of a neonate/infant with liver disease – Participate in the optimisation of the patient for operative management pre and postoperatively	– Describe the surgical options for management of congenital biliary disorders – Assist in intraoperative cholangiography, liver biopsy – Perform an enteric anastomosis
Senior	– Interpret the investigations to assess severity of liver disease – Coordinate the multidisciplinary approach to evaluation of a neonate/infant with obstructive jaundice – Describe the criteria for consideration of liver transplant	– Formulate the management plan for a neonate/infant with congenital biliary disease of surgical aetiology, including timelines for treatment – Facilitate family meetings in discussion of prognostic factors and long- term outcomes – Coordinate pre and postoperative care for complex biliary reconstruction – Discuss the long-term outcomes including liver transplant outcomes in neonates/ infants with obstructive cholangiopathy	– Evaluate the surgical techniques in the management of congenital biliary disorders – Perform intraoperative cholangiography and liver biopsy – Discuss the operative principles and steps of correction of congenital biliary malformations – Assist in complex biliary reconstruction

Teaching/learning: Outpatient clinic, on-call, ward rounds, Operating Theatre, CATS/DOGS,

Assessment: Mini-CEX, MOUSE, In training assessment, PAE, PPE, FEx

4. Neonate masses or abnormal growth.

Summary: Congenital mass lesions and overgrowth syndromes are a rare but important component of paediatric surgical practice. Neonates with masses can present a diagnostic and management challenge. By the end of training the Trainee will be able to propose a logical diagnostic approach, recognise important syndromes and associations and adopt a lead role in the management of these patients.

Linked Modules: Antenatal counselling, Oncology, Neonate abdominal distention/vomiting

Learning Links: PAE; PPE: Sacrogoccygeal teratoma, limb anomalies, neonatal tumours, Congenital tumours, overgrowth syndromes, ovarian cyst, antenatal cyst - ovarian, duplication, choledochal, mesenteric, vascular anomalies, cloaca

Professional Skills of particular importance: Collaboration and teamwork, Communication

SET	Clinical assessment and investigations	Non-operative management	Operative management
Early	– Conduct clinical examination of a neonate and describe clinical findings of abnormal masses or growth – Describe dysmorphic features in a neonate – Describe potential investigations	– Initiate urgent senior input in appropriate settings – Participate in discussions and planning for appropriate transfer	– Assist with perioperative planning and management – Assist safely in a neonatal surgery
Mid	– Discuss common features of syndromes associated with overgrowth and neonatal and congenital tumours – Differentiate symptoms and signs indicating surgical pathology. – Propose differential diagnosis – Select appropriate investigations including metabolic, genetic and radiological modalities	– Diagnose conditions requiring early surgical intervention – Facilitate discussion in multidisciplinary team	– Perform neonatal laparotomy – Perform limited bowel resection with anastomosis – Perform resection of simple intra-abdominal cysts
Senior	– Integrate clinical information to develop a diagnosis for a neonate with a mass or abnormality of growth – Interpret appropriate investigations – Anticipate and counsel early, medium and long term outcomes of management – Discuss screening requirements for overgrowth syndromes – Discuss follow up and surveillance for ongoing management of neonatal and congenital tumours	– Formulate a management plan and coordinate care between care teams – Determine when non-operative and surgical interventions are appropriate – Anticipate clinical risks and complications associated with management options – Lead conversations with families diagnosis, prognosis and management (including redirection of care when appropriate)	– Perform resection of neonatal and congenital tumours – Perform neonatal laparoscopy

Teaching/learning: Outpatient clinic, on-call, ward rounds, Operating Theatre, CATS/DOGS,

Assessment: Mini-CEX, MOUSE, In training assessment, PAE, PPE, FEx

5. Neonatal respiratory distress

Summary: Sick neonates, especially premature or low birth weight infants, often have non-specific presentations. Respiratory distress and abdominal distension can be indicators of a variety of pathologies. Due to the nature of surgical presentations the Paediatric Surgeon plays a vital role in the assessment and management of neonates with surgical and non-surgical disease. By the completion of training the Trainee will play an active role in the Neonatal intensive care of infants with sepsis and respiratory distress.

Linked Modules: Tracheo-oesophageal disorders, Lung lesions, Diaphragmatic defects, Neonatal abdominal distension/vomiting, Child with major comorbidities and interdisciplinary care, Vascular anomalies, Abdominal mass, Neonate masses or abnormal growth, Head and neck lumps

Learning Links: PAE, PPE: Embryology/Developmental, fluids/growth/nutrition, Sepsis, pneumothorax

Professional Skills of particular importance: Leadership and management, Collaboration and teamwork

SET	Clinical assessment and investigations	Non-operative management	Operative management
Early	– Discuss the common causes of respiratory distress in neonates – Discuss salient findings of history and examination – Describe congenital conditions of the airway and GI tract that can lead to respiratory compromise	– Initiate emergency supportive care – Initiate emergency referral and senior support for cases who need emergency intervention	– Place nasogastric tube – Perform needle decompression tension pneumothorax, pneumoperitoneum
Mid	– Using history, examination and basic investigations differentiate surgical from non-surgical causes of respiratory distress – Discuss congenital lung lesions and their postnatal manifestations – Discuss complex aero-digestive malformations	– Facilitate multidisciplinary discussions	– Perform insertion chest drain Perform open/close thoracotomy/ laparotomy – Perform Simple diaphragmatic hernia repair – Describe/assist surgical airway
Senior	– Integrate clinical information to establish a diagnosis – Evaluate the role of advanced supportive care techniques, including ventilatory strategies & extra-corporeal life support (ECLS)	– Initiate a management plan – Participate in conversations with families about severity of risks and redirection of care – Anticipate need for and coordinate MDT involvement – Anticipate and counsel regarding potential early, medium and long term outcomes of management. – Manage complications	– Perform oesophageal atresia/ tracheo-oesophageal repair – Perform bronchoscopy – Perform lung parenchymal resection, anatomical and non-anatomical – Perform emergency neonatal laparotomy, bowel biopsy, bowel anastomosis, stoma formation – Describe/assist emergency airway procedures – Justify intra-operative decisions based on operative findings and patient status

Teaching/learning: Outpatient clinic, on-call, ward rounds, Operating Theatre, CATS/DOGS,

Assessment: Mini-CEX, MOUSE, In training assessment, PAE, PPE, FEx

6. Neonatal intestinal insufficiency

Summary: Intestinal insufficiency is a rare but devastating clinical scenario. Insufficiency can be due to anatomic or physiologic issues and may be a primary presentation or a complication of other disease processes and interventions. Due to the nature of conditions managed by Paediatric surgeons, and the surgery performed the Paediatric Surgeon must have a high awareness of issues surrounding intestinal length and function. Management of intestinal insufficiency is complex and multi-disciplinary. By the completion of training the Trainee will be able to adopt a leading role in the assessment and management of infants with intestinal insufficiency.

Linked Modules: Neonate with abdominal distension/vomiting, Neonatal abdominal wall defects, Neonatal respiratory distress, Jaundice, Antenatal counselling, Gut dysfunction

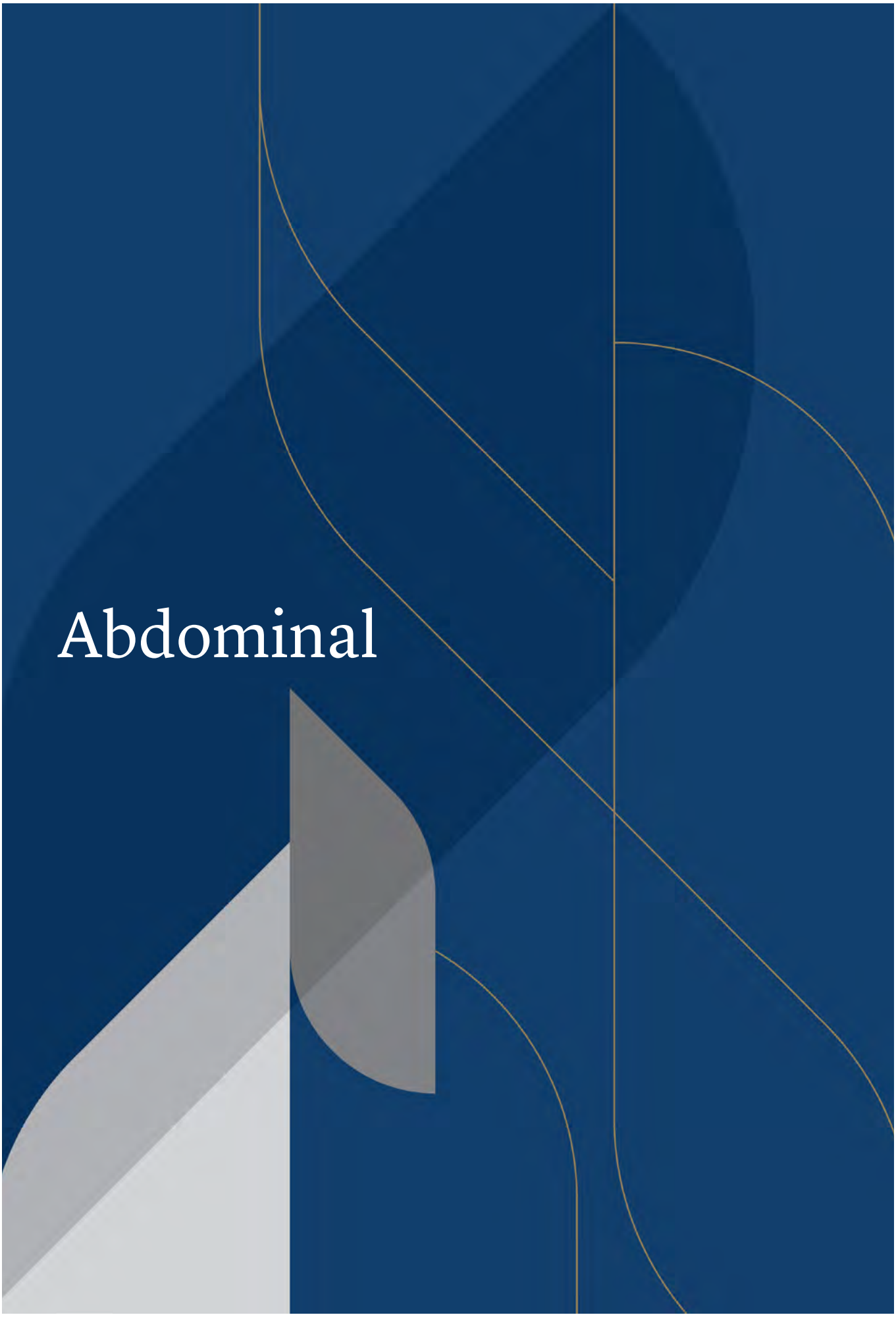
Learning Links: Anatomy/Embryology syllabus; PPE: Embryology/Developmental: GI Tract, Malrotation, Ano-rectum Neonatal: Cystic fibrosis and meconium ileus, CHI, Hirschsprung's disease, Chylous ascites & Chylothorax Fluids/Nutrition/Growth Infection/inflammation: IBD; Other Acquired Abdominal disorders: Hepatobiliary disease, Pancreatic disease

Professional Skills of particular importance: Collaboration and teamwork, Communication

SET	Clinical assessment and investigations	Non-operative management	Operative management
Early	– Discuss the normal nutritional needs and growth in the neonatal period – Discuss anatomic and physiologic determinants of gut function	– Work with team to implement graduated enteral (re)feeding plan appropriate to clinical scenario and monitor response	– Assist laparotomy, assess bowel length – Assist with venous access
Mid	– Discuss long term complications of parenteral nutrition, evaluate regimes and techniques to avoid complications – Initiate and interpret biochemical assessment of nutritional status – Discuss neuro-developmental factors (primary and secondary) that impact refeeding and intestinal rehabilitation	– Propose appropriate measures to address feeding and nutrition. – Initiate non-operative management to support intestinal function (eg. Pharmacologic and non-pharmacologic management of GORD, and motility) – Anticipate complications of stomas (including high output) – Anticipate complications associated with venous access	– Perform laparotomy, laparoscopy – Perform Gastrostomy, Stoma formation, Stoma closure – Perform central venous access -Standard – Perform bowel resection
Senior	– Evaluate factors and techniques for preservation of bowel in complex neonatal cases – Justify management plans including active non-operative management	– Participate in MDT management of children with intestinal insufficiency & nutritional failure – Incorporate principles of preservation of viable bowel into surgical decision making – Anticipate complications from surgical interventions – Discuss social and facility factors that affect care delivery – Lead discussions with family/carers around surgical issues in management of nutritional failure	– Perform adhesiolysis, intestinal biopsy, fundoplication, bowel resection, Jejunostomy, formation of laparostomy – Teach Central Venous access – Perform central venous access in complex and repeat cases – Discuss bowel lengthening, management of long segment Hirschsprung's disease, revision surgery, intestinal transplant

Teaching/learning: Outpatient clinic, on-call, ward rounds, Operating Theatre, CATS/DOGS, Multi-disciplinary Team meetings

Assessment: Mini-CEX, MOUSE, In training assessment, PAE, PPE, FEx


Abdominal

1. The acute abdomen

Summary: Presentations of acute abdominal disorders are core paediatric surgery. There is a large range of common and uncommon conditions that can present with acute abdominal symptoms. Management of the acute abdomen requires knowledge of the anatomy, embryology and pathophysiology of all intra-abdominal, pelvic and retroperitoneal contents. The technical skills utilised in managing the acute abdomen and its sequelae constitute foundational surgical skills. In this topic the Trainee will develop comprehensive knowledge and skills in the clinical assessment, diagnosis, and management of acute abdominal complaints in paediatric patients. The topic includes patient assessment, emergency resuscitation, rational investigations, formulating a diagnosis, engaging the patient, family or carer in management plans and interacting with colleagues to implement pre-operative, operative and post operative care plans. At the completion of training the Trainee will be independent in managing children with acute abdominal complaints, will adopt a leadership role in developing and maintain standards, provide collegial support to non-paediatric surgeons providing care for children outside of their immediate institution, and will be able to teach junior medical staff in the management (including surgical) of acute abdominal disorders.

Linked Modules: Neonatal Abdominal distension/vomiting; Major Trauma; Urinary Tract Infection; Groin lumps; Gut dysfunction; Child, family and community; RuFUS, Perioperative care, Child with co-morbidities and interdisciplinary care

Learning Links: Anatomy/Embryology syllabus; Pathophysiology syllabus: Embryology; Neonatal; Fluids/Growth/Nutrition; Trauma/Burns; Infection/Inflammation: Neoplasia; Other Acquired abdominal disorders; Genito-Urinary

Professional Skills of particular importance: Leadership and management, Scholarship and teaching

SET	Clinical assessment and investigations	Non-operative management	Operative management
Early	– Discuss the anatomy of the abdomen, pelvis and inguinal region – Discuss disease processes that present as an acute abdomen – Diagnose acute surgical abdomen through history and examination – Diagnose an acutely unwell surgical patient	– Initiate appropriate resuscitation for an acutely unwell patient – Describe patients with peritonism and sepsis and initiate urgent treatment – Describe investigations and non-operative interventions (Upper GI contrast study, Air Enema reduction) – Coordinate investigations and arrangements for definitive surgical care – Initiate analgesia both acute and post-operative	– Describe surgical interventions for acute abdominal diagnoses – Perform diagnostic laparoscopy, lap appendix, laparotomy (open close abdomen) – Assist with bowel resection, definitive intra-abdominal surgery – Discuss post operative management
Mid	– Discuss the pathophysiology of abdominal disease to the clinical manifestations	– Implement appropriate investigations, or interventions – Discuss cases that require urgent surgical intervention – Propose appropriate non-operative, management or interventions (IR guided drainage etc)	– Evaluate management options (damage control v definitive care, bowel anastomosis v Stoma formation) – Perform bowel resection anastomosis, stoma formation – Management of acute adnexal pathology
Senior	– Interpret conflicting clinical information in the process of diagnosing acute abdominal presentations – Anticipate complications and formulate strategies to manage them as they arise	– Evaluate treatment options with competing clinical priorities – Adopt lead role coordinating resource management for emergency capacity – Adopt lead role coordinating services and colleagues in other centres to provide care	– Perform definitive surgical intervention for acute abdominal presentations in complicated situations – Teach abdominal surgery, (open close abdomen, diagnostic laparoscopy, Lap Appendix) – Support services and colleagues in other centres to provide care

Teaching/learning: Outpatient clinic, on-call, Ward rounds, Operating Theatre, CATS/DOGS,

Assessment: Mini-CEX, MOUSE, In training assessment, PAE, PPE, FEx

Other Resources: Laparoscopy training Labs/Simulation courses, CCrISP,

2. Gut dysfunction

Summary: Disorders of bowel function can present significant diagnostic and management challenges to the Paediatric Surgeon. These disorders have acute and chronic presentations. Some disorders of gut function are due to surgical disease or the sequalae of surgical treatment, others are manifestations of systemic disease processes or idiopathic. The Paediatric Surgeon will adopt a leading role in the assessment and co-ordination of care. Surgical interventions for gut dysfunction are varied according to pathology and treatment aims. At the completion of training the Trainee will be able to assess and manage children and infants who have disorders of GI function. The Trainee will be able to coordinate investigation, and assessment of disorders of GI motility and function. The Trainee will adopt a lead role in multidisciplinary assessment, and investigation. The Trainee will be able to perform and interpret invasive diagnostic procedures, and surgical procedures to manage symptoms and improve quality of life. The Trainee will be able to describe and evaluate advanced surgical procedures for the management of complex intestinal disorders.

Linked Modules: Acute Abdomen, Neonate with abdominal distension/vomiting, Infant child with vomiting/reflux, Neonatal abdominal wall defects

Learning Links: Anatomy/Embryology syllabus; PPE: Embryology/Developmental: GI Tract, Malrotation, Ano-rectum Neonatal: Cystic fibrosis and meconium ileus, CHI, Hirschsprung's disease, Chylous ascites & Chylothorax Fluids/Nutrition/Growth Infection/inflammation: IBD; Constipation and Faecal incontinence; Other Acquired Abdominal disorders: Hepatobiliary disease, Pancreatic disease

Professional Skills of particular importance: Judgment and clinical decision making, Communication, Collaboration and teamwork

SET	Clinical assessment and investigations	Non-operative management	Operative management
Early	– Discuss the anatomy and normal function of the gastrointestinal tract – Discuss normal growth and nutrition from birth through to adolescence, identify and describe variations from normal – Perform patient assessment including relevant history and appropriate clinical examination.	– Describe pharmacologic and non-pharmacologic management of intestinal disorders (eg. GORD, Constipation) – Communicate with other disciplines to coordinate referral, investigation and management – Perform a nutritional assessment	– Facilitate arrangements for operative management – Perform EUA +/-Sigmoidoscopy/ proctoscopy, rectal washout, rectal biopsy, diagnostic laparoscopy – Replace/troubleshoot enteral devices (eg Gastrostomy/ACE buttons) – Describe bowel irrigation techniques
Mid	– Discuss the pathophysiology of gastrointestinal function and relate to clinical manifestations of disordered digestive function or nutrition – Discuss the peri-operative implications and long term sequalae of obesity in Childhood and adolescence – Interpret investigations of GI function and clinical assessment of growth and nutrition	– Propose appropriate measures to address feeding and nutrition – Initiate non-operative management to support intestinal function (eg. Pharmacologic and non-pharmacologic management of GORD, and Constipation) – Communicate with Families and care givers	– Evaluate operative management options – Perform gastrostomy, stoma formation, stoma closure
Senior	– Interpret investigations and diagnose complex disorders of GI function – Justify management plans including active non-operative management – Evaluate proposed diagnoses and management plans	– Adopt a Leadership role in multidisciplinary approach to intestinal failure and complex growth/nutritional disorders – Anticipate complications from surgical interventions – Manage postoperative care and complications of stomas – Explain anticipated outcome to patient, carer – Discuss social and facility factors that affect care delivery	– Perform upper GI endoscopy, intestinal biopsy, fundoplication, bowel resection, Jejunostomy, appendico-caecostomy – Perform definitive surgery for rectosigmoid-colonic Hirschsprung's, – Teach Laparoscopy, gastrostomy, stoma formation/closure – Discuss caecostomy, oesophageal exclusion, management of achalasia, bowel lengthening, management of long segment Hirschsprung's disease, revision surgery, intestinal transplant, bariatric surgery

Teaching/learning: Outpatient clinic, on-call, Ward rounds, Operating Theatre, CATS/DOGS, Multi-disciplinary Team meetings

Assessment: Mini-CEX, MOUSE, In training assessment, PAE, PPE, FEx

3. The infant or child with vomiting or reflux

Summary: Vomiting and gastro-oesophageal reflux (GOR) symptoms are common in childhood. The Paediatric Surgeon must identify cases of surgical relevance, most obviously vomiting as a sign of GI obstruction and possible surgical emergency, but also demonstrate an understanding of cases where surgical intervention may provide improvement in symptoms and quality of life. This requires an understanding of normal nutrition, growth and GI physiology as well as an understanding of common syndromes and co-morbidities that complicate the presentation and treatment of vomiting/reflux symptoms. At the completion of training the Trainee will be able to diagnose and manage surgical causes of vomiting. The Trainee will adopt a leading role in the multi-disciplinary assessment and management of children with feeding disorders and GOR.

Linked Modules: Acute Abdomen, Gut dysfunction, Neonate with abdominal distension/Vomiting

Learning Links: PAE; PPE: Embryology and development, Neonatal, Fluids/Nutrition/Growth; Other acquired abdominal disorders

Professional Skills of particular importance: Judgment and clinical decision making, Communication, Collaboration and teamwork

SET	Clinical assessment and investigations	Non-operative management	Operative management
Early	– Evaluate an infant/child with vomiting differentiate surgical from non-surgical causes of vomiting, and identify cases requiring urgent management – Discuss the anatomy and physiology of the gastro-oesophageal junction – Discuss the embryology of gut rotation anomalies – Discuss investigations for a vomiting child/infant – Interpret electrolyte and acid base investigations	– Assess hydration status and initiate appropriate fluid management – Monitor resuscitation and ongoing fluid-electrolyte management – Describe non-operative management options in a child with upper GI motility disorders/GORD	– Discuss surgical approaches and devices for feeding support – Coordinate operative management and facilitate multidisciplinary involvement – Perform laparoscopy – Replace/troubleshoot enteral stomas/devices (eg Gastrostomy/ACE buttons) – Describe pyloromyotomy, fundoplication, gastrostomy – Describe principles of malrotation surgery
Mid	– Interpret clinical manifestations of vomiting infant/child – Initiate appropriate investigations as per clinical scenario – Interpret upper GI series, plain films, USS, CT	– Propose nutritional and pharmacological strategies (eg. GORD, pancreatitis) – Communicate with families/ caregivers – Facilitate multidisciplinary approach in the management of conditions (eg, GORD, achalasia, pancreatitis)	– Perform pyloromyotomy – Perform gastrostomy – Assist in laparotomy, formation of feeding stomas, fundoplication
Senior	– Interpret anatomical and functional investigations in the context of the clinical presentation and formulate management plan in the context of a MDT – Evaluate investigation modalities in conditions (eg: GORD, achalasia)	– Adopt leadership role in multidisciplinary discussions with treating teams and relay outcomes appropriately to families – Anticipate complications from management and assess long term outcomes of the disease process.	– Perform correction of malrotation – Perform: UGI endoscopy, biopsies, fundoplication, and management of upper GI obstruction – Discuss and evaluate complex techniques to manage upper GI conditions (eg Gastric exclusion, oesophageal dissociation)

Teaching/learning: Outpatient clinic, on-call, ward rounds, Operating Theatre, CATS/DOGS,

Assessment: Mini-CEX, MOUSE, In training assessment, PAE, PPE, FEx

4. GI bleeding

Summary: GI bleeding can be upper or lower, acute or chronic. In this topic the Trainee will develop the knowledge and skills to assess and manage an infant or child with GI bleeding. The Trainee will be able to assess the patient and identify salient immediate management priorities. At completion of training the Trainee will be able to formulate a rational approach to investigations and perform appropriate diagnostic and therapeutic procedures for the child who presents with GI bleeding.

Linked Modules: Acute Abdomen, Gut Dysfunction, Neonatal with abdominal distention/vomiting, Vascular Anomalies, Trauma, Ingestions and foreign bodies

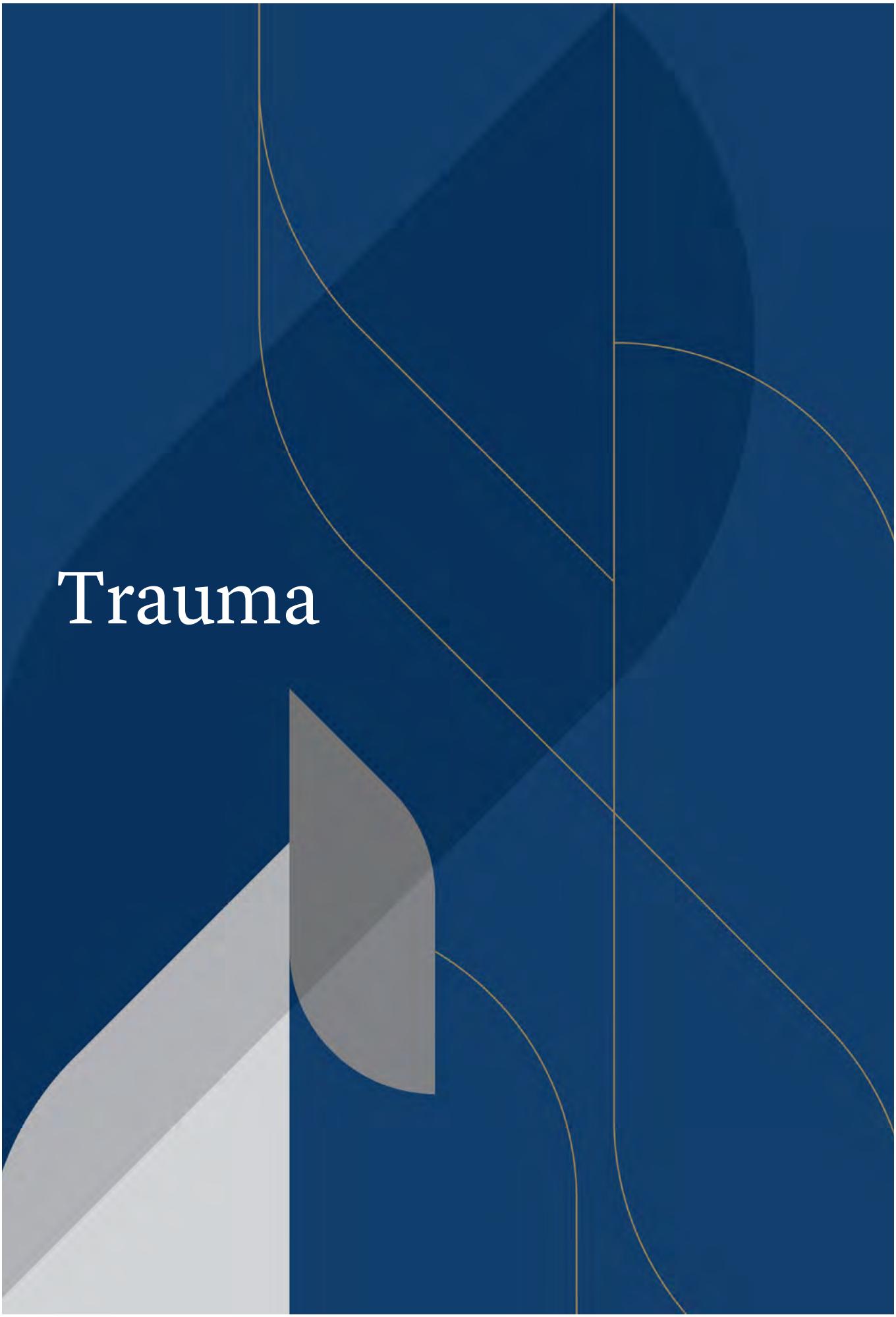
Learning Links: PAE; PPE: Embryology/Developmental: GI tract, Malrotation, Vascular anomalies, Fluids/nutrition/Growth: Normal homeostasis, Trauma/Shock, Liver Infection/Inflammation: Systemic conditions with surgical implications Neoplasia: Vascular anomalies Other Acquired abdominal disorders: GI Bleeding

Professional Skills of particular importance: Collaboration and teamwork, Judgement and clinical decision making

SET	Clinical assessment and investigations	Non-operative management	Operative management
Early	– Assess patient and diagnose shock in the acutely bleeding patient – Discuss the anatomy and embryology of the abdominal viscera and blood supply – Describe investigations for the assessment of a patient with GI bleeding	– Initiate immediate resuscitation – Describe massive transfusion principles	– Describe options for control of haemorrhage – Discuss endoscopy, laparoscopy, and laparotomy – Perform EUA +/- sigmoidoscopy
Mid	– Describe how anatomical and physiologic factors contribute to the presentations of GI bleeding – Interpret haemodynamic and haemostatic factors and apply this to management plan – Evaluate the predictive value and diagnostic accuracy of investigations for GI bleeding Propose appropriate investigations for the patient with GI bleeding	– Coordinate management of the haemodynamically unstable bleeding patient – Evaluate the roles of interventional radiology, endoscopy, specialist gastroenterologist care and surgery in the control of GI bleeding	– Perform laparoscopy and assess intrabdominal organs
Senior	– Initiate investigations. – Integrate clinical information to develop a diagnosis for GI bleeding	– Anticipate clinical risks associated with management options – Coordinate multidisciplinary management	– Perform laparotomy/laparoscopy, bowel resection, definitive management of bleeding – Perform diagnostic endoscopy – Perform thoracotomy – Assist acute vascular control and vascular repairs

Teaching/learning: Outpatient clinic, on-call, Ward Rounds, Operating Theatre, CATS/DOGS,

Assessment: Mini-CEX, MOUSE, In training assessment, PAE, PPE, FEx


Trauma

1. Management of major trauma

Summary: Trauma is an important cause of morbidity and mortality in paediatric patients, and the management of these patients forms a core part of paediatric surgery practice. This module will include a systematic approach to major trauma presentations including both blunt and penetrating trauma. At the completion of training, the Trainee will be expected to assess, investigate and manage paediatric patients with injuries, taking into account the physical, social, cultural and psychological needs of the child. The Trainee will be ready to assume a leadership role in managing trauma patients and trauma systems in the hospital and region of referral. The Trainee will be able to adopt a leadership role in health promotion and trauma prevention strategies.

Linked Modules: Management of burns, Child, family, community, RuFUS

Learning Links: PPE syllabus

Professional Skills of particular importance: Health advocacy, Collaboration and teamwork, Leadership and management

SET	Clinical assessment and investigations	Non-operative management	Operative management
Early	– Apply EMST principles and knowledge of physiology and anatomy to clinical assessment – Correlate patterns of injury with mechanism and clinical presentation – Discuss factors associated with inflicted injury	– Perform primary survey and secondary survey utilizing EMST principles – Initiate early resuscitation and stabilization – Initiate emergency consultation for multi-system injuries, engage in Multidisciplinary management of major trauma – Perform tertiary surveys and initiate management of missed injuries	– Perform pleural decompression – Perform emergency vascular access – Perform emergency (in trauma bay) haemostatic manoeuvres – Assist in trauma laparotomy/ thoracotomy
Mid	– Evaluate the role of imaging in paediatric trauma – Discuss management priorities in penetrating and blunt trauma – Discuss complicating mechanisms such as inhalation, burns, explosions, crush injuries – Interpret investigations to inform management plan	– Discuss haemostatic resuscitation in a bleeding child – Formulate appropriate investigations after secondary survey – Evaluate strategies for management of solid organ injuries – Lead discussion regarding patient disposition – Lead ongoing multi-disciplinary team involvement	– Discuss indications and describe techniques for emergency airway. – Evaluate role of Minimally invasive surgery for trauma – Perform suprapubic cystostomy – Discuss indications and describe techniques for fasciotomy
Senior	– Diagnose the patient requiring damage control strategy – Discuss role of surgeon in disaster management – Discuss opportunities for health advocacy – Anticipate long term sequelae of trauma	– Anticipate complications and sequelae – Lead MDT definitive management strategy for inter- and intra-hospital multi-trauma patient	– Perform emergency laparotomy/ thoracotomy – Describe principles of resuscitative surgery – Diagnose and emergently manage injuries that may require specialist involvement e.g. major liver/vascular injuries – Discuss treatment options for complex genitourinary injuries – Formulate management plan for a child with penetrating injury

Teaching/learning: Outpatient clinic, Ward Rounds, on-call, Operating Theatre, CATS/DOGS,

Assessment: Mini-CEX, MOUSE, In training assessment, PAE, PPE, FEx

Other Resources: APLS, EMST & DSTC Courses

2. Management of burns

Summary: Burns are a common mechanism of injury in paediatric patients, and the management of these patients forms a core part of paediatric surgery practice. This module will include acute and delayed management of major and minor burns and their sequelae. At the completion of training, the Trainee will be expected to assess, investigate and manage paediatric patients with burn injuries, taking into account the physical, social, cultural and psychological needs of the child.

Linked Modules: Trauma, Child, family and community, Ingestions and Foreign Bodies, RuFUS

Learning Links: PPE syllabus; Burns; inhalational injuries

Professional Skills of particular importance: Health advocacy, Collaboration and teamwork, Leadership and management

SET	Clinical assessment and investigations	Non-operative management	Operative management
Early	– Assess the acute burn presentation utilising the principles of EMSB – Describe the appearances of different depths of burn and estimation of area of burn relative to body surface area (TBSA) – Anticipate potential respiratory compromise – Correlate patterns of injury with mechanism and clinical presentation – Discuss factors associated with inflicted injury	– Describe emergency management of burns trauma patients including first aid – Initiate and monitor burns specific fluid resuscitation – Initiate management of respiratory compromise – Discuss principles of post operative management and care of cricothyroidotomy and tracheostomy – Counsel patient and family regarding expected management and outcome of minor burns	– Perform escharotomy – Describe features of the burnt airway on endoscopy – Coordinate theatre team and equipment for burns surgery – Perform non-excisional debridement and dressing of acute burns
Mid	– Discuss indications for operative intervention including timing – Anticipate complications of burns pre and post intervention – Discuss long term outcomes of burn injuries	– Justify choice of burns dressings – Apply complex dressings, including negative pressure wound therapy – Participate in MDT for non-major burns	– Perform definitive operative management of an uncomplicated small to medium sized burn
Senior	– Discuss long term outcomes of major burn injuries – Discuss role of surgeon in disaster management – Discuss opportunities for health advocacy	– Adopt leadership role in MDT for holistic management of major burn patients – Anticipate long term sequelae of a major burn injury – Describe management of complex burn scars – Lead MDT management strategy for inter- and intra-hospital major burn patient	– Evaluate alternatives to split skin graft – Assist definitive operative management of a major burn including special areas – Assist operative management of complex burn scars

Teaching/learning: Outpatient clinic, on-call, Ward round, Operating Theatre, CATS/DOGS,

Assessment: Mini-CEX, MOUSE, In training assessment, PAE, PPE, FEx

Other Resources: EMSB Course

3. Ingestions and foreign bodies

Summary: An important cause of morbidity for paediatric patients is the ingestion of caustic substances or foreign bodies. Due to the inquisitive nature of children and their active lifestyles foreign bodies may also become lodged in orifices and soft tissues. By the completion of training the Trainee will be able to assess and provide emergency management to a child with an ingestion or swallowed foreign body. Depending on scope of practice and supporting services the trainee will be able to assist in the management of children with foreign bodies other than the GI tract.

Linked Modules: Trauma, Management of burns, Acute Abdomen, GI Bleeding, Haematuria, Introital masses, Vaginal bleeding/ discharge, Tracheo-oesophageal disorders, Skin & Soft tissue lesions, RuFUS, Child, Family, Community

Learning Links: PAE; PPE;

Professional Skills of particular importance: Collaboration and teamwork; Judgement and clinical decision making

SET	Clinical assessment and investigations	Non-operative management	Operative management
Early	– Anticipate features on history and examination that would require emergent management – Initiate investigations to identify potential foreign bodies	– Initiate resuscitation including emergency airway management – Discuss non-operative management of foreign bodies	– Perform EUA, Cystoscopy/ vaginoscopy, proctoscopy removal foreign body – Perform SPC – Perform Pleural drain
Mid	– Discuss pathophysiology of airway and upper GI ingestions/ burns – Discuss potential complications of ingested foreign bodies	– Coordinate interdisciplinary care of patient with upper GI or airway injury – Discuss haemostatic resuscitation in a bleeding child	– Perform oesophagoscopy for foreign body assessment of mucosal injury – Perform laparoscopy/enterotomy/ bowel resection
Senior	– Anticipate clinical progression of oesophageal injuries and formulate an assessment and management strategy	– Coordinate transfer/local treatment for remote patient	– Perform oesophagostomy – Perform thoracotomy oesophageal repair/resection, control of haemorrhage – Describe/perform bronchoscopy for foreign body – Describe/assist surgical airway

Teaching/learning: Outpatient clinic, on-call, Ward round, Operating Theatre, CATS/DOGS,

Assessment: Mini-CEX, MOUSE, In training assessment, PAE, PPE, FEx

Other Resources: EMSB Course, EMST, APLS

Inguinoscrotal

1. Groin Lumps

Summary: Groin masses are common core paediatric surgical presentations. A broad range of pathologies can present as lumps in the groin. The Trainee will develop clinical and surgical skills to manage children who present with groin lumps. The Trainee will develop a diagnostic approach.

Management plans will be formulated according to differential diagnosis. Operative management across a variety of differential diagnoses will be required.

Linked Modules: Undescended Testes, Vascular anomalies, Skin and soft tissue infections, Child with genital anomalies,

Learning Links: PAE; PPE: Embryology Inguino-scrotal/varicocele/vascular anomalies, Neoplasia lymphoma/gonadal tumours, Skin and Soft tissue infections

Professional Skills of particular importance: Judgment and clinical decision making, Scholarship and teaching

SET	Clinical assessment and investigations	Non-operative management	Operative management
Early	– Perform relevant history and examination to propose a differential diagnosis – Discuss urgent conditions, incarcerated hernia, torsion of gonad, infections/sepsis – Discuss anatomy and embryology of inguinal region – Evaluate the role of imaging in assessment of groin lump	– Initiate appropriate analgesia – Discuss role of antibiotics in inguinoscrotal infections – Reduce inguinal hernia including principles of taxis manouevre	– Perform incision and drainage of abscess – Describe/assist surgery for inguinal and femoral hernias
Mid	– Diagnose accurately conditions which present as a lump in the inguino-scrotal region – Interpret relevant imaging in assessment of groin lump – Discuss benign and malignant testis lesions	– Evaluate management options for varicocele, vascular lesions, lymphatic malformations	– Perform surgery for Inguinal hernia (non-neonatal) – Perform Lymph node biopsy – Describe surgery for recurrent inguinal hernia – Perform varicocele repair – Perform radical orchiectomy
Senior	– Discuss variations of sex characteristics that present with inguinoscrotal swelling	– Lead MDT discussions for complex lesions of the inguinal region including recurrence and vascular malformations – Manage patient with irreducible hernia – Lead MDT care for patients with testis tumours	– Independently perform surgery for Inguinal hernia (incl neo-natal and irreducible) – Perform testis sparing resection where appropriate – Teach inguinal hernia repair – Anticipate and manage complications – Perform surgery for recurrence

Teaching/learning: Outpatient clinic, on-call, operating theatre, Multi-disciplinary Team Meetings (Vascular, Oncology, VSC), CATS and DOGs

Assessment: In-training Assessment, Mini-CEX, MOUSE, PAE, PPE, FEx

2. Undescended testes

Summary: Anomalies of testicular position are a core Paediatric Surgical condition. The Trainee will develop the clinical and surgical skills to manage boys with undescended testes, both palpable and impalpable. The Trainee will understand the significance of undescended testes andassociated conditions. By completion of training the Trainee will be able to teach inguinal orchidopexy and manage complications.

Linked Modules: Child with genital anomalies, Penis and Foreskin anomalies, Groin lumps, Abdominal mass, Acute Abdomen

Learning Links: PAE Syllabus; PPE Syllabus: Embryology Inguino-scrotal

Professional Skills of particular importance: Teacher, Health Advocacy

SET	Clinical assessment and investigations	Non-operative management	Operative management
Early	– Take history and perform examination for undescended testes – Discuss embryology of gonad formation and descent – Evaluate the role of imaging in the assessment of testicular position	– Describe indication and timing of surgery – Explain operation and timing to family – Explain to family natural history and when surgery not required	– Perform laparoscopy
Mid	– Discuss pathophysiology of undescended testes and complications – Differentiate on clinical assessment the diagnosis of undescended testis requiring surgery and retractile testis not requiring surgery. – Formulate a management plan for a boy referred with undescended testes	– Counsel family about findings, discuss vanishing testis, long term outcomes	– Perform inguinal orchidopexy – Perform first stage Fowler-Stephens – Perform testicular biopsy – Perform orchidectomy
Senior	– Determine instances when orchidopexy may be inappropriate	– Formulate a management plan for unexpected findings (eg VSC, bilateral testicular agenesis)	– Perform orchidopexy and manage complications independently – Perform second stage Fowler-Stephens – Perform testicular prosthesis insertion – Teach inguinal orchidopexy – Perform revision orchidopexy

Teaching/learning: Outpatient clinic, on-call, Operating Theatre, CATS/DOGS

Assessment: Mini-CEX, MOUSE, In training assessment, PAE, PPE, FEx

3. Penis and foreskin abnormalities

Summary: Questions about the appearance and function of the external male genitalia are common and core paediatric surgery referrals. In this module the Trainee will develop a framework to evaluate and manage boys who present with variations and abnormalities of the penis, including identification of potential Variations of Sex Characteristics (VSC). The Trainee will be able to assess and counsel boys and families about variations of the foreskin, penile size and shape, as well as recognise conditions such as hypospadias, epispadias, megaprepuce etc. The Trainee will be able to identify conditions amenable to surgical intervention and those for which no surgery is appropriate. By the completion of training the Trainee will perform surgery where appropriate, be able to identify and manage complications, and demonstrate understanding of the complexities of severe disorders.

Linked Modules: Child with genital anomalies, Undescended Testes, Hypospadias, Child, Family, Community

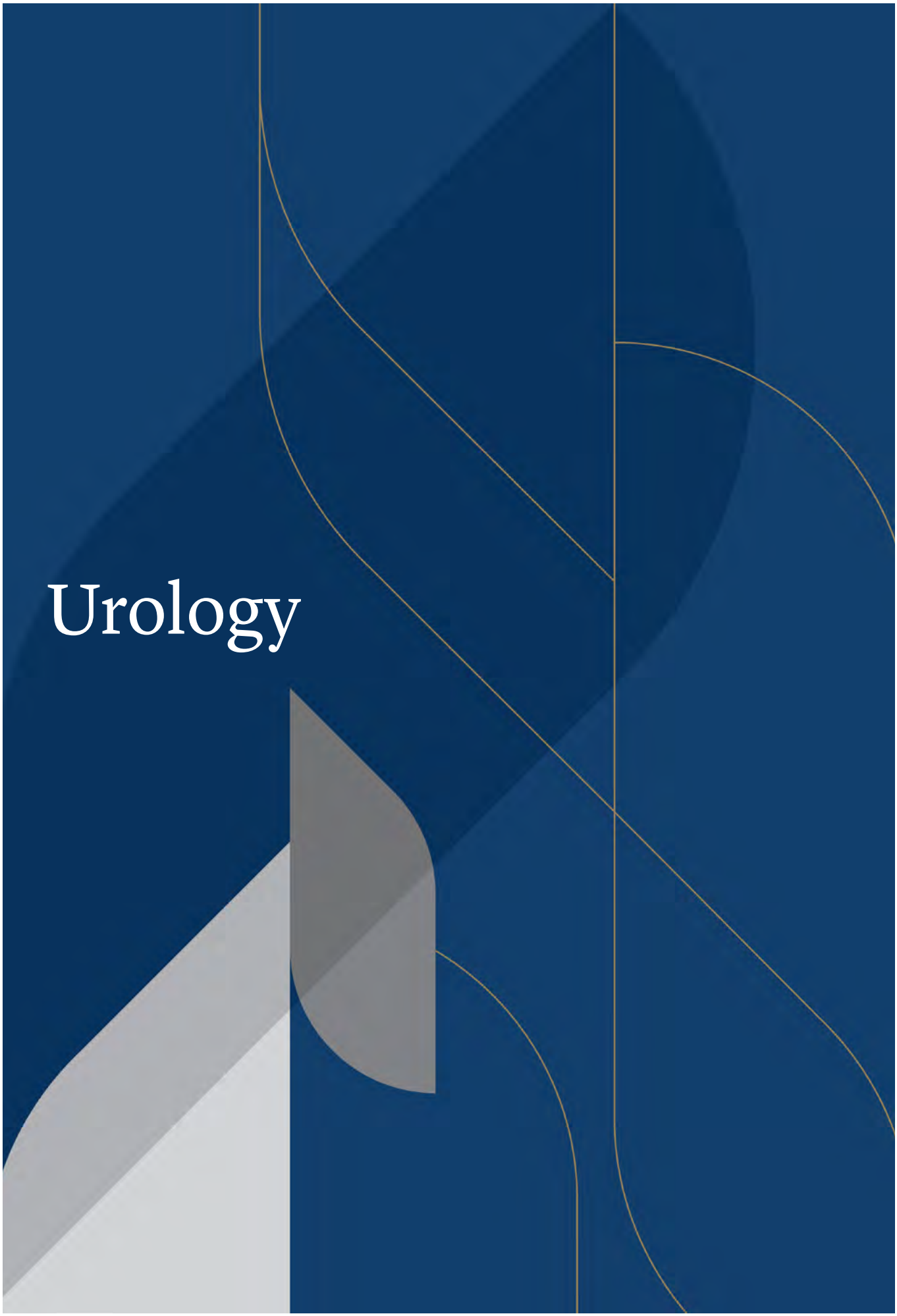
Learning Links: PAE; PPE:

Professional Skills of particular importance: Communication, Professionalism

SET	Clinical assessment and investigations	Non-operative management	Operative management
Early	– Describe the natural history of the foreskin – Diagnose conditions requiring emergency management – Discuss the anatomy & embryology of the penis and identify variations of development	– Lead discussion with family about the natural history of foreskin conditions – Initiate non-operative management of physiological phimosis – Perform manual reduction of paraphimosis	– Perform elective circumcision – Perform suprapubic catheter
Mid	– Discuss functionally significant variations in penile anatomy – Diagnose complications – Evaluate voiding function – Discuss role and timing of surgery – Discuss salient ethical and medico-legal considerations	– Counsel patients and guardians about the role and outcomes of management for routine conditions – Formulate a management plan for hypospadias h – Discuss investigation and management of priapism – Manage circumcision complications	– Discuss surgical techniques for penile surgery – Perform operative management of meatal stenosis – Perform preputioplasty
Senior	– Investigate potential VSC or endocrine disorders – Initiate referral for VCS multidisciplinary assessment	– Discuss long term issues associated with penile conditions, and potential complications of surgery – Counsel patients and guardians about the role and outcomes of management for complex conditions – Refer to and evaluate role of multidisciplinary team in conditions of VSC	– Perform emergency circumcision – Perform surgery for megaprepuce/ buried penis, rotation and chordee anomalies – Perform distal hypospadias surgery – Assist, discuss and evaluate procedures for proximal hypospadias – Discuss and evaluate procedures for VSC

Teaching/learning: Outpatient clinic, on-call, ward rounds, operating theatre, CATS/DOGS

Assessment: Mini-CEX, MOUSE, In training assessment, PAE, PPE, FEx


Urology

1. Renal tract dilatation

Summary: Renal tract dilatation commonly presents asymptomatically through antenatal screening or as an incidental finding. But may also present with symptoms of pain, UTI, or with haematuria. Assessment of renal tract dilatation requires knowledge of anatomy, embryology and function of the renal tract. Knowledge of medical imaging techniques and their interpretation are key skills. By the completion of training the Trainee will be able to identify and manage obstruction in the renal tract. The Trainee will adopt a leading role in the delivery of care to infants and children with non-obstructive dilatation.

Linked Modules: Acute Abdomen, Haematuria, Lower urinary tract dysfunction, Renal dysplasia/Upper tract Anomalies, Antenatal counselling

Learning Links: PAE, PPE: hydronephrosis, PUJO, VUR, VUJO, PUV, neurogenic bladder, duplex kidneys, ureterocele, MCDK, megaureter

Professional Skills of particular importance: Judgement and clinical decision making, Leadership and management

SET	Clinical assessment and investigations	Non-operative management	Operative management
Early	– Discuss the anatomy and embryology of the renal tract – Discuss possible causes of renal tract dilatation based on history, examination and initial imaging findings – Discuss natural history of common causes of renal tract dilatation – Interpret ultrasound and fluoroscopy imaging.	– Describe important clinical features that affect management strategy – Initiate fluid management, analgesia and antibiotic prophylaxis – Discuss role of multidisciplinary team in management	– Insert catheter for male neonate with suspected urethral obstruction – Perform SPC – Assist in planning and performing surgical procedures – Perform Cystoscopy, Circumcision
Mid	– Relate the pathophysiology of urinary tract obstruction, and vesico-ureteric reflux to outcomes – Interpret all imaging and relevant investigations. – Evaluate renal tract investigations	– Formulate investigation strategy – Evaluate non-operative management strategies	– Perform Cystoscopy, retrograde pyelogram, JJ stent – Assist in complex procedures, anticipating next steps and flow of the procedure. – Setup for surgery (prep / staff / equip / positioning
Senior	– Integrate clinical assessment and investigations to arrive at suitable diagnosis – Discuss prognostic factors and medium to long term issues – Discuss risk, medicolegal and ethical implications	– Initiate appropriate non-operative management – Adopt lead role in discussions with patient/family provide appropriate counselling and discussion of diagnosis, treatment and outcomes – Lead multidisciplinary team, manage appropriate referral – Anticipate complications of treatment eg UTI, leak post pyeloplasty, engaging other disciplines eg. interventional radiology when required.	– Independently Perform Vesicostomy / Suprapubic catheter – Perform Valve ablation, incision of ureterocele, Urinary diversion, – Perform Pyeloplasty, Antireflux procedures, Reimplant procedures – Perform stone management

Teaching/learning: Outpatient clinic, on-call, ward rounds, operating theatre, CATS/DOGS

Assessment: Mini-CEX, MOUSE, In training assessment, PAE, PPE, FEx

Other Resources: SPUNZA Paediatric Urology Update

2. Urinary tract infection

Summary: Urinary tract infection in childhood is common and often does not require surgical management. Paediatric Surgeons may be involved in the management of children with complicated urinary tract infections or recurrent urinary tract infection due to other renal tract disorders. By the completion of training the Trainee will anticipate risk factors, coordinate appropriate investigations to identify surgically relevant disorders that contribute to risk of Recurrent UTI, and perform surgical and non-surgical management of them.

Linked Modules: Lower Urinary tract Dysfunction, Renal Tract Dilatation, Renal dysplasia/Upper tract anomalies, Gut dysfunction, Penis and foreskin abnormalities, Child with genital anomalies

Learning Links: PAE; PPE: Embryology/Developmental; Genitourinary

Professional Skills of particular importance: Collaboration & Teamwork, Judgement & Clinical Decision Making,

SET	Clinical assessment and investigations	Non-operative management	Operative management
Early	– Differentiate surgical from non-surgical issues through history and examination – Describe anatomical abnormalities (and embryologic basis) of the renal tract that are associated with UTI – Initiate and interpret appropriate laboratory investigations – Discuss renal tract imaging modalities	– Assess and manage acute infection and sepsis – Evaluate the role of prophylactic therapies	– Perform bladder catheterisation (urethral and SPC) – Perform Circumcision – Perform Cystoscopy
Mid	– Propose investigations for assessment of urinary tract infection (acutely) and to identify future risk factors – Conduct non-invasive urodynamic assessment	– Evaluate interventions for Vesicoureteric reflux – Discuss urotherapy techniques – Formulate management plan to address non-surgical risk factors for recurrent UTI	– Perform Cystoscopy with cystography, retrograde pyelography, JJ stent – Perform endoscopic antireflux procedures
Senior	– Discuss surgically relevant conditions that are modifiable risk factors for future UTI or urinary tract disorders – Anticipate complications and disease progression – Propose further treatment strategies	– Leading role in MDT discussions – Coordinate MDT for intervention ie interventional radiology	– Perform ureteric re-implantation – Perform incision ureterocele – Perform nephro-ureterectomy, ureterostomy – Discuss and assist surgical procedures for duplex systems

Teaching/learning: Outpatient clinic, on-call, ward rounds, operating theatre, CATS/DOGS

Assessment: Mini-CEX, MOUSE, In training assessment, PAE, PPE, FEx

Other Resources: SPUNZA Paediatric Urology Update

3. Renal dysplasia/Upper tract anomalies

Summary: Anomalies of the upper tracts are commonly identified both incidentally as well as due to symptomatic complaints. Knowledge of embryologic and developmental processes are required in order to differentiate variants of normal anatomy from potentially pathological conditions. By the completion of training the Trainee will be able assess patients with symptomatic and incidental presentations of upper tract anomalies. The Trainee will be able to coordinate investigation and non-operative management of patients with upper tract anomalies and renal dysplasia. The Trainee will be able to work with relevant colleagues to manage patients with severe dysplasia and renal failure

Linked Modules: Urology, Renal Tract Dilatation, Urinary tract infection, Lower urinary tract dysfunction, Haematuria, Antenatal Counselling, Child with major comorbidities and interdisciplinary care

Learning Links: PAE, PPE: Embryology/Developmental, Renal Tract, Genito-urinary

Professional Skills of particular importance: Collaboration and teamwork, Judgement and clinical decision making

SET	Clinical assessment and investigations	Non-operative management	Operative management
Early	– Describe the embryology of the ureter and kidney	– Discuss indications for antibiotic prophylaxis	
Mid	– Relate clinical presentations to variations of renal and ureteric anatomy – Differentiate normal (non-pathological) variations from clinically significant anomalies – Discuss investigations for upper tract anomalies	– Discuss peri-operative considerations for patient with severe renal impairment or renal replacement therapy – Coordinate MDT care	– Perform cystoscopy/retrograde pyelogram Perform insert/remove peritoneal dialysis device – Perform diagnostic Laparoscopy
Senior	– Formulate an assessment and management strategy for patients with anomalies of renal +/or ureteric anatomy – Anticipate how variations of anatomy affect management (eg PUJ obstruction in Horseshoe kidney)	– Lead patient/family discussion about short and long term implications of renal dysplasia/position/fusion anomalies – Anticipate complications of Peritoneal dialysis	– Perform cystoscopy incision of ureterocele Perform nephrectomy/ heminephrectomy – Perform ureteric reimplant/ ureterostomy – Discuss and assist surgical procedures for duplex systems – Describe/assist nephrostomy – Describe/assist renal transplant

Teaching/learning: Outpatient clinic, on-call, Ward rounds, Operating Theatre, CATS/DOGS, Multi-disciplinary Meetings

Assessment: Mini-CEX, MOUSE, In training assessment, PAE, PPE, FEx

Other Resources: SPUNZA Paediatric Urology Update

4. Lower urinary tract dysfunction and incontinence

Summary: Lower urinary tract dysfunction has a spectrum of presentations from neurogenic bladder failure to monosymptomatic nocturnal enuresis. In this topic the Trainee will develop a framework to approach dysfunction of the Lower Urinary tract. By the completion of training the Trainee will be able to link clinical presentations of incontinence, Lower Urinary Tract Symptoms (LUTS) and Urinary Tract Infection to the anatomy, physiology and patho-physiology of bladder and bowel function. The Trainee will be able to identify and manage neuropathic lower urinary tract function. The Trainee will conduct and interpret appropriate investigations to formulate management plans that protect upper tract function, achieve continence, reduce infections and improve quality of life. The Trainee will be able to manage patients with non-neurogenic bladder and bowel disorders.

Linked Modules: Lower Urinary tract Dysfunction, Renal Tract Dilatation, Renal dysplasia/Upper tract Anomalies, Gut dysfunction, Child with comorbidities and interdisciplinary care

Learning Links: PAE; PPE: Embryology/Developmental; Genitourinary;

Professional Skills of particular importance: Collaboration and teamwork; Communication; Health advocacy

SET	Clinical assessment and investigations	Non-operative management	Operative management
Early	– Differentiate neurogenic from non-neurogenic bladder disorders through focused assessment – Describe anatomical, embryologic and behavioral development that contributes to LUT function and dysfunction – Discuss renal tract and spinal cord imaging modalities	– Discuss the role of continuous antibiotic prophylaxis, other surgical and non surgical infection reduction strategies	– Perform bladder catheterisation (urethral and SPC) – Perform cystoscopy
Mid	– Conduct non-invasive urodynamic assessment – Discuss the neurophysiological mechanisms controlling bowel / bladder function in various contexts eg. spinal injury , neurogenic bladder, functional or behavioural disorders	– Initiate uro-therapy for day and night time incontinence – Discuss Clean Intermittent Catheterisation – Formulate management plans based on pathology – Describe biofeedback therapy / neuromodulation	– Perform Cystoscopy, cystography, retrograde pyelography, intravesical botox or bulking agents – Perform vesicostomy – Assist and setup for major procedures
Senior	– Select and Interpret Urinary Tract imaging relevant to clinical presentation (USS, Fluoroscopy, nuclear medicine, MRI) – Incorporate a holistic approach to care, considering child's developmental, psychological and social factors	– Perform and interpret Functional (invasive) Urodynamics – Adopt a leading role in MDT management – Manage bladder retraining (uro-therapy) – Coordinate transition of care to adult services	– Perform continent catheterisable channels – Discuss bladder augmentation – Discuss sling / sphincter replacement / bladder neck reconstruction

Teaching/learning: Outpatient clinic, on-call, ward rounds, operating theatre, CATS/DOGS

Assessment: Mini-CEX, MOUSE, In training assessment, PAE, PPE, FEx

Other Resources: SPUNZA Paediatric Urology Update

5. Haematuria

Summary: Haematuria (non trauma) is uncommon but distressing to parents and carers. Assessment of haematuria requires knowledge of medical and surgical causes of renal tract bleeding and understanding of idiopathic causes. Assessment and management of haematuria requires collaboration with other specialties and good communication between the team and with families. By the end of training the Trainee will be able to assess and manage patients referred with macro and microscopic haematuria.

Linked Modules: Abdominal mass, Urinary Tract Infection, Acute Abdomen, Renal tract dilatation

Learning Links: PAE; PPE; Oncology; Abdominal Mass, Vascular Malformations; Urology: Renal tract dilatation; Inguino-scrotal: Inguino-scrotal lumps; Abdominal: The Acute Abdomen, Gut dysfunction

Professional Skills of particular importance: Professionalism, Collaboration and teamwork

SET	Clinical assessment and investigations	Non-operative management	Operative management
Early	– Discuss the anatomy of the renal tract and identify the range of causes for haematuria – Describe investigations that identify medical causes of haematuria – Differentiate features of surgical and non-surgical causes of bleeding from history, examination and initial investigations	– Initiate treatment for pain, dehydration/shock – Discuss a suitable assessment and management strategy – Anticipate complications of catheterisation including blockage	– Perform insertion of urethral catheter and SPC – Perform bladder irrigation/washout via catheter – Perform circumcision – Perform cystoscopy/stent removal
Mid	– Discuss the pathophysiology of haematuria (microscopic and macroscopic) to the clinical manifestations. – Propose and interpret relevant investigations (incl metabolic workup for stones)	– Propose appropriate non-operative management and lead discussion with family – Anticipate natural history and propose appropriate follow up – Discuss medical management	– Perform cystoscopic bladder clot evacuation, RPG, JJ Stent insertion, transurethral biopsies – Perform tumour biopsies
Senior	– Integrate clinical assessment and investigations to arrive at diagnosis	– Initiate appropriate non-operative management – Lead communication with patient and family – Perform lead role in multidisciplinary team, manage appropriate referral	– Perform Ureteroscopy, stone management – Perform nephrectomy – Describe/Assist management of bladder/prostate tumours

Teaching/learning: Outpatient clinic, on-call, ward rounds, operating theatre, CATS/DOGS

Assessment: Mini-CEX, MOUSE, In training assessment, PAE, PPE, FEx

Other Resources: SPUNZA Paediatric Urology Update

6. Child with genital anomalies

Summary: Variations of Sex Characteristics (VSC) (Disorders of Sexual Differentiation) are rare and complex disorders that present significant diagnostic and management challenges. VSC are managed in a multidisciplinary setting. In this module the Trainee will be able to identify what defines ambiguous genitalia or VSC, and discuss their modes of presentation in the paediatric and adolescent patient. The Trainee will be able to describe the embryology, genetics and anatomy of DSD compared to "normal development" and propose a practical classification framework. The Trainee will identify emergent, short term, medium term and long term management priorities and issues of relevance to the child and their family. At the completion of training the Trainee will be able to discuss the social, ethical, and medico-legal considerations around the management of children with VSC's. The Trainee will be able to evaluate the role of an MDT in assessment and management. The Trainee will have surgical skills to perform basic diagnostic procedures and will be able to describe surgical procedures for assessment and management of malignancy and continence and evaluate surgical procedures for genital reconstruction. The Trainee will participate in MDT discussions and family meetings.

Linked Modules: Groin Lumps, Penis and Foreskin abnormalities, Hypospadias, Introital masses, Child, family and community, Child with major comorbidities and interdisciplinary care

Learning Links: PAE, PPE Embryology/Development

Professional Skills of particular importance: Professionalism, Cultural competence and cultural safety, Scholarship and teaching

SET	Clinical assessment and investigations	Non-operative management	Operative management
Early	– Discuss embryology of sexual differentiation – Discuss normal and abnormal anatomic variations in genital development	– Discuss management of labial fusion	
Mid	– Describe genetic and biochemical disorders that lead to Variations of Sex Characteristics – Discuss investigations used in the evaluation of a child with VSC – Describe management priorities in VSC	– Propose a diagnostic algorithm for a child with a VSC	– Perform EUA/cystoscopy/vaginoscopy/ UGsinoscopy laparoscopy – Describe surgical interventions for imperforate hymen, vaginal septum, vaginal atresia
Senior	– Assess an infant or child presenting with VSC and formulate differential diagnosis – Propose appropriate investigations	– Discuss a multi-disciplinary approach to the assessment and management of VSC	– Perform diagnostic laparoscopy, gonadal assessment/biopsy, vaginostomy – Evaluate techniques of genital reconstruction

Teaching/learning: Outpatient clinic, on-call, ward rounds, operating theatre, CATS/DOGS, Multi-disciplinary Team meetings

Assessment: Mini-CEX, MOUSE, In training assessment, PAE, PPE, FEx

Other Resources: SPUNZA Paediatric Urology Update

7. Hypospadias

Summary: Hypospadias is a common penile anomaly. There is a wide spectrum of manifestation. By the end of Training the Trainee will be able to evaluate the range of hypospadias and variant anatomical disorders. The Trainee will be able to assess and manage distal and minor variants. The Trainee will anticipate complications and identify more complex phenotypes and coordinate appropriate referral or multidisciplinary care.

Linked Modules: Child with genital anomalies, Undescended testes, Groin Lumps, Penis and foreskin abnormalities

Learning Links: PAE, PPE Embryology/Development

Professional Skills of particular importance: Professionalism, Judgment and clinical decision making

SET	Clinical assessment and investigations	Non-operative management	Operative management
Early	– Discuss the anatomy and embryology of the male genitalia with respect to hypospadias spectrum disorders, and associated anomalies – Describe salient features of hypospadias following a relevant history and clinical examination	– Describe relevant investigations – Describe preoperative preparation and counseling for families regarding expectations and outcomes – Discuss the role of hormonal therapy in preoperative preparation – Discuss the role of other specialties eg. nephrology, endocrinology and make appropriate referrals	– Insert catheter for male neonate with known or suspected urethral condition – Assist in surgical procedures – Perform Cystoscopy
Mid	– Formulate differential diagnosis for hypospadias anomalies – Relate pre-operative examination findings to operative planning – Discuss risk, medicolegal and ethical implications	– Discuss non-operative management plans, including hormonal therapy optimization and addressing associated conditions – Discuss goals and timing of surgical intervention – Conduct patient and family education on postoperative care and long-term follow-up – Manage patient and family during early postoperative care – Interpret uroflow	– Perform Cystoscopy, meatotomy – Assist in complex procedures, anticipating next steps and flow of the procedure – Setup for surgery (prep / staff / equip / positioning") – Perform parts of hypospadias surgery (tissue and instrument handling)
Senior	– Evaluate literature regarding innovations in hypospadias repair – Anticipate post operative complications and formulate a proactive follow up plan	– Formulate appropriate management plan – Initiate appropriate non-operative management – Adopt lead role in discussions with patient/family provide appropriate counselling and discussion of diagnosis, treatment and outcomes – Anticipate complications of treatment eg UTI, fistula, breakdown – Facilitate multidisciplinary involvement in the care of patients with complex needs	– Perform Hypospadias repair: distal, Chordee release, fistula repair, meatotomy – Participate in hypospadias repair proximal / staged – Discuss complex and revision repairs

Teaching/learning: Outpatient clinic, on-call, ward rounds, operating theatre, CATS/DOGS

Assessment: Mini-CEX, MOUSE, In training assessment, PAE, PPE, FEx

Other Resources: SPUNZA Paediatric Urology Update

8. Introital masses, Vaginal bleeding/discharge

Summary: Vaginal bleeding or discharge is uncommon but concerning for patients and their carers. There is a range of explanations from normal physiology through to malignancy. By the completion of training the Trainee will be able to assess presentations and investigate appropriately to arrive at a diagnosis and ensure appropriate disposition of care.

Linked Modules: Child with genital anomalies, Ingestions and foreign bodies, Abdominal mass, Haematuria, Vascular Anomalies, Trauma, Ingestions and foreign Bodies

Learning Links: PPE; Genito-urinary

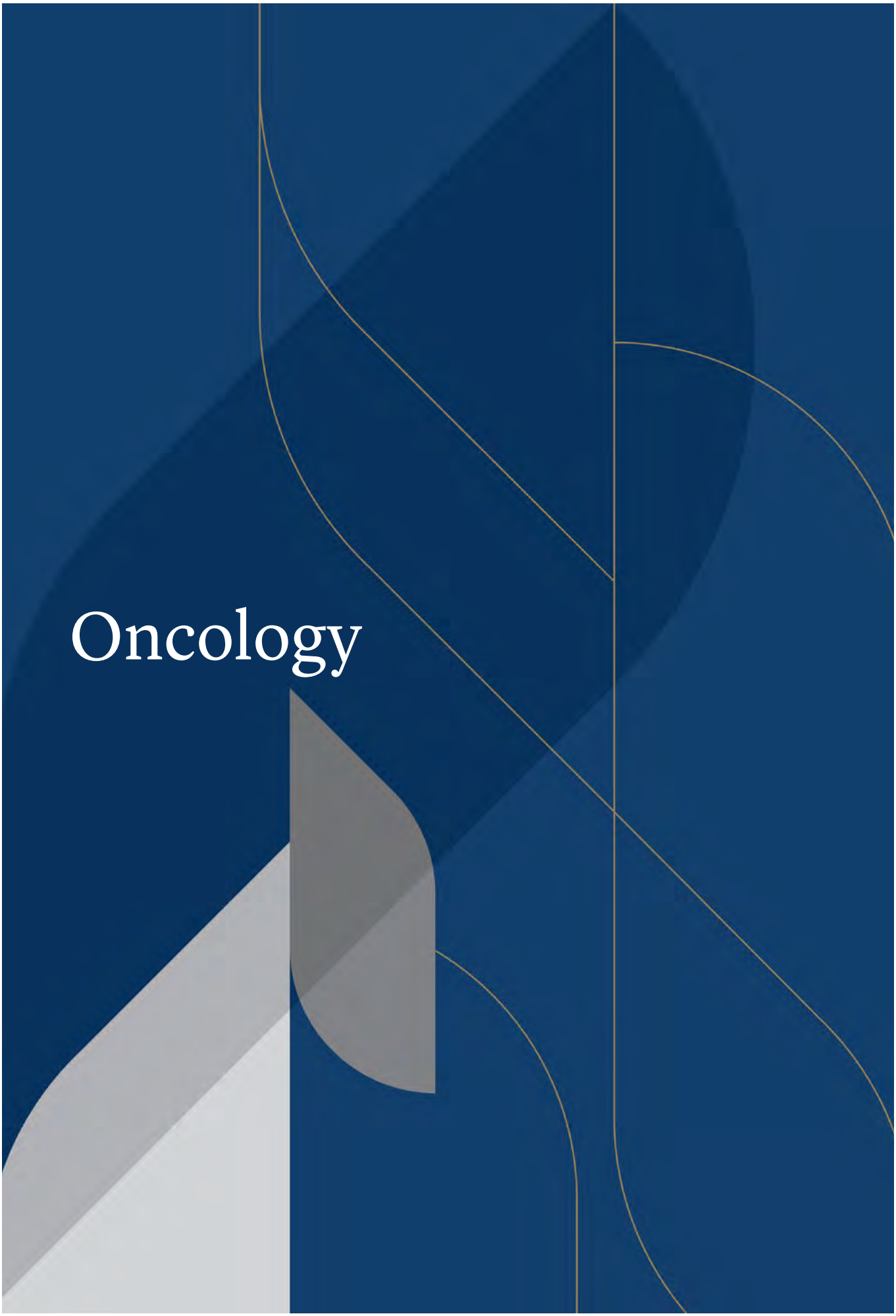
Professional Skills of particular importance: Communication, Professionalism

SET	Clinical assessment and investigations	Non-operative management	Operative management
Early	– Differentiate physiologic from potentially pathologic presentations using history and examination and appropriate investigations – Assess straddle injury and differentiate cases that require EUA – Discuss precocious puberty – Discuss differential diagnose for introital masses	– Provide reassurance to carers about normal physiologic processes – Discuss management of labial adhesions	– Perform EUA, Cystoscopy/ vaginoscopy, removal foreign body, biopsy – Perform repair of simple perineal lacerations
Mid	– Initiate and interpret appropriate investigations – Discuss the embryology of Mullerian duct anomalies – Discuss presentations that may indicate inflicted injury	– Initiate referral for medical/ gynaecology causes of bleeding	– Perform simple incision of septum or imperforate hymen
Senior	– Formulate an investigation and management strategy for an infant/child with GU tumour	– Adopt lead role in multidisciplinary discussion. – Lead family meetings to discuss surgery for malignancy	– Perform complex repair of perineal injury, diversion procedures – Perform surgery for urethral prolapse/ prolapsed ureterocele

Teaching/learning: Outpatient clinic, on-call, ward rounds, operating theatre, CATS/DOGS

Assessment: Mini-CEX, MOUSE, In training assessment, PAE, PPE, FEx

Other Resources: SPUNZA Paediatric Urology Update


Oncology

1. Abdominal mass

Summary: Abdominal mass can be the result of malignant or benign pathology. The Trainee will develop a diagnostic approach to the child who presents with an abdominal mass. The Trainee will work as part of a multi-disciplinary team and maintain their currency of knowledge regarding protocols and developments in the management of solid tumours. At the completion of training the Trainee will be able to adopt a leading role in the assessment and management of a child with an abdominal mass.

Linked Modules: Acute abdomen, Vascular Anomalies, Groin lumps, Thoracic mass, Renal tract dilatation, Renal Dysplasia/Upper tract anomalies, Haematuria, Neonate masses or abnormal growth, Child with comorbidities and interdisciplinary care

Learning Links: PAE; PPE: Embryology/Developmental; Neoplasia, Infection inflammation, other Acquired abdominal disorders

Professional Skills of particular importance: Collaboration and teamwork, Scholarship and teaching

SET	Clinical assessment and investigations	Non-operative management	Operative management
Early	– Discuss differential diagnosis based on findings of history and examination – Describe investigations	– Perform initial resuscitation and stabilization of a sick infant/child	– Discuss management of focal intra-abdominal sepsis
Mid	– Discuss the clinical associations and syndromes in relation to solid tumours in the infant/child – Discuss the classification of solid tumours in children – Discuss the differential diagnoses and evaluate the modalities of investigations for an intra -abdominal mass	– Formulate the management of a benign intra -abdominal mass – Describe biopsy techniques – Discuss the role of international collaborations and MDTs in the role of malignant tumours – Participate in MDT	– Perform diagnostic laparoscopy, laparotomy and tumour biopsy under supervision – Perform operative management of benign abdominal masses – Assist in tumour resection – Assist with operative planning for major tumour resection, including positioning and perioperative care
Senior	– Evaluate the investigation and management option for an infant/child with an intra-abdominal mass – Evaluate the role of biomarkers, targeted therapy, and genomics. – Evaluate the risk stratification of tumours and establish management guidelines based on tumour stratification – Discuss the long-term effects of diagnosis/treatment and its implications	– Adopt leading role in multidisciplinary discussion – Lead family meetings to discuss surgery – Evaluate the international protocols for childhood tumour management – Justify a management strategy for individual patient – Coordinate fertility preservation	– Perform tumour biopsy independently. – Perform oophorectomy /ovary sparing resection, ovarian harvest – Perform resection for localized tumours and lymph node sampling – Discuss and participate in the operative management of high-risk tumours – Collaborate with other specialties (Hepato-bilary, Gynaecology etc)

Teaching/learning: Outpatient clinic, on-call, ward rounds, operating theatre, CATS/DOGS, Multi-disciplinary Team meetings

Assessment: Mini-CEX, MOUSE, In training assessment, PAE, PPE, FEx

2. Thoracic mass

Summary: Thoracic masses are uncommon presentations. They may be symptomatic or incidental lesions. A thoracic mass may be the result of malignant or benign pathology. The Paediatric Surgeon is involved in the assessment, diagnosis, and treatment of intra-thoracic masses of the lung, mediastinum, pleural space and chest wall. The Trainee will develop a diagnostic approach to the child who presents with a thoracic mass. At the completion of training the Trainee will work as part of a multi-disciplinary team and maintain their currency of knowledge regarding protocols and developments in the management of solid tumours. The Trainee will be able to lead the assessment and management of a child with a non-malignant thoracic mass.

Linked Modules: Lung lesions, Vascular Anomalies, Abdominal mass, Neonate with abnormal mass or growth, Pleural disease, Child with comorbidities and interdisciplinary care

Learning Links: PAE; PPE: Embryology lung/thorax, GI Tract, Infection/Inflammation, Neoplasia

Professional Skills of particular importance: Collaboration and teamwork, Scholarship and teaching

SET	Clinical assessment and investigations	Non-operative management	Operative management
Early	– Discuss differential diagnosis based on findings of history and examination – Discuss the embryology of the aero-digestive tract and mediastinum – Describe investigations	– Perform initial resuscitation and stabilization of a sick infant/child	– Discuss management of lesions that are or may impair respiration – Discuss management of focal sepsis – Insert chest drain
Mid	– Outline the differential diagnoses and evaluate the modalities of investigations for an intra -thoracic mass – Distinguish likely pathology based on anatomic characteristics – Discuss the clinical associations and syndromes in relation to solid tumours in the infant/child. – Discuss the classification of solid tumours in children	– Discuss management plan for a benign intra-thoracic mass – Describe biopsy techniques – Discuss the role of international collaborations and MDTs in the role of malignant tumours – Participate in MDT	– Perform diagnostic thoracoscopy or thoracotomy and tumour biopsy under supervision. – Assist with operative planning for major tumour resection, including positioning and perioperative care
Senior	– Evaluate the investigation and management options for an infant/child with an intra-thoracic mass – Evaluate the role of biomarkers, targeted therapy, and genomics. – Evaluate the risk stratification of tumours and concordant management guidelines – Discuss the long-term effects of diagnosis/treatment and its implications	– Facilitate multi-disciplinary management in line with international protocols/study groups – Justify a management strategy for individual patient – Lead family meetings to discuss surgery	– Perform tumour biopsy. – Perform resection for localised lesions of pleura, posterior mediastinum, lung parenchyma – Evaluate techniques for localisation of parenchymal lesions – Perform lung biopsy – Assist with median sternotomy for resection of anterior/superior mediastinal masses – Describe/assist thymectomy – Discuss and participate in the operative management of high-risk tumours – Describe/assist resection of chest wall lesions and reconstruction techniques

Teaching/learning: Outpatient clinic, on-call, Ward rounds, Operating Theatre, CATS/DOGS, Multi-disciplinary Team meetings

Assessment: Mini-CEX, MOUSE, In training assessment, PAE, PPE, FEx

3. Vascular anomalies

Summary: Vascular anomalies (VA) encompass a spectrum of disorders ranging in incidence from the common to the very rare. The International Society for the Study of Vascular Anomalies (ISSVA) classification system is key to achieving an understanding of the various types of vascular tumours and malformations. The largely somatic and occasional germline variants associated with these conditions and the cell signalling pathways involved underpin the choice or availability of molecular targeted therapies. By the completion of training the Trainee will be able to adopt a leading role in the multi-disciplinary management of patients with complex Vascular Anomalies and maintain their currency of knowledge regarding protocols and developments in the management Vascular Anomalies.

Linked Modules: Antenatal counselling, Abdominal mass, Head and neck lumps, Thoriacic, Child with major comorbidities and interdisciplinary care, Acute abdomen, GI Bleeding, Haematuria

Learning Links: PAE, PPE: Embryology/Developmental, Head and Neck, Neoplasia, other acquired Abdominal

Professional Skills of particular importance: Collaboration and teamwork, Scholarship and teaching

SET	Clinical assessment and investigations	Non-operative management	Operative management
Early	– Discuss the clinical features of common vascular tumours and malformations – Explain the generic subclassification of VAs into Tumours and Malformations as per the ISSVA system – Describe salient features of VA's and associations elicited through history and examination.	– Discuss treatment options for the most common vascular tumours and malformations. – Initiate treatment for common conditions	– Describe emergency management of VAs such as bleeding, ulceration, increased pain, airway compromise and escalate as necessary – Perform skin punch biopsies, application of negative pressure wound therapy
Mid	– Describe the ISSVA classification system for VA. – Describe associated anomalies / syndromic associations / overgrowth (eg. Hepatic haemangioma, PHACE, LUMBAR/PELVIS, PROS, PHOST) – Describe investigations that are necessary for differential diagnosis	– Implement imaging, biopsy or assessment by other specialties as discussed in MDT	– Perform simple core/open biopsies – Perform simple resections – Assist in complex surgical resection / reconstruction
Senior	– Formulate a diagnosis in complex cases based on appropriate assessment of history, salient clinical features and interpretation of relevant investigations. – Diagnose conditions requiring emergency management. – Diagnose conditions that may mimic benign VAs such as malignant tumours requiring alternate management pathway	– Lead MDT discussions regarding the antenatal and postnatal management of complex malformations. – Participate in MDT counselling for head and neck lesions with risk of airway compromise – Anticipate non-surgical emergency management. – Justify selected plan for individual patient and obtain informed consent for procedures including genetic testing	– Participate in complex surgical resection / reconstruction – Perform or refer for (neo) adjunct therapies – Implement management for complications of VAs – Perform laser therapy.

Teaching/learning: Outpatient clinic, on-call, Ward rounds, Operating Theatre, CATS/DOGS, Multi-disciplinary Team meetings

Assessment: Mini-CEX, MOUSE, In training assessment, PAE, PPE, FEx

4. Vascular access

Summary: In this topic the Trainee will develop expertise in obtaining vascular access and treating complications that may arise. At the completion of training the Trainee will have an understanding of the indications for vascular access and will be able to coordinate care between other members of the healthcare team and patients/families.

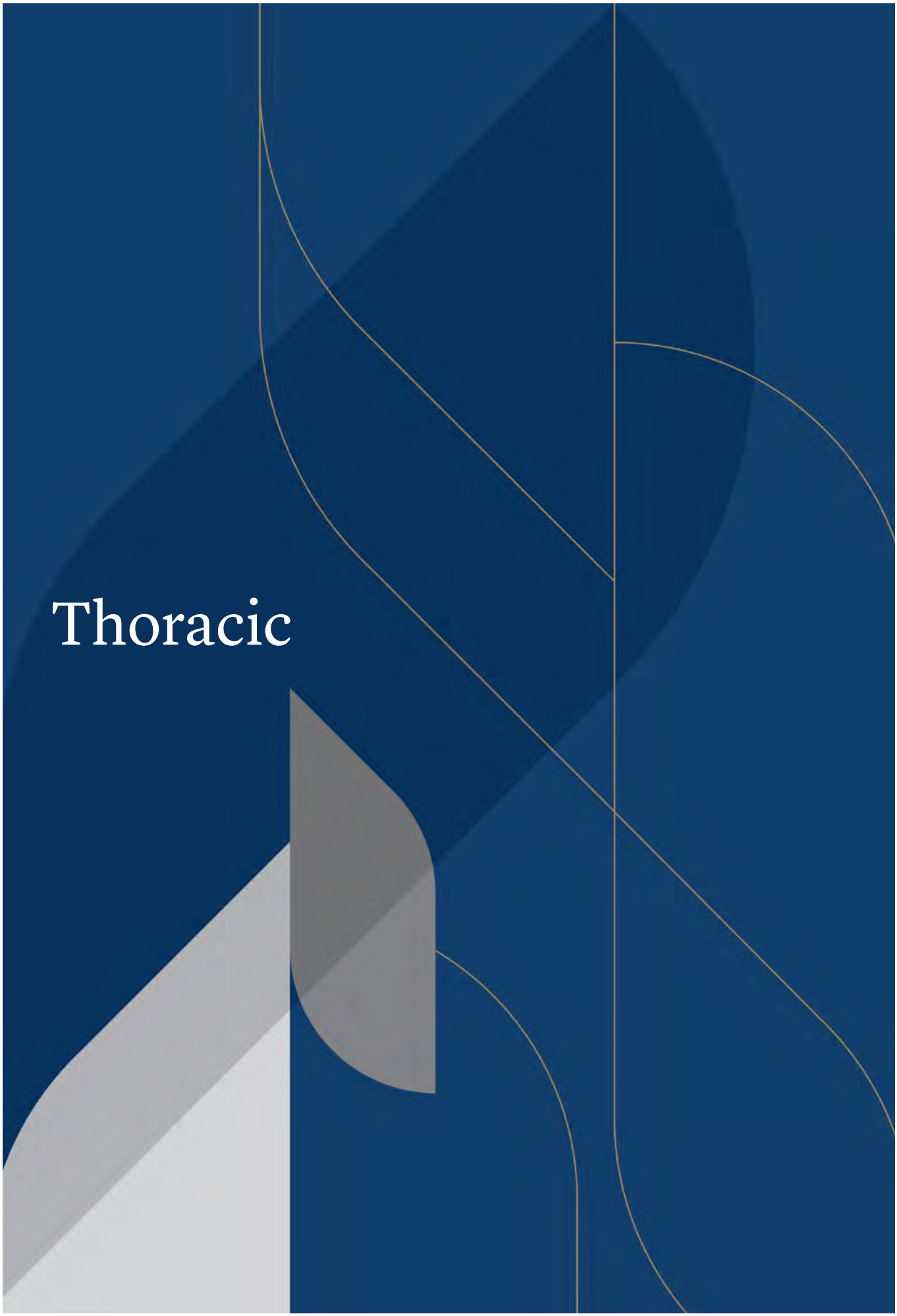
Linked Modules: Gut Dysfunction, Neonatal intestinal insufficiency, Child with major comorbidities and interdisciplinary care

Professional Skills of particular importance: Collaboration and teamwork, Judgement and clinical decision making

SET	Clinical assessment and investigations	Non-operative management	Operative management
Early	– Discuss indications for peripheral and central venous access – Describe investigations	– Describe intra and postoperative complications of central venous access devices (CVAD) – Access, troubleshoot and repair CVAD	– Assist with insertion of CVADs – Remove CVAD
Mid	– Evaluate device selection, insertion technique and site. – Interpret investigations prior to insertion of CVAD	– Develop peri-operative optimisation strategy – Anticipate intra and postoperative complications of central venous catheter devices	– Perform CVAD insertion
Senior	– Formulate CVAD strategy for the complex patient – Anticipate complications with insertions and removal	– Manage intra and post operative complications of central venous catheter devices – Adopt a leadership role in CVAD MDT/ Service	– Independently perform CVAD insertion/ replacement/revision

Teaching/learning: Outpatient clinic, on-call, Ward rounds, Operating Theatre, CATS/DOGS, Multi-disciplinary Team meetings

Assessment: Mini-CEX, MOUSE, In training assessment, PAE, PPE, FEx


Thoracic

1. Tracheo-oesophageal disorders

Summary: In this topic the Paediatric Surgery Trainees will develop comprehensive knowledge and skills in the clinical assessment, diagnosis, and management of trachea-oesophageal disorders in paediatric patients. Clinical cases may involve a range of common and uncommon conditions associated with the trachea, and thoracic oesophagus. Presentations are varied; and include swallowing difficulties, respiratory distress, and incidental findings. At the completion of training, the Trainee will be able to lead patient assessment; emergency resuscitation; rational investigations, including for associated anomalies; formulating a diagnosis; engaging the patient, family or carer in management plans; and interacting with colleagues to implement pre-operative, operative and post operative care plans.

Linked Modules: Neonatal respiratory distress; Neonatal abdominal distension/vomiting, Gut dysfunction, Child with major comorbidities and interdisciplinary care

Learning Links: Anatomy/Embryology syllabus; Pathophysiology syllabus: Embryology Spine Lung/thorax GI tract Oesophagus Renal Tract, Gastro-oesophageal reflux,

Professional Skills of particular importance: Judgement and clinical decision making, Professionalism

SET	Clinical assessment and investigations	Non-operative management	Operative management
Early	– Discuss the embryology and anatomy of the foregut – Describe possible associated anomalies, and relevant investigations	– Initiate appropriate management of excess secretions	– Describe surgical interventions for oesophageal atresia – Discuss thoracic anatomy intra-operatively – Assist with thoracoscopy and thoracotomy, including equipment set-up and patient positioning – Perform chest drain insertion
Mid	– Discuss possible associated anomalies, and relevant investigations – Correlate the pathophysiology of foregut malformations to the clinical manifestations	– Initiate investigations preceding definitive surgical care – Discuss cases that may require urgent surgical intervention	– Perform diagnostic thoracoscopy, thoracotomy (open/close chest) – Perform gastrostomy – Discuss the aims and major steps of operative repair – Anticipate early post-operative complications, and Initiate management when required
Senior	– Interpret conflicting clinical information in the process of diagnosing oesophageal atresia presentations – Anticipate delayed sequelae and discuss relevant investigations – Justify short, medium and long term surveillance strategies following definitive treatment	– Evaluate treatment options with competing clinical priorities – Engage other teams (cardiothoracic, neonatal, intensive care, respiratory, ENT/ORL) and coordinate treatment priorities – pre and post-operatively	– Perform oesophageal atresia/tracheo-oesophageal repair – Perform neonatal gastrostomy – Perform bronchoscopy – Teach thoracotomy and thoracoscopy, (open close chest, diagnostic thoracoscopy) – Discuss variations in intra-operative anatomy and describe approach to management – Describe operative management options for delayed sequelae

Teaching/learning: Outpatient clinic, on-call, Operating Theatre, CATS/DOGS, Multi-disciplinary teams

Assessment: Mini-CEX, MOUSE, In training assessment, PAE, PPE, FEx

Other Resources: Thoracoscopic OA/TOF simulator

2. Diaphragmatic defects

Summary: In this topic the Paediatric Surgery Trainees will develop comprehensive knowledge and skills in the clinical assessment, diagnosis, and management of diaphragmatic defects in paediatric patients. On completion of training, the Trainee will lead patient assessment, emergency resuscitation, rational investigations, formulating a diagnosis, engaging the patient, family or carer in management plans and interacting with colleagues to implement pre-operative, operative and post operative care plans.

Linked Modules: Antenatal Counselling, Neonatal Respiratory distress, Trauma, Neonatal abdominal distension or vomiting, The Infant or child with vomiting or reflux

Learning Links: Anatomy/Embryology syllabus; Pathophysiology syllabus; Neonatal: Congenital diaphragmatic hernia; Burns & Trauma: Blunt Trauma, Penetrating Trauma; Abdominal: Gastro-oesophageal reflux disease, vomiting

Professional Skills of particular importance: Communication, Judgement and clinical decision making

SET	Clinical assessment and investigations	Non-operative management	Operative management
Early	– Discuss the anatomy and embryology of the diaphragm and its foramina (congenital and acquired) – Diagnose a child in respiratory distress	– Initiate appropriate resuscitation for an acutely unwell patient. – Perform nasogastric decompression	– Describe surgical interventions for diaphragmatic defects – Assist with thoracoscopy/ thoracotomy and laparoscopy/ laparotomy
Mid	– Explain the pathophysiology of diaphragmatic defects, and their associated anomalies, and relate them to the clinical manifestations – Describe antenatal and postnatal prognostic factors	– Initiate appropriate investigations, or interventions – Discuss appropriate non-operative management or interventions	– Perform diagnostic laparoscopy, laparotomy (open close abdomen) – Perform thoracoscopy/thoracotomy – Perform simple diaphragmatic hernia repair
Senior	– Evaluate complex information in formulating appropriate management plans – Discuss the role of special investigations – Justify short, medium and long term surveillance strategies following definitive treatment	– Evaluate the role of advanced supportive care techniques, including extra-corporeal life support (ECLS) – Formulate management plans, including the involvement of other teams – Lead discussion with families, including redirection of care	– Perform repair of complex diaphragmatic anomaly, including abdominal closure – Teach abdominal surgery (open close abdomen, diagnostic laparoscopy) – Discuss the role of adjunct procedures

Teaching/learning: Outpatient clinic, on-call, Operating Theatre, CATS/DOGS

Assessment: Mini-CEX, MOUSE, In training assessment, PAE, PPE, FEx

3. Lung lesions

Summary: In this topic the Paediatric Surgery Trainees will develop comprehensive knowledge and skills in the clinical assessment, diagnosis, and management of parenchymal lung lesions in paediatric patients. On completion of training, the Trainee will lead patient assessment; emergency resuscitation; rational investigations, including for associated anomalies; formulating a diagnosis; engaging the patient, family or carer in management plans; and interacting with colleagues to implement pre-operative, operative and post operative care plans.

Linked Modules: Neonatal respiratory distress, Antenatal counselling, Thoracic, Pleural disease, Chest wall deformity, Thoracic masses

Learning Links: Anatomy/Embryology syllabus; Pathophysiology syllabus Embryology Lung Thorax, Infection Bronchiectasis, Oncology: metastatic disease

Professional Skills of particular importance: Judgement and clinical decision making, Communication

SET	Clinical assessment and investigations	Non-operative management	Operative management
Early	– Discuss the embryology and anatomy of the foregut and lung – Diagnose a child in respiratory distress – Describe investigations, including timing, for lung lesions	– Initiate resuscitation of the acutely unwell child	– Perform pleural decompression – Describe surgical interventions for lung lesions – Assist with thoracoscopy and thoracotomy, including equipment set-up and patient positioning – Discuss thoracic anatomy intra-operatively
Mid	– Explain the pathophysiology of lung lesions and relate to the clinical manifestations	– Lead appropriate investigations for associated disease or anomalies – Justify a management plan and follow up	– Perform diagnostic thoracoscopy, thoracotomy (open/close chest) – Anticipate post-operative complications
Senior	– Interpret complex information in the process of managing lung parenchymal presentations – Discuss visuospatial planning of operative intervention – Evaluate the role of metastasectomy (diagnostic v therapeutic)	– Evaluate treatment options with competing clinical priorities – Lead the multidisciplinary planning of management of parenchymal lung lesions – Lead family discussion recommendations for operative vs non-operative management	– Perform lung parenchymal resection, anatomical and non-anatomical – Teach thoracotomy and thoracoscopy, (open close chest, diagnostic thoracoscopy) – Discuss adjuncts including localisation techniques

Teaching/learning: Outpatient clinic, on-call, Operating Theatre, CATS/DOGS, Multi-disciplinary Team meetings

Assessment: Mini-CEX, MOUSE, In training assessment, PAE, PPE, FEx

4. Pleural disease

Summary: In this topic the Paediatric Surgery Trainees will develop comprehensive knowledge and skills in the clinical assessment, diagnosis, and management of pleural disease in paediatric patients. Clinical cases may involve a range of common and uncommon conditions associated with the pleural space. At the completion of training, the Trainee will lead patient assessment, emergency resuscitation, rational investigations, formulating a diagnosis, engaging the patient, family or carer in management plans and interacting with colleagues to implement pre-operative, operative and post operative care plans.

Linked Modules: Neonatal respiratory distress, Thoriacic, Lung Lesions, Diaphragmatic defects

Learning Links: Anatomy/Embryology syllabus; Pathophysiology syllabus: Infection inflammation Empyema Thoracis, Burns & Trauma: pneumothorax, haemothorax

Professional Skills of particular importance: Judgement and clinical decision making, Collaboration and teamwork

SET	Clinical assessment and investigations	Non-operative management	Operative management
Early	– Discuss the anatomy and physiology of the pleural space – Discuss the child in acute respiratory distress – Describe chest x-ray, ultrasound, and CT findings	– Initiate appropriate resuscitation for an acutely unwell patient – Discuss non-operative management – Discuss management of chest drain, including post-insertion complications	– Perform pleural decompression – Assist with thoracoscopy and thoracotomy
Mid	– Discuss the pathophysiology of pleural disease – Interpret investigations, to justify selected management plan	– Lead the multidisciplinary team – Initiate non-operative management or interventions – Evaluate fibrinolysis vs surgical treatment and make recommendations for individual scenarios	– Perform diagnostic thoracoscopy/ thoracotomy – Demonstrate intrathoracic anatomy, intra-operatively to be able to examine the whole hemithorax
Senior	– Interpret conflicting clinical information in the process of diagnosing pleural disease presentations – Discuss the role of special investigations – Anticipate complications	– Evaluate treatment options with competing clinical priorities, for both symptomatic and asymptomatic disease (eg chylothorax)	– Teach basic thoracic surgery (insertion and management of chest drain, thoracoscopy/thoracotomy) – Discuss the management of persisting air leaks and identify treatment priorities

Teaching/learning: Outpatient clinic, on-call, Operating Theatre, CATS/DOGS

Assessment: Mini-CEX, MOUSE, In training assessment, PAE, PPE, FEx

5. Chest wall deformity

Summary: In this module the Paediatric Surgery Trainees will develop comprehensive knowledge and skills in the clinical assessment, diagnosis, and management of chest wall deformities in children and adolescents. Clinical cases may involve a range of common and uncommon conditions associated with the chest wall. The topic includes patient assessment, rational investigations, formulating a diagnosis, engaging the patient, family or carer in management plans and interacting with colleagues to implement pre-operative, operative and post operative care plans.

Linked Modules: Thoracic mass, Child, family and community

Learning Links: PAE syllabus; PPE syllabus: Embryology chest wall, Chest Wall Deformity

Professional Skills of particular importance: Communication, Collaboration and teamwork, Professionalism

SET	Clinical assessment and investigations	Non-operative management	Operative management
Early	– Discuss the musculoskeletal anatomy of the chest wall – Take a relevant history and conduct an appropriate clinical examination	– Describe non-operative management techniques – Discuss referral for psychological health	– Describe interventions for chest wall pathology – Assist with chest wall pathology operations
Mid	– Describe the major anomalies of the chest wall, including associations – Discuss the pathophysiology of chest wall deformities to the clinical manifestations	– Discuss the role of further investigations/referrals – Discuss which cases may require surgical intervention – Evaluate non-operative management options	– Evaluate operative management options – Perform thoracoscopy
Senior	– Interpret relevant investigations and justify definitive care recommendations	– Evaluate treatment options with competing clinical priorities	– Assist/describe, definitive surgical intervention for chest wall deformities – Formulate management plans for post-operative analgesia

Teaching/learning: Outpatient clinic, on-call, operating theatre, CATS/DOGS

Assessment: Mini-CEX, MOUSE, In training assessment, PAE, PPE, FEx

Miscellaneous topics

1. Skin and soft tissue lesions

Summary: The scope of practice for a Paediatric Surgeon will be affected by case mix and availability of colleagues in other specialties such as orthopaedic, OHNS and Plastic & Reconstructive surgery, paediatricians and adult general surgeons. Skin and soft tissue lesions can occur throughout the body, they can include infections, abscesses, benign and malignant tumours. At the completion of training the Trainee will be able to assess and manage infants and children with skin, subcuticular and soft tissue lesions or infections. The Trainee will work as required with other health care teams to provide collegial support or referral where required.

Linked Modules: Head and neck lumps, Groin lumps, Trauma

Learning Links: PAE; PPE: Infection and inflammation, Skin/Subcut/body wall/extremities,

Professional Skills of particular importance: Collaboration and teamwork, Professionalism

SET	Clinical assessment and investigations	Non-operative management	Operative management
Early	– Diagnose patients through history and examination, in order to prioritise care – Discuss relevant investigations for lesions of concern – Discuss lymphatic drainage – Initiate investigation for wounds/infections that may be associated with a soft tissue foreign body	– Initiate resuscitation and antibiotic therapy – Coordinate outpatient treatment – Discuss dressings – Discuss non-operative management of ingrown toenails	– Facilitate transfer and preparation for theatre Perform incision and drainage – Perform simple excision skin and subcutaneous lesions – Apply (and manage) negative wound pressure therapy – Perform excision/debridement for soft tissue foreign body
Mid	– Initiate and interpret investigations – Discuss features that differentiate benign from malignant lesions – Describe features that necessitate urgent investigation and/or referral	– Discuss antibiotic usage as alternative or adjunct to operative management – Anticipate complications and plan discharge/follow up appropriately	– Perform simple debridement – Perform definitive surgery for ingrown toenails – Perform complex excisions including graft, dermal templates and simple flaps
Senior	– Anticipate clinical progression of necrotising infections	– Engage with other specialties to coordinate care for patient in appropriate facility with appropriate support	– Perform complex debridement +/- necrotising infections – Assist with soft tissue reconstructive surgery

Teaching/learning: Outpatient clinic, on-call, Operating Theatre, CATS/DOGS,

Assessment: Mini-CEX, MOUSE, In training assessment, PAE, PPE, FEx

2. Perianal conditions

Summary: here are a wide range of perianal conditions that present in infancy and childhood. Some of these are covered under other presentations but taken together constitute a significant proportion of acute and non-acute referrals. By the completion of training the Trainee will be able to assess and manage perianal conditions that present in childhood with consideration of common and rare pathologies, and associated conditions.

Linked Modules: Gut Dysfunction, GI Bleeding, Abdominal mass, The infant child with Vomiting/reflux, Vascular anomalies, Ingestions and foreign bodies

Learning Links: PAE, PPE; Embryology/Development, Neonatal, Fluids/Growth/Nutrition, Cystic fibrosis and meconium ileus, other acquired abdominal conditions

Professional Skills of particular importance: Communication, Professionalism

SET	Clinical assessment and investigations	Non-operative management	Operative management
Early	– Diagnose perianal conditions through history and examination – Discuss natural history of perianal conditions related to age and underlying pathology – Discuss anatomy and embryology	– Reduction of prolapse, manual disimpaction rectal washout – Initiate and review treatment for constipation – Discuss role of antibiotics in perianal infections	– Perform incision and drainage of abscess – Perform anal fistulotomy, rectal biopsy, sigmoidoscopy, polypectomy
Mid	– Formulate an investigation and management strategy for rectal prolapse	– Coordinate involvement of other specialties – Discuss management of haemorrhoids in children	– Perform acute operative management of pilonidal cyst abscess – Perform formation of colostomy
Senior	– Discuss perianal manifestations of IBD and immunocompromised patients – Propose appropriate investigations	– Engage with other specialties to establish management priorities and coordinate care for patient	– Insert and manage Seton – Perform definitive surgery for pilonidal cyst – Perform surgery for rectal prolapse – Perform debridement of necrosis

Teaching/learning: Outpatient clinic, on-call, Operating Theatre, CATS/DOGS,

Assessment: Mini-CEX, MOUSE, In training assessment, PAE, PPE, FEx

3. Head and neck lumps

Summary: There are a variety of congenital and acquired lesions of the head and neck region that the paediatric surgeons will be required to assess and manage. Regional referral patterns and institutional scope of practice will vary but by the completion of training the Trainee will be able to diagnose lesions in the head and neck region and perform definitive surgical where appropriate. For complex and rare lesions the Trainee will adopt a leading role in antenatal counselling and coordinating definitive management.

Linked Modules: Neonate masses or abnormal growth, Groin Lumps, Thoracic masses, Vascular Anomalies, Skin and soft tissue lesions, Antenatal counselling, Neonatal respiratory distress

Learning Links: PAE, PPE: Embryology/development, Vascular anomalies, torticollis, Infection/inflammation - Cervical lymphatic node infections, salivary gland pathology; Neoplasia – lymphoma; teratoma

Professional Skills of particular importance: Collaboration & Teamwork, Professionalism

SET	Clinical assessment and investigations	Non-operative management	Operative management
Early	– Utilise history and examination to diagnose common lesions – Discuss salient diagnostic features from history – Discuss anatomy and embryology of head and neck lesions	– Initiate antibiotics and analgesia	– Facilitate transfer and preparation for theatre – Perform incision and drainage – Perform lymph node biopsy – Perform operative management of mucocele
Mid	– Discuss diagnosis and management of MAIS infection – Initiate and interpret imaging – Discuss management of complex vascular malformations of head and neck region	– Discuss indications for surgical treatment and complications – Initiate medical therapy if indicated – Describe non-operative management of salivary duct pathology – Communicate with other specialties and refer for interventions – Participate in MDT discussions	– Perform definitive operative management of MAIS – Perform resection of uncomplicated branchial remnant – Perform resection of thyroglossal duct cyst
Senior	– Discuss diagnosis and staging of lymphomas – Discuss staging and management of head and neck germ cell tumours – Describe EXIT procedure	– Coordinate multidisciplinary team management – Anticipate complications of interventions	– Perform resection of branchial remnants, ranula – Perform resection of Vascular malformations – Describe/assist thyroidectomy – Describe/assist surgery for recurrent lesions

Teaching/learning: Outpatient clinic, on-call, Operating Theatre, CATS/DOGS, Multi-disciplinary Team meetings

Assessment: Mini-CEX, MOUSE, In training assessment, PAE, PPE, FEx

Glossary

Performance descriptors: Key Terms

Key terms have been defined for the purpose of assisting trainees and trainers with understanding the depth and complexity of the knowledge and skill expected of them. The selected terms are used multiple times within the curriculum with specific intent to expectation for performance and degree of independence for the particular task.

Action verb	Definition
Anticipate	– Based on clinical skills and knowledge expect a particular outcome(s), formulate a plan, and initiate appropriate management
Apply	– Use, utilise, employ in a particular situation
Assess	– Anticipate clinical progression of necrotising infections – Assess a Trainee's performance
Assist	– Provide supplementary support or aid during a procedure
Communicate	– Convey knowledge or information with a patient or patient care with a team
Conduct	– Direct the management or performance of an examination, task or situation
Coordinate	– Organise patient care, investigations or team to function together in a concerted way, maybe under delegation
Correlate	– Describe the connection between linked concepts, patterns or data points
Counsel	– Give advice on diagnosis, prognosis and advise a management
Demonstrate	– Perform and/or explain a process or action while being observed to do
Describe	– Give detailed account of characteristics and features.
Determine	– ascertain or establish exactly by clinical assessment or deduction.
Develop	– Design and plan, for example, taking into account the patient's unique characteristics, goals and values when planning for a particular treatment
Diagnose	– Say exactly what is an illness or the cause of a problem
Differentiate	– Recognise or show that two or more things are not the same by comparing the features of each
Discuss	– Consider issues in detail and provide points for and/or against
Distinguish	– Recognise the difference between two or more things or concepts
Engage	– Mobilise and bring together resources and set to work for a particular purpose, for example, management of a particular patient
Escalate	– Initiate heightened response to patient care in emergency setting

Explain	– Relate cause and effect; explain relationships between things clearly and provide why and/or how.
Facilitate	– Make an action or process possible or easier
Formulate	– Create or prepare something carefully, giving particular attention to the details.
Implement	– Enact a treatment plan under supervision/delegation or independently (as indicated)
Integrate	– Combine two or more data points to create an explanation or management plan.
Incorporate	– Unite general principles or specialist knowledge into formulation of a specific management plan
Initiate	– Independently cause or facilitate an action to start an investigation or procedure
Interpret	– Describe the meaning and implications of something – for example, a piece of clinical information or the results of an investigation.
Investigate	– Determine which investigations are appropriate/required.
Justify	– Explain and defend rationale for a decision or action
Lead	– Take control, assume responsibility for a process or management plan – Establish an MDT process (ad hoc or ongoing)
Adopt a leadership role	– To take a significant part in the formulation and delivery of a care plan within an MDT setting
Manage	– Complete a full patient assessment, investigations, treatment, and follow-up
Model	– Behave in an exemplary way to set a standard for others to follow
Participate	– Contribute to a team, patient consultation or to develop a management plan
Perform	– Do something practical, perform a skill, piece of work, task or duty (may be under direct/indirect supervision or independent)
Propose	– Form and put forward a plan, investigation, diagnosis or course of action
Select	– Choose something from a group of things, usually according to a system

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