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Curriculum standards

Advanced Training in Rheumatology (Paediatrics and Child Health)

February 2025



About this document

The new Advanced Training in Rheumatology (PCH) curriculum consists of curriculum standards and learning, teaching, and assessment (LTA) programs.

This document outlines the curriculum standards for Advanced Training in Rheumatology (PCH) for trainees and supervisors. The curriculum standards should be used in conjunction with the Advanced Training in Rheumatology (PCH) <u>LTA program.</u>

The new curriculum was approved by the College Education Committee in February 2025. Please refer to the <u>College website</u> for details on its implementation

Contents

Program overview	3
Purpose of Advanced Training	3
Specialty overview	3
Advanced Training curricula standards	5
Professional Practice Framework	6
Learning, teaching, and assessment structure	7
Curriculum standards	8
Competencies	8
Entrustable Professional Activities	15
Knowledge Guides	57

Program overview

Purpose of Advanced Training

The RACP offers Advanced Training in 33 diverse medical specialties as part of Division, Chapter, or Faculty training programs.

The purpose of Advanced Training is to develop a workforce of physicians who:

- have received breadth and depth of focused specialist training, and experience with a wide variety of health problems and contexts
- are prepared for and committed to independent expert practice, lifelong learning, and continuous improvement
- provide safe, quality health care that meets the needs of the communities of Australia and Aotearoa New Zealand.

Specialty overview

A paediatric rheumatologist is a paediatrician specialising in the diagnosis and management of patients with acute and chronic conditions, ranging from mechanical joint pains to complex multisystem inflammatory disorders.

Paediatric rheumatologists lead and coordinate multidisciplinary teams in the investigation, diagnosis, and comprehensive management of rheumatic diseases. Given the multisystem nature of these conditions, they combine their extensive clinical expertise with targeted investigations to achieve accurate diagnoses. They work across various settings, including inpatient, ambulatory, and community, and are skilled in practical procedures such as joint injections. As the field continually evolves, paediatric rheumatologists stay current with the latest treatments and advancements in rheumatic disease management. Paediatric rheumatologists have expertise in:

- **investigation and diagnosis.** Paediatric rheumatologists apply clinical skills and laboratory and medical imaging modalities to assess patients and diagnose rheumatic conditions
- **providing professional advice.** Paediatric rheumatologists advise referring clinicians and address disease-specific questions.
- **the management of rheumatic disease.** Paediatric rheumatologists manage a range of conditions, such as juvenile idiopathic arthritis, systemic lupus erythematosus, juvenile dermatomyositis, scleroderma, and vasculitis.
- **providing ongoing care for patients.** Paediatric rheumatologists provide ongoing follow-up of patients with rheumatic diseases, providing targeted treatment, determining when to escalate therapy, and assessing treatment efficacy and safety.

Paediatric rheumatologists collaborate within a multidisciplinary team to deliver comprehensive care for patients with rheumatic diseases. Due to the often chronic nature of these conditions, they must excel in communication to ensure effective, long-term management and support. They are especially skilled in:

- effective communication. Rheumatic diseases are frequently chronic. Due to the longitudinal nature of care, skilful communication engendering lasting rapport with patients and their families remains an enduring, critical facet of rheumatology practice. Paediatric rheumatologists must be able to explain complex medical concepts in a clear and understandable manner and provide emotional support to patients and their families coping with chronic diseases.
- **managing transitional care**. Paediatric rheumatologists must expertly manage the evolving health care needs of children and young adults as they transition through adolescence and prepare for the eventual transfer of care to an adult rheumatologist. This involves addressing both the medical and psychosocial aspects of care to ensure a smooth and effective transition for patients and their families.
- **interdisciplinary collaboration**. Paediatric rheumatologists often work as part of multidisciplinary teams with other healthcare professionals, including occupational therapists, physiotherapists, and psychologists, to provide comprehensive care to patients with rheumatic conditions. They also liaise closely with other medical specialists, such as ophthalmologists, orthopaedic surgeons, and primary care physicians.
- high-quality research skills. Many paediatric rheumatologists are involved in research to advance the understanding and treatment of rheumatic diseases. Strong research skills are beneficial for conducting clinical trials, publishing scientific papers, and staying up to date with the latest developments in the field.
- **quality improvement and innovation.** Paediatric rheumatologists are involved in audit and quality improvement practices to ensure the highest possible quality of care is delivered.
- **teaching.** Paediatric rheumatologists play a crucial role in advancing the field by educating medical trainees, specialists, and other healthcare professionals. Their efforts are focused on increasing awareness and understanding of rheumatic diseases, thereby enhancing overall knowledge and improving patient care.

Advanced Training curricula standards



The RACP curriculum model

is made up of curricula standards supported by learning, teaching, and assessment programs.

Learning and teaching programs

outline the strategies and methods to learn and teach curricula standards, including required and recommended learning activities.

Assessment programs outline the planned use of assessment methods to provide an overall picture of the trainee's competence over time.

The **curricula standards** outline the educational objectives of the training program and the standard against which trainees' abilities are measured.



Competencies outline the expected professional behaviours, values, and practices of trainees in 10 domains of professional practice.



Entrustable Professional Activities (EPAs) outline the essential work tasks trainees need to be able to perform in the workplace.



Knowledge guides outline the expected baseline knowledge of trainees.

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Professional Practice Framework

The Professional Practice Framework describes 10 domains of practice for all physicians.



Learning, teaching, and assessment structure

The learning, teaching, and assessment structure defines the framework for delivery



Advanced Training learning, teaching, and assessment structure

- An entry decision is made before entry into the program.
- **Progress decisions**, based on competence, are made at the end of the specialty foundation and specialty consolidation phases of training.
- A **completion decision**, based on competence, is made at the end of the training program, resulting in eligibility for admission to Fellowship.

Advanced Training is a **hybrid time- and competency-based training program**. There is a minimum time requirement of between three to five years' full-time equivalent experience, depending on the training program undertaken. Progress and completion decisions are based on evidence of trainees' competence.

Curriculum standards

Competencies

Competencies outline the expected professional behaviours, values and practices that trainees need to achieve by the end of training.

Competencies are grouped by the 10 domains of the professional practice framework.

Competencies will be common across training programs.



Medical expertise

Professional standard: Physicians apply knowledge and skills informed by best available current evidence in the delivery of high-quality, safe practice to facilitate agreed health outcomes for individual patients and populations.

Knowledge: Apply knowledge of the scientific basis of health and disease to the diagnosis and management of patients.

Synthesis: Gather relevant data via age- and context-appropriate means to develop reasonable differential diagnoses, recognising and considering interactions and impacts of comorbidities.

Diagnosis and management: Develop diagnostic and management plans that integrate an understanding of individual patient circumstances, including psychosocial factors and specific vulnerabilities, epidemiology, and population health factors in partnership with patients, families, whānau, or carers¹, and in collaboration with the healthcare team.

¹ References to patients in the remainder of this document may include their families, whānau, and/or carers.

Communication



Professional standard: Physicians collate information, and share this information clearly, accurately, respectfully, responsibly, empathetically, and in a manner that is understandable.

Physicians share information responsibly with patients, families, carers, colleagues, community groups, the public, and other stakeholders to facilitate optimal health outcomes.

Effective communication: Use a range of effective and appropriate verbal, nonverbal, written and other communication techniques, including active listening.

Communication with patients, families, and carers: Use collaborative, effective, and empathetic communication with patients, families, and carers.

Communication with professionals and professional bodies: Use collaborative, respectful, and empathetic clinical communication with colleagues, other health professionals, professional bodies, and agencies.

Written communication: Document and share information about patients to optimise patient care and safety.

Privacy and confidentiality: Maintain appropriate privacy and confidentiality, and share information responsibly.



Quality and safety

Professional standard: Physicians practice in a safe, high-quality manner within the limits of their expertise.

Physicians regularly review and evaluate their own practice alongside peers and best practice standards, and conduct continuous improvement activities.

Patient safety: Demonstrate a safety focus and continuous improvement approach to own practice and health systems.

Harm prevention and management: Identify and report risks, adverse events, and errors to improve healthcare systems.

Quality improvement: Participate in quality improvement activities to improve quality of care and safety of the work environment.

Patient engagement: Enable patients to contribute to the safety of their care.



Teaching and learning

Professional standard: Physicians demonstrate a lifelong commitment to excellence in practice through continuous learning and evaluating evidence.

Physicians foster the learning of others in their profession through a commitment to mentoring, supervising, and teaching.²

Lifelong learning: Undertake effective self-education and continuing professional development.

Self-evaluation: Evaluate and reflect on gaps in own knowledge and skills to inform self-directed learning.

Supervision: Provide supervision for junior colleagues and/or team members.

Teaching: Apply appropriate educational techniques to facilitate the learning of colleagues and other health professionals.

Patient education: Apply appropriate educational techniques to promote understanding of health and disease amongst patients and populations.

Research



Professional standard: Physicians support creation, dissemination and translation of knowledge and practices applicable to health.²

They do this by engaging with and critically appraising research, and applying it in policy and practice to improve the health outcomes of patients and populations.

Evidence-based practice: Critically analyse relevant literature and refer to evidence-based clinical guidelines, and apply these in daily practice.

Research: Apply research methodology to add to the body of medical knowledge and improve practice and health outcomes.

²Adapted from Richardson D, Oswald A, Chan M-K, Lang ES, Harvey BJ. Scholar. In: Frank JR, Snell L, Sherbino J, editors. The Draft CanMEDS 2015 Physician Competency Framework – Series IV. Ottawa: The Royal College of Physicians and Surgeons of Canada; 2015 March.

Cultural safety

Professional standard: Physicians engage in iterative and critical self-reflection of their own cultural identity, power, biases, prejudices and practising behaviours. Together with the requirement of understanding the cultural rights of the community they serve; this brings awareness and accountability for the impact of the physician's own culture on decision-making and healthcare delivery. It also allows for an adaptive practice where power is shared between patients, family, whānau and/or community and the physician, to improve health outcomes.



Physicians recognise the patient and population's rights for culturally-safe care, including being an ally for patient, family, whānau and/or community autonomy and agency over their decision-making. This shift in the physician's perspective fosters collaborative and engaged therapeutic relationships, allows for strength-based (or mana-enhanced) decisions, and sharing of power with the recipient of the care, optimising health care outcomes.

Physicians critically analyse their environment to understand how colonialism, systemic racism, social determinants of health and other sources of inequity have and continue to underpin the healthcare context. Consequently, physicians then can recognise their interfacing with, and contribution to, the environment in which they work to advocate for safe, more equitable and decolonised services and create an inclusive and safe workplace for all colleagues and team members of all cultural backgrounds.³

Critical reflection. Engage in iterative and critical self-reflection and demonstrate cultural safety in the context of their own cultural identity, power, biases, prejudices and practising behaviours.

Allyship. Recognise the patient and population's rights to culturally-safe care, including being an ally for patient, family, whānau and/or community autonomy and agency over their decision-making.

Inclusive communication. Apply culturally-safe communication, acknowledging the sharing of power, and cultural and human rights to enable patients, families and whānau to engage in appropriate patient care decisions.

Culturally-safe environment. Contributes to a culturally-safe learning and practice environment for patients and team members. Respect patients may feel unsafe in the healthcare environment.

³ The RACP has adopted the Medical Council of New Zealand's definition of cultural safety (below): Cultural safety can be defined as¹.

[•] The need for doctors to examine themselves and the potential impact of their own culture on clinical interactions and healthcare service delivery.

[•] The commitment by individual doctors to acknowledge and address any of their own biases, attitudes, assumptions, stereotypes, prejudices, structures, and characteristics that may affect the quality of care provided.

[•] The awareness that cultural safety encompasses a critical consciousness where healthcare professionals and healthcare organisations engage in ongoing self-reflection and self-awareness and hold themselves accountable for providing culturally safe care, as defined by the patient and their communities.

^{1.} Curtis et al. "Why cultural safety rather than cultural competency is required to achieve health equity". International Journal for Equity in Health (2019) 18:174



Ethics and professional behaviour

Professional standard: Physicians' practice is founded upon ethics, and physicians always treat patients, their families, communities, and populations in a caring and respectful manner.

Physicians demonstrate their commitment and accountability to the health and wellbeing of individual patients, communities, populations, and society through ethical practice.

Physicians demonstrate high standards of personal behaviour.

Beliefs and attitudes: Reflect critically on personal beliefs and attitudes, including how these may impact on patient care.

Honesty and openness: Act honestly, including reporting accurately, and acknowledging their own errors.

Patient welfare: Prioritise patients' welfare and community benefit above self-interest.

Accountability: Be personally and socially accountable.

Personal limits: Practise within their own limits and according to ethical principles and professional guidelines.

Self-care: Implement strategies to maintain personal health and wellbeing.

Respect for peers: Recognise and respect the personal and professional integrity, roles, and contribution of peers.

Interaction with professionals: Interact equitably, collaboratively, and respectfully with other health professionals.

Respect and sensitivity: Respect patients, maintain appropriate relationships, and behave equitably.

Privacy and confidentiality: Protect and uphold patients' rights to privacy and confidentiality.

Compassion and empathy: Demonstrate a caring attitude towards patients and endeavour to understand patients' values and beliefs.

Health needs: Understand and address patients', families', carers', and colleagues' physical and emotional health needs.

Medical and health ethics and law: Practise according to current community and professional ethical standards and legal requirements.

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Judgement and decision making

Professional standard: Physicians collect and interpret information, and evaluate and synthesise evidence, to make the best possible decisions in their practice.

Physicians negotiate, implement, and review their decisions and recommendations with patients, their families and carers, and other health professionals.

Diagnostic reasoning: Apply sound diagnostic reasoning to clinical problems to make logical and safe clinical decisions.

Resource allocation: Apply judicious and cost-effective use of health resources to their practice.

Task delegation: Apply good judgement and decision making to the delegation of tasks.

Limits of practice: Recognise their own scope of practice and consult others when required.

Shared decision making: Contribute effectively to team-based decision-making processes.

Leadership, management, and teamwork



Professional standard: Physicians recognise, respect, and aim to develop the skills of others, and engage collaboratively to achieve optimal outcomes for patients and populations.

Physicians contribute to and make decisions about policy, protocols, and resource allocation at personal, professional, organisational, and societal levels.

Physicians work effectively in diverse multidisciplinary teams and promote a safe, productive, and respectful work environment that is free from discrimination, bullying, and harassment.

Managing others: Lead teams, including setting directions, resolving conflicts, and managing individuals.

Wellbeing: Consider and work to ensure the health and safety of colleagues and other health professionals.

Leadership: Act as a role model and leader in professional practice.

Teamwork: Negotiate responsibilities within the healthcare team and function as an effective team member.



Health policy, systems, and advocacy

Professional standard: Physicians apply their knowledge of the nature and attributes of local, national, and global health systems to their own practices. They identify, evaluate, and influence health determinants through local, national, and international policy.

Physicians deliver and advocate for the best health outcomes for all patients and populations.

Health needs: Respond to the health needs of the local community and the broader health needs of the people of Australia and Aotearoa New Zealand.

Prevention and promotion: Incorporate disease prevention, health promotion, and health surveillance into interactions with individual patients and their social support networks.

Equity and access: Work with patients and social support networks to address determinants of health that affect them and their access to needed health services or resources.

Stakeholder engagement: Involve communities and patient groups in decisions that affect them to identify priority problems and solutions.

Advocacy: Advocate for prevention, promotion, equity, and access to support patient and population health needs within and outside the clinical environment.

Resource allocation: Understand the factors influencing resource allocation, promote efficiencies, and advocate to reduce inequities.

Sustainability: Manage the use of healthcare resources responsibly in everyday practice.

Entrustable Professional Activities



Entrustable Professional Activities (EPAs) outline the essential work tasks trainees need to be able to perform in the workplace.

#	Theme	Title
1	Team leadership	Lead a team of health professionals
2	Supervision and teaching	Supervise and teach professional colleagues
3	Quality improvement	Identify and address failures in health care delivery
4	Clinical assessment and management	Clinically assess and manage the ongoing care of patients
5	Management of transitions in care	Manage the transition of patient care between health professionals, providers, and contexts
6	Acute care	Manage the early care of acutely unwell patients
7	Longitudinal care	Manage and coordinate the longitudinal care of patients with chronic illness, disability, and/or long-term health issues
8	Communication with patients	Discuss investigations, diagnoses, and management plans with patients
9	Prescribing	Prescribe and monitor therapies tailored to patients' needs and conditions
10	Procedures	Plan, prepare for, perform, and provide aftercare for important practical procedures
11	Investigations	Select, organise, and interpret investigations
12	Clinic management	Manage an outpatient clinic

EPA 1: Team leadership

Theme	Team leadership	AT-EPA-01
Title	Lead a team of health professionals	
Description	 This activity requires the ability to: prioritise workload manage multiple concurrent tasks articulate individual responsibilities, team members understand the range of team member acquire and apply leadership technic collaborate with and motivate team team teacourage and adopt insights from teact as a role model. 	expertise, and accountability of pers' skills, expertise, and roles ques in daily practice members ream members
Behaviours		
Professional practice framework domain	Ready to perform without supervision Expected behaviours of a trainee who can routinely perform this activity without needing supervision	Requires some supervision Possible behaviours of a trainee who needs some supervision to perform this activity
	The trainee will:	The trainee may:
Medical expertise	 synthesise information with other disciplines to develop optimal, goal-centred plans for patients⁴ use evidence-based care to meet the needs of patients or populations assess and effectively manage clinical risk in various scenarios demonstrate clinical competence and skills by effectively supporting team members 	 demonstrate adequate knowledge of healthcare issues by interpreting complex information assess the spectrum of problems to be addressed apply medical knowledge to assess the impact and clinical outcomes of management decisions provide coordinated and quality health care for populations or patients as a member of a multidisciplinary team
Communication	 provide support and motivate patients or populations and health professionals by effective communication demonstrate a transparent, consultative style by engaging patients, families, carers, relevant professionals and/or the public in shared decision making work with patients, families, carers, and other health professionals to resolve conflict that may arise when planning and aligning goals 	 communicate adequately with colleagues communicate adequately with patients, families, carers, and/or the public respect the roles of team members

⁵ References to patients in the remainder of this document may include their families, whānau, and/or carers.

	 demonstrate rapport with people at all levels by tailoring messages to different stakeholders 	
	 identify opportunities to improve care by participating in surveillance and monitoring of adverse events and 'near misses' 	 participate in audits and other activities that affect the quality and safety of patients' care participate in interdisciplinary
Quality and safety	 identify activities within systems to reduce errors, improve patient and population safety, and implement cost-effective change place safety and quality of care first in all decision making 	 collaboration to provide effective health services and operational change use information resources and electronic medical record technology where available
	 regularly self-evaluate personal professional practice, and implement changes based on the results seek feedback proactively from 	 accept feedback constructively, and change behaviour in response recognise the limits of personal expertise, and involve other health professionals as needed
Teaching	 supervisors and colleagues on own performance identify personal gaps in skills and knowledge, and engage in self-directed learning 	 demonstrate basic skills in facilitating colleagues' learning
and learning	 maintain current knowledge of new technologies, health care priorities, and changes of patients' expectations 	
	 teach competently by imparting professional knowledge manage and monitor learner progress, providing regular assessment and feedback 	
Cultural safety	 demonstrate culturally competent relationships with professional colleagues and patients demonstrate respect for diversity and difference take steps to minimise unconscious bias, including the impact of gender, religion, cultural beliefs, and socioeconomic background on decision making 	 demonstrate awareness of cultural diversity and unconscious bias work effectively and respectfully with people from different cultural backgrounds
Ethics and professional behaviour	 promote a team culture of shared accountability for decisions and outcomes encourage open discussion of ethical and clinical concerns respect differences of multidisciplinary team members understand the ethics of resource allocation by aligning optimal patients and organisational care 	 support ethical principles in clinical decision making maintain standards of medical practice by recognising the health interests of patients or populations as primary responsibilities respect the roles and expertise of other health professionals work effectively as a member of a team

	•	acknowledge personal conflicts of interest and unconscious bias	•	demonstrate understanding of the negative impact of workplace
	•	act collaboratively to resolve behavioural incidents and conflicts such as harassment and bullying		conflict
	٠	evaluate health services and clarify expectations to support systematic, transparent decision	•	monitor services and provide appropriate advice
		making		interventions and resources
Judgement and	٠	make decisions when faced with multiple and conflicting perspectives	٠	interpret appropriate data and evidence for decision making
decision making	•	ensure medical input to organisational decision making		
	•	adopt a systematic approach to analysing information from a variety of specialties to make decisions that benefit health care delivery		
	•	combine team members' skills and expertise in delivering patient care and/or population advice	•	understand the range of personal and other team members' skills, expertise, and roles
Leadership,	٠	develop and lead effective multidisciplinary teams by developing and implementing strategies to motivate others	•	acknowledge and respect the contribution of all health professionals involved in patients' care
management, and teamwork	•	build effective relationships with multidisciplinary team members to achieve optimal outcomes	•	participate effectively and appropriately in multidisciplinary teams
	•	ensure all members of the team are accountable for their individual practice	•	seek out and respect the perspectives of multidisciplinary team members when making decisions
	•	engage in appropriate consultation with stakeholders on the delivery of health care	٠	communicate with stakeholders within the organisation about health care delivery
	•	advocate for the resources and support for healthcare teams to achieve organisational priorities	•	understand methods used to allocate resources to provide high-quality care
Health policy, systems, and advocacy	•	influence the development of organisational policies and procedures to optimise health outcomes	٠	promote the development and use of organisational policies and procedures
	•	identify the determinants of health of the population, and mitigate barriers to access to care		
	٠	remove self-interest from solutions to health advocacy issues		

EPA 2: Supervision and teaching

Theme	Supervision and teaching	AT-EPA-02		
Title	Supervise and teach professional col	leagues		
Description	 This activity requires the ability to: provide work-based teaching in a variety of settings teach professional skills create a safe and supportive learning environment plan, deliver, and provide work-based assessments encourage learners to be self-directed and identify learning experiences supervise learners in day-to-day work, and provide feedback support learners to prepare for assessments. 			
Behaviours				
<u>Professional</u> <u>practice</u> <u>framework</u> domain	Ready to perform without supervision Expected behaviours of a trainee who can routinely perform this activity without needing supervision	Requires some supervision Possible behaviours of a trainee who needs some supervision to perform this activity		
	The trainee will:	The trainee may:		
Medical expertise	 combine high-quality care with high-quality teaching explain the rationale underpinning a structured approach to decision making consider the patient-centric view during consultations consider the population health effect when giving advice encourage learners to consider the rationale and appropriateness of investigation and management options 	• teach learners using basic knowledge and skills		
Communication	 establish rapport and demonstrate respect for junior colleagues, medical students, and other health professionals communicate effectively when teaching, assessing, and appraising learners encourage a collaborative and safe learning environment with learners and other health professionals encourage learners to tailor communication as appropriate for different patients⁵, such as younger or older people, and different populations 	 demonstrate accessible, supportive, and compassionate behaviour 		

⁶ References to patients in the remainder of this document may include their families, whānau, and/or carers.

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	٠	support learners to deliver clear, concise, and relevant information in both verbal and written communication		
	٠	listen and convey information clearly and considerately		
	•	support learners to deliver quality care while maintaining their own wellbeing	•	observe learners to reduce risks and improve health outcomes
Quality	•	apply lessons learned about patient safety by identifying and discussing risks with learners		
and safety	•	assess learners' competence, and provide timely feedback to minimise risks to care		
	٠	maintain the safety of patients and organisations involved with education, and appropriately identify and action concerns		
	•	demonstrate knowledge of the principles, processes, and skills of supervision	•	demonstrate basic skills in the supervision of learners
	•	provide direct guidance to learners in day-to-day work	•	to teaching, assessment, and feedback without considering
	•	work with learners to identify professional development and learning opportunities based on their individual learning needs	•	individual learners' needs implement teaching and learning activities that are misaligned to learning goals
	•	offer feedback and role modelling	•	adopt a teaching style that
	٠	participate in teaching and supervision professional development activities		discourages learner self-directedness
Teaching	•	encourage self-directed learning and assessment		
and learning	•	develop a consistent and fair approach to assessing learners		
	•	tailor feedback and assessments to learners' goals		
	•	seek feedback and reflect on own teaching by developing goals and strategies to improve		
	٠	establish and maintain effective mentoring through open dialogue		
	•	support learners to identify and attend formal and informal learning opportunities		
	•	recognise the limits of personal expertise, and involve others appropriately		
	•	clarify junior colleagues' research project goals and requirements,	•	guide learners with respect to the choice of research projects
Research		and provide feedback regarding the merits or challenges of proposed research	٠	ensure that the research projects planned are feasible and of suitable standards

	 monitor the progress of learners' research projects regularly, and may review research projects prior to submission support learners to find forums to present research projects 	
	 encourage and guide learners to seek out relevant research to support practice 	
	 role model a culturally appropriate approach to teaching encourage learners to seek out opportunities to develop and improve their own cultural safety 	 function effectively and respectfully when working with and teaching with people from different cultural backgrounds
Cultural safety	 encourage learners to consider culturally appropriate care of Aboriginal and Torres Strait Islander peoples and Māori into patients' management 	
	 consider cultural, ethical, and religious values and beliefs in teaching and learning 	
	 apply principles of ethical practice to teaching scenarios 	• demonstrate professional values, including commitment to
Ethics and professional behaviour	 act as a role model to promote professional responsibility and ethics among learners 	high-quality clinical standards, compassion, empathy, and respectprovide learners with feedback
	respond appropriately to learners seeking professional guidance	to improve their experiences
	 prioritise workloads and manage learners with different levels of professional knowledge or experience 	 provide general advice and support to learners use health data logically and effectively to investigate difficult
	 link theory and practice when explaining professional decisions 	diagnostic problems
Judgement and decision making	 support a learning environment that allows for independent decision making 	
	 use sound and evidence-based judgement during assessments and when giving feedback to learners 	
	 escalate concerns about learners appropriately 	
	 maintain personal and learners' effective performance and continuing professional development 	 demonstrate the principles and practice of professionalism and leadership in health care participate in monter programs
Leadership, management, and teamwork	snip, ment, nworkmaintain professional, clinical, research, and/or administrative responsibilities while teaching	career advice, and general counselling
	 create an inclusive environment in which learners feel part of the team 	

	٠	help shape organisational culture to prioritise quality and work safety through openness, honesty, shared learning, and continued improvement		
Health policy,	•	advocate for suitable resources to provide quality supervision and maintain training standards	٠	incompletely integrate public health principals into teaching and practice
systems, and advocacy	٠	explain the value of health data in the care of patients or populations		
	٠	support innovation in teaching and training		

EPA 3: Quality improvement

Theme	Quality improvement	AT-EPA-03
Title	Identify and address failures in health	n care delivery
Description	 This activity requires the ability to: identify and report actual and potent conduct and evaluate system improve adhere to best practice guidelines audit clinical guidelines and outcome contribute to the development of pole patients and enhance health care monitor one's own practice and development 	tial ('near miss') errors vement activities es icies and protocols designed to protect elop individual improvement plans.
Behaviours		
Professional practice framework domain	Ready to perform without supervision Expected behaviours of a trainee who can routinely perform this activity without needing supervision	Requires some supervision Possible behaviours of a trainee who needs some supervision to perform this activity
	The trainee will:	The trainee may:
Medical expertise	 use population health outcomes to identify opportunities for improvement in delivering appropriate care regularly review patients' or population health outcomes to identify opportunities for improvement in delivering appropriate care evaluate environmental and lifestyle health risks, and advocate for healthy lifestyle choices use standardised protocols to adhere to best practice and prevent the occurrence of wrong-site, wrong-patient procedures regularly monitor personal professional performance 	 contribute to processes on identified opportunities for improvement recognise the importance of prevention and early detection in clinical practice use local guidelines to assist patient care decision making
Communication	 support patients⁶ to have access to, and use, easy-to-understand, high-quality information about health care support patients to share decision making about their own health care, to the extent they choose assist patients' access to their health information as well as 	 demonstrate awareness of the evidence for consumer engagement and its contribution to quality improvement in healthcare apply knowledge of how health literacy might affect the way patients or populations gain access to, understand, and use

⁶ References to patients in the remainder of this document may include their families, whānau, and/or carers.

	٠	discuss with patients any safety and quality concerns they have relating to their care		
	٠	implement the organisation's open disclosure policy		
	٠	demonstrate safety skills, including infection control, adverse event reporting, and effective clinical handover	٠	demonstrate understanding of a systematic approach to improving the quality and safety of health care
	٠	participate in organisational quality and safety activities, including morbidity and mortality reviews, clinical incident reviews, root cause analyses, and corrective action preventative action plans		
Quality and safety	٠	participate in systems for surveillance and monitoring of adverse events and 'near misses', including reporting such events		
	٠	ensure that identified opportunities for improvement are raised and reported appropriately		
	٠	use clinical audits and registries of data on patients' experiences and outcomes, learnings from incidents, and complaints to improve care		
	•	translate quality improvement approaches and methods into practice	•	work within organisational quality and safety systems for the delivery of clinical care
Teaching and learning	•	participate in professional training in quality and safety to ensure a contemporary approach to safety system strategies	•	use opportunities to learn about safety and quality theory and systems
	•	supervise and manage the performance of junior colleagues in the delivery of high-quality, safe care		
Research	•	ensure that any protocol for human research is approved by a human research ethics committee, in accordance with the national statement on ethical conduct in human research	•	demonstrate understanding that patient participation in research is voluntary and based on an appropriate understanding about the purpose, methods, demands, risks, and potential benefits of the research
Cultural safety	٠	undertake professional development opportunities that address the impact of cultural bias on health outcomes	•	communicate effectively with patients from culturally and linguistically diverse backgrounds
Ethics and professional behaviour	•	align improvement goals with the priorities of the organisation contribute to developing an organisational culture that enables and prioritises patients' safety and quality	•	comply with professional regulatory requirements and codes of conduct

Judgement and decision making	 use decision-making support tools, such as guidelines, protocols, pathways, and reminders 	 access information and advice from other health practitioners to identify, evaluate, and improve patients' care management
	 analyse and evaluate current care processes to improve healthcare 	
Leadership, management, and teamwork	 formulate and implement quality improvement strategies as a collaborative effort, involving all key health professionals support multidisciplinary team activities to lower patients' risk of harm, and promote interdisciplinary programs of education 	 demonstrate attitudes of respect and cooperation among members of different professional teams partner with clinicians and managers to ensure patients receive appropriate care and information on their care
	actively in the medication-use process	
	 participate in all aspects of the development, implementation, evaluation, and monitoring of governance processes participate regularly in multidisciplinary meetings where quality and safety issues are standing agenda items, and where innovative ideas and projects for improving care are actively encouraged 	 maintain a dialogue with service managers about issues that affect patient care contribute to relevant organisational policies and procedures help shape an organisational culture that prioritises safety and quality through openness, honesty, learning, and quality improvement
Health policy, systems, and advocacy	• measure, analyse, and report a set of specialty-specific process of care and outcome clinical indicators, and a set of generic safety indicators	
	 take part in the design and implementation of the organisational systems for: clinical, and safety and quality education and training defining the scope of clinical practice performance monitoring and management 	

Theme	Clinical assessment and managemen	t AT-EPA-04
Title	Clinically assess and manage the ong	going care of patients
Description	 This activity requires the ability to: identify and access sources of relev obtain patient histories examine patients synthesise findings to develop provision discuss findings with patients generate management plans present findings to other health profes 	ant information about patients ⁷ sional and differential diagnoses essionals.
Behaviours		
<u>Professional</u> <u>practice</u> <u>framework</u> domain	Ready to perform without supervision Expected behaviours of a trainee who can routinely perform this activity without needing supervision	Requires some supervision Possible behaviours of a trainee who needs some supervision to perform this activity
	The trainee will:	The trainee may:
Medical expertise	 elicit accurate, organised, and problem-focused medical histories, considering physical, psychosocial, and risk factors perform full physical examinations to establish the nature and extent of problems, including emergency rheumatological conditions recognise non-articular manifestations, especially those with potential implications in the diagnosis and/or management of musculoskeletal conditions use, apply, and interpret measures of: cumulative damage disease activity functional status, including growth and developmental status analyse and interpret clinical, laboratory, and imaging data synthesise an appropriate differential diagnosis and an investigational plan, considering 	 take patient-centred histories, considering psychosocial factors perform accurate physical examinations recognise and correctly interpret abnormal findings synthesise pertinent information to direct clinical encounters and diagnostic categories develop appropriate management plans

EPA 4: Clinical assessment and management

⁷ References to patients in the remainder of this document may include their families, whānau, and/or carers.

	 assess the severity of problems, the likelihood of complications, and clinical outcomes
	 synthesise and interpret findings from histories and examinations to devise the most likely provisional diagnoses via reasonable differential diagnoses
	 develop management plans based on relevant guidelines, and consider the balance of benefit and harm by taking patients' personal sets of circumstances into account
	 appropriately select and sequence therapeutic modalities
	 recognise the differences between paediatric and adult patients, and the impact of rheumatic disease in childhood
	 perform disability determination and measurement for the purposes of assessment for Carer Allowance
	 communicate openly, listen, and take patients' concerns seriously, giving them adequate opportunity to ask questions anticipate, read, and respond to verbal and nonverbal cues demonstrate active listening skills communicate patients' situations
Communication	 provide information to patients to enable them to make fully informed decisions from various diagnostic, therapeutic, and management options to colleagues, including senior clinicians
	• communicate clearly, effectively, respectfully, and promptly with other health professionals involved in patients' care
	 provide patient and family education and support
Quality and safety	• demonstrate safety skills, including infection control, adverse event reporting, and effective clinical • perform hand hygiene, and take infection control precautions at appropriate moments
	 recognise and effectively deal with aggressive and violent patient behaviours through appropriate take precaution against assaults from confused or agitated patients, ensuring appropriate care of patients
	 training obtain informed consent before undertaking any investigation or providing treatment (except in an emergency) document history and physical examination findings, and synthesise with clarity and completeness
	 ensure patients are informed of the material risks associated with any part of proposed management plans

Teaching and learning	 set defined objectives for clinical teaching encounters, and solicit feedback on mutually agreed goals regularly reflect upon and self-evaluate professional development obtain informed consent before involving patients in teaching activities turn clinical activities into an opportunity to teach, appropriate to the setting 	 set clear goals and objectives for self-learning deliver teaching considering learners' level of training
Research	 search for, find, compile, analyse, interpret, and evaluate information relevant to the research subject 	 refer to guidelines and medical literature to assist in clinical assessments when required demonstrate an understanding of the limitations of evidence and the challenges of applying research in daily practice
Cultural safety	 use plain-language patient education materials, and demonstrate cultural and linguistic sensitivity demonstrate effective and culturally competent communication and care for Aboriginal and Torres Strait Islander peoples and Māori, and members of other cultural groups use a professional interpreter, health advocate, or a family or communication with patients, and understand the potential limitations of each incorporate appropriate LGBTQIA+ safe language acknowledge patients' beliefs and values, and how these might impact on health 	 display respect for patients' cultures, and attentiveness to social determinants of health display an understanding of at least the most prevalent cultures in society, and an understanding of their sensitivities appropriately access interpretive or culturally focused services
Ethics and professional behaviour	 demonstrate professional values, including compassion, empathy, respect for diversity, integrity, honesty, and partnership to all patients hold information about patients in confidence, unless the release of information is required by law or public interest assess patients' capacity for decision making, involving a proxy decision maker appropriately 	 demonstrate professional conduct, honesty, and integrity consider patients' decision-making capacity identify patients' preferences regarding management and the role of families in decision making not advance personal interest or professional agendas at the expense of patient or social welfare

Judgement and decision making	 apply knowledge and experience to identify patients' problems, making logical, rational decisions, and acting to achieve positive outcomes for patients use a holistic approach to health, considering comorbidity, risk, and uncertainty use the best available evidence for the most effective therapies and interventions to ensure quality care 	 demonstrate clinical reasoning by gathering focused information relevant to patients' care recognise personal limitations and seek help in an appropriate way when required
Leadership, management, and teamwork	 work effectively as a member of multidisciplinary teams to achieve the best health outcomes for patients demonstrate awareness of colleagues in difficulty, and work within the appropriate structural systems to support them while maintaining patient safety 	 share relevant information with members of the healthcare team
Health policy, systems, and advocacy	 participate in health promotion, disease prevention and control, screening, and reporting notifiable diseases aim to achieve the optimal cost-effective patient care to allow maximum benefit from the available resources 	 identify and navigate components of the healthcare system relevant to patients' care identify and access relevant community resources to support patients' care

EPA 5: Management of transitions in care

Theme	Management of transitions in care	AT-EPA-05
Title	Manage the transition of patient care providers, and contexts	between health professionals,
Description	 This activity requires the ability to: manage the transition of patient⁸ car of care between providers identify the appropriate care provide whom to share patient information exchange pertinent, contextually apprinformation explain the challenges surrounding tand clinicians perform this activity in multiple settin including inpatient, ambulatory, and 	re to ensure the optimal continuation ers and other stakeholders with propriate, and relevant patient the transition to adult care for patients ngs, appropriate to the speciality, critical care settings.
Behaviours		
<u>Professional</u> <u>practice</u> <u>framework</u> domain	Ready to perform without supervision Expected behaviours of a trainee who can routinely perform this activity without needing supervision	Requires some supervision Possible behaviours of a trainee who needs some supervision to perform this activity
	The trainee will:	The trainee may:
Medical expertise	 facilitate an optimal transition of care for patients identify and manage key risks for patients during transition explain the importance of comprehensive and structured transition to adult services for patients with chronic rheumatic disease prepare patients for transition collaborate with other medical services to appropriately manage patients with rheumatic disorders, and work in a multidisciplinary team 	 explain the details of patients' conditions, illness severity, and potential emerging issues with appropriate actions provide accurate summaries of patients' information with accurate identification of problems or issues
Communication	 write relevant and detailed medical record entries, including clinical assessments and management plans write comprehensive and accurate summaries of care, including discharge summaries, clinic letters, and transfer documentation initiate and maintain verbal communication with other health professionals, when required 	 communicate clearly with clinicians and other caregivers use standardised verbal and written templates to improve the reliability of information transfer and prevent errors and omissions communicate accurately and in a timely manner to ensure effective transitions between settings and continuity and quality of care

⁸ References to patients in the remainder of this document may include their families, whānau, and/or carers.

	٠	communicate with patients about transitions of care, and engage and support these parties in decision making		
	٠	identify patients at risk of poor transitions of care, and mitigate this risk	٠	ensure that handover is complete, or work to mitigate risks if incomplete
Quality	٠	use electronic tools (where available) to securely store and transfer patient information	٠	ensure all outstanding results or procedures are followed up by receiving units and clinicians
and safety	•	use consent processes, including written consent if required, for the release and exchange of information	٠	keep patients' information secure, adhering to relevant legislation regarding personal information and privacy
	•	demonstrate understanding the medicolegal context of written communications		
Teaching	٠	integrate clinical education in handover sessions and other transition of care meetings	•	take opportunities to teach junior colleagues during handover, as necessary
and learning	٠	tailor clinical education to the level of the professional parties involved		
Cultural safety	•	communicate with careful consideration to health literacy, language barriers, and culture regarding patient preferences, and whether they are realistic and possible, respecting patient choices	•	include relevant information regarding patients' cultural or ethnic background in handovers, and whether an interpreter is required
	•	incorporate appropriate LGBTQIA+ safe language		
	•	recognise the timing, location, privacy, and appropriateness of sharing information with patients		
	•	disclose and share only contextually appropriate medical and personal information	٠	maintain respect for patients and other health professionals, including respecting privacy and
	•	demonstrate understanding of the clinical, ethical, and legal rationale for information disclosure		confidentiality
Ethics and	•	share information about patients' health care in a manner consistent with privacy law and professional guidelines on confidentiality		
professional behaviour	•	demonstrate understanding of the additional complexity related to some types of information, such as genetic information and blood-borne-virus status, and seek appropriate advice about disclosure of such information		
	٠	interact in a collegiate and collaborative way with professional colleagues during transitions of care		

Judgement and decision making	 ensure patients' care is in the most appropriate facility, setting, or provider 	 use a structured approach to consider and prioritise patients' issues recognise personal limitations and seek help in an appropriate way when required
Leadership, management, and teamwork	 share the workload of transitions of care appropriately, including delegation demonstrate understanding of the medical governance of patient care, and the differing roles of team members show respect for the roles and expertise of other health professionals, and work effectively as a member of professional teams ensure that multidisciplinary teams provide the opportunity for patients' engagement and participation when appropriate 	 recognise factors that impact the transfer of care, and help subsequent health professionals understand the issues to continue care work to overcome the potential barriers to continuity of care, appreciating the role of handover in overcoming these barriers
Health policy, systems, and advocacy	 contribute to processes for managing risks, and identify strategies for improvement in transition of care engage in organisational processes to improve transitions of care, such as formal surveys or follow-up phone calls after hospital discharge 	 factor transport issues and costs to patients into arrangements for transferring patients to other settings

EPA 6: Acute care

Theme	Acute care	AT-EPA-06
Title	Manage the early care of acutely unw	ell patients
Description	 This activity requires the ability to: assess seriously unwell patients⁹, a recognise clinical deterioration, and for escalation of care recognise and manage acutely unw lead the resuscitation team initially, liaise with transport services and me perform this activity primarily in inpa identify patients in external settings 	nd initiate management respond by following the local process ell patients who require resuscitation and involve other necessary services edical teams tient settings who require transfer to tertiary service.
Behaviours		
Professional practice framework domain	Ready to perform without supervision Expected behaviours of a trainee who can routinely perform this activity without needing supervision	Requires some supervision Possible behaviours of a trainee who needs some supervision to perform this activity
	The trainee will:	The trainee may:
Medical expertise	 recognise immediate life-threatening conditions and deteriorating and critically unwell patients, and respond appropriately perform advanced life support, according to resuscitation council guidelines, to a high level of advanced resuscitation skills demonstrate knowledge of potential risks and complications of resuscitation assess, diagnose, and manage acute undifferentiated clinical presentations select investigations that ensure maximum patient safety through excluding or diagnosing critical patient issues systematically identify causes of acute deterioration in health status and levels of physical and cognitive functioning manage escalations or transitions of care in a proactive and timely manner provide clear and effective discharge summaries with recommendations for ongoing care 	 recognise seriously unwell patients requiring immediate care apply basic life support as indicated explain general medical principles of caring for patients with undifferentiated and undiagnosed conditions identify potential causes of current deterioration, and comply with escalation protocols facilitate initial tests to assist in diagnosis and develop management plans for immediate treatment document information to outline the rationale for clinical decisions and action plans assess perioperative and periprocedural patients

⁹ References to patients in the remainder of this document may include their families, whānau, and/or carers.

	 develop plans of multidisciplinary treatment, rehabilitation, and secondary prevention following acute events optimise medical management 	
	before, during, and after operations	
	 communicate clearly with other team members, and coordinate efforts of multidisciplinary team members 	 demonstrate communication skills to support the function of multidisciplinary teams determine patients' understanding
	 use <u>closed-loop</u> and clear communication with other health care team members during resuscitation 	of their diseases, if possible, and what they perceive as the most desirable goals of care
	 facilitate early communication with patients and healthcare team members to allow shared decision making 	
Communication	 negotiate realistic treatment goals, and determine and explain the expected prognoses and outcomes 	
	 employ communication strategies appropriate for younger patients or those with cognitive difficulties 	
	 explain the situation to patients in a sensitive and supportive manner, avoiding jargon and confirming their understanding 	
	• determine the level of health literacy of individual patients, and their level of understanding of agreed care decisions	
	 maintain up-to-date certification in advanced life support 	 evaluate the quality of processes through well-designed audits
	 use clinical information technology systems for conducting 	 recognise the risks and benefits of operative interventions
Quality and safety	clinical audits	 raise appropriate issues for review at morbidity and mortality meetings
	 evaluate and explain the benefits and risks of clinical interventions based on individual patients' circumstances 	 evaluate the quality and safety processes implemented within the workplace, and identify gaps in their structure
	 analyse adverse incidents and sentinel events to identify system failures and contributing factors 	
	 identify evidence-based practice gaps using clinical indicators, and implement changes to improve patients' outcomes 	
	 coordinate and encourage innovation, and objectively evaluate improvement initiatives for outcomes and sustainability 	

Teaching and learning	 demonstrate effective supervision skills and teaching methods that are adapted to the context of the training encourage questioning among junior colleagues and students in response to unanswered clinical questions seek guidance and feedback from healthcare teams to reflect on encounters and improve future patients' care 	 mentor and train others to enhance team effectiveness provide constructive feedback to junior colleagues to contribute to improvements in individuals' skills coordinate and supervise junior colleagues from the emergency department and the wards
Research	 select studies based on optimal trial design, freedom from bias, and precision of measurement evaluate the value of treatments in terms of relative and absolute benefits, cost, potential patient harm, and feasibility evaluate the applicability of the results of clinical studies to the circumstances of individual patients, especially those with multiple comorbidities specify research evidence to the needs of individual patients 	 demonstrate efficient searching of literature databases to retrieve evidence use information from credible sources to aid in decision making refer to evidence-based clinical guidelines and protocols on acutely unwell patients demonstrate an understanding of the limitations of the evidence and the challenges of applying research in daily practice
Cultural safety	 negotiate health care decisions in a culturally appropriate way by considering variation in family structures, cultures, religion, or belief systems integrate culturally appropriate care of Aboriginal and Torres Strait Islander peoples and Māori into patients' management incorporate appropriate LGBTQIA+ safe language consider cultural, ethical, and religious values and beliefs in leading multidisciplinary teams 	 practise cultural safety appropriate for the community serviced identify difficulties to access to healthcare proactively
Ethics and professional behaviour	 develop management plans that are based on medical assessments of the clinical conditions and multidisciplinary assessments of functional capacity advise patients of their rights to refuse medical therapy, including life-sustaining treatment consider the consequences of delivering treatment that is deemed futile, directing to other care as appropriate 	 communicate medical management plans as part of multidisciplinary plans establish, where possible, patients' wishes and preferences about care contribute to building a productive culture within teams

	 facilitate interactions within multidisciplinary teams, respecting values, encouraging involvement, and engaging all participants in decision making demonstrate critical reflection on personal beliefs and attitudes, including how these may affect patient care and health care policy 	
Judgement and decision making	 recognise the need for escalation of care, and escalate to appropriate staff or services integrate evidence related to questions of diagnosis, therapy, prognosis, risks, and cause into clinical decision making reconcile conflicting advice from other specialties, applying judgement in making clinical decisions in the presence of uncertainty use care pathways effectively, including identifying reasons for variations in care 	 involve additional staff to assist in a timely fashion when required recognise personal limitations and seek help in an appropriate way when required
Leadership, management, and teamwork	 work collaboratively with staff in the emergency department, intensive care, and other subspecialty inpatient units manage the transition of acute medical patients through their hospital journeys lead a team by providing engagement while maintaining a focus on outcomes 	 collaborate with and engage other team members, based on their roles and skills ensure appropriate multidisciplinary assessment and management foster an environment of openness and respect to lead effective teams
Health policy, systems, and advocacy	 use a considered and rational approach to the responsible use of resources, balancing costs against outcomes prioritise patient care based on need, and consider available healthcare resources collaborate with emergency medicine staff and other colleagues to develop policies and protocols for the investigation and management of common acute medical problems 	 understand the systems for the escalation of care for deteriorating patients understand the role of clinician leadership and advocacy in appraising and redesigning systems of care that lead to better patient outcomes
EPA 7: Longitudinal care

Theme	Longitudinal care	AT-EPA-07
Title	Manage and coordinate the longitudin illness, disability, and/or long-term he	nal care of patients with chronic ealth issues
Description	 This activity requires the ability to: develop management plans and goa manage chronic and advanced cond and comorbidities collaborate with other health care pr ensure continuity of care facilitate patients' self-management engage with the broader health policity 	als in consultation with patients ¹⁰ ditions, complications, disabilities, oviders and self-monitoring cy context.
Behaviours		
Professional practice framework domain	Ready to perform without supervision Expected behaviours of a trainee who can routinely perform this activity without needing supervision	Requires some supervision Possible behaviours of a trainee who needs some supervision to perform this activity
	The trainee will:	The trainee may:
Medical expertise	 assess regularly and review care plans for patients with chronic conditions and disabilities, based on short- and long-term clinical and quality of life goals provide documentation on patients' presentation, management, and progress, including key points of diagnosis and decision making to inform coordination of care ensure patients contribute to their needs assessments and care planning monitor treatment outcomes, effectiveness, and adverse events plan and support patients' transitions of care from paediatric to adult rheumatology services, acknowledging that management plans for childhood and adult rheumatic diseases may differ demonstrate a reflective understanding of the differences and similarities between paediatric, adolescent, and adult care, and help empower young people to negotiate their own care 	 assess patients' knowledge, beliefs, concerns, and daily behaviours related to their chronic condition and/or disability and its management contribute to medical record entries on histories, examinations, and management plans in a way that is accurate and sufficient as a member of multidisciplinary teams

¹⁰ References to patients in the remainder of this document may include their families, whānau, and/or carers.

	•	explain the impact and relevance of rheumatologic disease on attainment of independence in all aspects of life as an adult		
Communication	•	encourage patients' self-management through education to take greater responsibility for their care, and support problem solving encourage patients' access to self-monitoring devices and assistive technologies communicate with multidisciplinary team members, and involve	•	provide healthy lifestyle advice and information to patients on the importance of self-management work in partnership with patients, and motivate them to comply with agreed care plans
	•	patients in that dialogue use innovative models of chronic	•	participate in continuous quality
		disease care, using telehealth and digitally integrated support services		improvement processes and clinical audits on chronic disease management
Quality	•	review medicine use and ensure patients understand safe medication administration to prevent errors	•	identify activities that may improve patients' quality of life
and safety	•	support patients' self-management by balancing between minimising risk and helping patients become more independent		
	•	participate in quality improvement processes impacting on patients' abilities to undertake normal activities of daily living		
Teaching	•	contribute to the development of clinical pathways for chronic diseases management based on current clinical guidelines	٠	use clinical practice guidelines for chronic diseases management
and learning	•	educate patients to recognise and monitor their symptoms, and undertake strategies to assist their recovery		
Pasaarah	•	prepare reviews of literature on patients' encounters to present at journal club meetings	•	search literature using problem / intervention / comparison / outcome (PICO) format
	٠	search for and critically appraise evidence to resolve clinical areas of uncertainty	٠	recognise appropriate use of review articles
Cultural safety	•	encourage patients from culturally and linguistically diverse backgrounds to join local networks to receive the support needed for long-term self-management	٠	provide culturally safe chronic disease management
	•	incorporate appropriate LGBTQIA+ safe language		
Ethics and professional behaviour	•	share information about patients' health care, consistent with privacy laws and confidentiality and professional guidelines	٠	share information between relevant service providers

	 use consent processes for the release and exchange of health information assess patients' decision-making capacity, and appropriately identify and use alternative decision makers 	 acknowledge and respect the contribution of health professionals involved in patients' care
Judgement and decision making	 implement stepped care pathways in the management of chronic diseases and disabilities recognise patients' needs in terms of both internal resources and external support on long-term health care journeys 	 recognise personal limitations and seek help in an appropriate way when required
Leadership, management, and teamwork	 coordinate whole-person care through involvement in all stages of patients' care journeys use a multidisciplinary approach across services to manage patients with chronic diseases and disabilities develop collaborative relationships with patients and a range of health professionals 	 participate in multidisciplinary care for patients with chronic diseases and disabilities, including organisational and community care on a continuing basis, appropriate to patients' context
Health policy, systems, and advocacy	 use health screening for early intervention and chronic diseases management assess alternative models of health care delivery to patients with chronic diseases and disabilities participate in government initiatives for chronic diseases management to reduce hospital admissions and improve patients' quality of life help patients access initiatives and services for patients with chronic diseases and disabilities 	 demonstrate awareness of government initiatives and services available for patients with chronic diseases and disabilities, and display knowledge of how to access them

EPA 8: Communication with patients

Theme	Communication with patients AT-EPA-08
Title	Discuss investigations, diagnoses, and management plans with patients
Description	 This activity requires the ability to: select a suitable context, and include family and/or carers and other team members adopt a patient-centred perspective, including adjusting for cognition and disabilities select and use appropriate modalities and communication strategies structure conversations intentionally negotiate mutually agreed management plans verify patients'¹¹ understanding of information conveyed develop and implement plans to ensure actions occur ensure conversations are documented.
Behaviours	
<u>Professional</u> <u>practice</u> <u>framework</u> domain	Ready to perform without supervision Expected behaviours of a trainee who can routinely perform this activity without needing supervision
	The trainee will: The trainee may:
Medical expertise	 anticipate and be able to correct any misunderstandings patients may have about their conditions and/or risk factors inform patients of all aspects of their clinical management, including assessments and investigations, and give them adequate opportunity to question or refuse interventions and treatments seek to understand the concerns and goals of patients, and plan management in partnership with them provide information to patients to enable them to make informed decisions about diagnostic, therapeutic, and management options apply knowledge of the scientific basis of health and disease to the management of patients demonstrate an understanding of the clinical problem being discussed formulate management plans in partnership with patients
Communication	 use appropriate communication strategies and modalities for communication, such as emails, face-to-face, or phone calls elicit patients' views, concerns, and preferences, promoting rapport select appropriate modes of communication engage patients in discussions, avoiding the use of jargon check patients' understanding of information

¹¹ References to patients in the remainder of this document may include their families, whānau, and/or carers.

	•	provide information to patients in plain language, avoiding jargon, acronyms, and complex medical terms encourage questions, and answer them thoroughly ask patients to share their thoughts or explain their management plan in their own words, to verify understanding	•	adapt communication style in response to patients' age and developmental level, and cognitive, physical, cultural, socioeconomic, and situational factors collaborate with patient liaison officers as required
	•	convey information considerately and sensitively to patients, seeking clarification if unsure of how best to proceed		
	٠	treat children and young people respectfully, and listen to their views		
	٠	recognise the role of family or carers and, when appropriate, encourage patients to involve their family or carers in decisions about their care		
	•	discuss the possible impacts of rheumatological disorders with patients, including social, familial, emotional, financial, educational, professional, and physical impacts		
	•	recognise when the therapeutic relationship should end and understand ethical and legal requirements		
	•	discuss with patients their condition and the available management options, including potential benefits and harms	•	inform patients of the material risks associated with the proposed management plan treat information about patients
Quality	•	provide information to patients in a way they can understand before asking for their consent		as confidential
and safety	•	consider young people's capacity for decision making and consent		
	•	recognise and take precautions where patients may be vulnerable, such as issues of child protection or self-harm		
	٠	participate in processes to manage patient complaints		
Teaching and learning	•	discuss the aetiology of diseases and explain the purpose, nature, and extent of assessments to be conducted	•	respond appropriately to information sourced by patients, and to patients' knowledge regarding their condition
	•	obtain informed consent or other valid authority before involving patients in teaching		
Research	•	provide information to patients that is based on guidelines issued by the National Health and Medical	•	refer to evidence-based clinical guidelines

		Research Council and/or Health	•	demonstrate an understanding
		Nesearch Council of New Zealand		and the challenges of applying
	٠	provide information to patients in a way they can understand before asking for their consent to participate in research		research in daily practice
	•	obtain an informed consent or other valid authority before involving patients in research		
	٠	use evidence effectively and efficiently to inform clinical decision making		
	•	demonstrate effective and culturally competent communication with Aboriginal and Torres Strait Islander peoples and Māori	•	identify when to use interpreters allow enough time for communication with members of other cultural groups by meeting patients' specific communication.
Cultural safety	٠	communicate effectively with members of other cultural groups by meeting patients' specific language, cultural, and communication needs		cultural, and language needs
	٠	use qualified language interpreters or cultural interpreters to help meet patients' communication needs		
	•	provide plain language and culturally appropriate written materials to patients when possible		
	•	incorporate appropriate LGBTQIA+ safe language		
	•	encourage and support patients to be well informed about their health, and to use this information wisely when they make decisions	•	respect the preferences of patients communicate appropriately, consistent with the context, and respect patients' needs
	•	encourage and support patients in caring for themselves and managing their health	٠	and preferences maximise patient autonomy, and support their decision making
	•	 demonstrate respectful professional relationships with patients prioritise honesty, patients' welfare, and community benefit above self-interest develop a high standard of 	٠	avoid sexual, intimate, and/or financial relationships with patients
Ethics and professional	٠		٠	demonstrate a caring attitude towards patients
behaviour	•		•	respect patients, including protecting their rights to privacy and confidentiality
	personal conduct, consistent with professional and commun expectations	personal conduct, consistent with professional and community expectations	٠	behave equitably towards all, irrespective of gender, age, culture, socioeconomic status, sexual
	٠	support patients' rights to seek second opinions		preferences, beliefs, contribution to society, illness-related behaviours, or the illness itself
			٠	use social media ethically and according to legal obligations

		to protect patients' confidentiality and privacy
Leadership, management, and teamwork	 communicate effectively with team members involved in patients' care, and with patients discuss medical assessments, treatment plans, and investigations with patients and primary care teams, working collaboratively with all discuss patient care needs with healthcare team members to align them with the appropriate resources facilitate an environment in which all team members feel they can contribute and their opinion is valued communicate accurately and succinctly, and motivate others on the healthcare team 	 answer questions from team members summarise, clarify, and communicate responsibilities of healthcare team members keep healthcare team members focused on patient outcomes
Health policy, systems, and advocacy	 collaborate with other services, such as community health centres and consumer organisations, to help patients navigate the healthcare system 	 communicate with and involve other health professionals as appropriate

EPA 9: Prescribing

Theme	Prescribing	AT-EPA-09
Title	Prescribe and monitor therapies tailo	red to patients' needs and conditions
Description	 This activity requires the ability to: take and interpret medication histori choose appropriate medicines base taking into consideration age, comorrisks, and benefits communicate with patients¹² about the therapies provide instructions on medication age monitor medicines for efficacy and service medicines and interactions, age collaborate with pharmacists. 	es d on an understanding of pharmacology, rbidities, potential drug interactions, he benefits and risks of proposed administration effects and side effects safety and cease where appropriate
Professional practice framework domain	Ready to perform without supervision Expected behaviours of a trainee who can routinely perform this activity without needing supervision	Requires some supervision Possible behaviours of a trainee who needs some supervision to perform this activity
Medical expertise	 identify the patients' disorders requiring pharmacotherapy consider non-pharmacologic therapies consider age, chronic disease status, lifestyle factors, allergies, potential drug interactions, and patients' preference prior to prescribing new medications plan for follow-up and monitoring describe the pharmacological differences between children and adults 	 be aware of potential side effects and practical prescription points, such as medication compatibility and monitoring in response to therapies select medicines for common conditions appropriately, safely, and accurately demonstrate understanding of the rationale, risks, benefits, side effects, contraindications, dosage, and drug interactions identify and manage adverse events
Communication	 discuss and evaluate the risks, benefits, and rationale of treatment options, making decisions in partnership with patients write clear and legible prescriptions in plain language, and include specific indications for the anticipated duration of therapy identify patients' concerns and expectations, and explain how medicines might affect their everyday lives 	 discuss and explain the rationale for treatment options with patients explain the benefits and burdens of therapies, considering patients' individual circumstances write clearly legible scripts or charts using generic names of the required medication in full, including mg / kg / dose information and all legally required information seek further advice from experienced clinicians or pharmacists when appropriate

¹² References to patients in the remainder of this document may include their families, whānau, and/or carers.

	•	educate patients about the intended use, expected outcomes, and potential side effects for each prescribed medication, addressing the common, rare, and serious side effects at the time of prescribing to improve patients' adherence to pharmacotherapy		
	•	describe how the medication should and should not be administered, including any important relationships to food, time of day, and other medicines being taken		
	•	ensure patients' understanding by repeating back pertinent information, such as when to return for monitoring and whether therapy continues after this single prescription		
	•	counsel patients about the use of immunosuppressive treatments and their effects on lifestyle, such as contraception and alcohol, and the long-term risks, including unknown risks, such as fertility and malignancy		
	•	use members of the multidisciplinary team, such as specialist paediatric nurses, to counsel families regarding		
		medications, monitoring, and compliance		
	•	review medicines regularly to reduce non-adherence and monitor treatment effectiveness, possible side effects, and drug interactions, ceasing unnecessary	•	check the dose before prescribing monitor side effects of medicines prescribed identify medication errors and institute appropriate measures
	•	use electronic prescribing tools where available, and access electronic drug references to	•	use electronic prescribing systems safely rationalise medicines to avoid
		prevent errors caused by drug interactions and poor handwriting		polypharmacy
Quality and safety	•	prescribe new medicines only when they have been demonstrated to be safer or more effective at improving patient-oriented outcomes than existing medicines		
	•	participate in clinical audits to improve prescribing behaviour, including an approach to polypharmacy and prescribing cascade		
	•	report suspected adverse events to the Advisory Committee on Medicines, and record it in patients' medical records		

	 use continuously updated software for computers and electronic prescribing programs 	 undertake continuing professional development to maintain currency with prescribing guidelines
Teaching and learning	 ensure patients understand management plans, including adherence issues 	 reflect on prescribing, and seek feedback from a supervisor
	 use appropriate guidelines and evidence-based medicine resources to maintain a working knowledge of current medicines, keeping up to date on new medicines 	
	 critically appraise research material to ensure any new medicine improves 	 make therapeutic decisions according to the best evidence recognise where evidence is limited
Research	patient-oriented outcomes more than older medicines, and not just more than placebo	compromised, or subject to bias or conflict of interest
	 use sources of independent information about medicines that provide accurate summaries of the available evidence on new medicines 	
	 explore patients' understanding of and preferences for non-pharmacological and pharmacological management 	 appreciate patients' cultural and religious backgrounds, attitudes, and beliefs, and how these might influence the
	 offer patients effective choices based on their expectations of treatment, health beliefs, and cost 	acceptability of pharmacological and non-pharmacological management approaches
Cultural safety	 interpret and explain information to patients at the appropriate level of their health literacy 	
	 anticipate queries to help enhance the likelihood of medicines being taken as advised 	
	 ensure appropriate information is available at all steps of the medicine management pathway 	
	 provide information to patients about prescribed medicines and: » how to take the medicine » potential side effects » what the medicine does 	 consider the efficacy of medicines in treating illnesses, including the relative merits of different non-pharmacological and pharmacological approaches
Ethics and professional behaviour	 what the medicine is for when it should be stopped 	 follow regulatory and legal requirements and limitations regarding prescribing
	 make prescribing decisions based on good safety data when the benefits outweigh the risks involved 	 follow organisational policies regarding pharmaceutical representative visits and drug marketing
	 demonstrate understanding of the ethical implications of pharmaceutical industry-funded research and marketing 	ŭ

Judgement and decision making	 use a systematic approach to select treatment options use medicines safely and effectively to get the best possible results choose suitable medicines only if medicines are considered necessary and will benefit patients prescribe medicines appropriately to patients' clinical needs, in doses that meet their individual requirements, for a sufficient length of time, with the lowest cost to them evaluate new medicines in relation to their possible efficacy and safety profile for individual patients recognise personal limitations and seek help in an appropriate way when required consider the following factors for all medicines: contraindications cost to patients, families, and the community funding and regulatory considerations generic versus brand medicin interactions risk-benefit analysis 	es
Leadership, management, and teamwork	 interact with medical, pharmacy, and nursing staff to ensure safe and effective medicine use work collaboratively with pharmacists participate in medication safety an morbidity and mortality meetings 	ıd
Health policy, systems, and advocacy	 choose medicines in relation to comparative efficacy, safety, and cost-effectiveness against medicines already on the market prescribe for individual patients, considering history, current medicines, allergies, and preferences, ensuring that healthcare resources are used wisely for the benefit of patients 	

EPA 10: Procedures

Theme	Procedures AT-EPA-10
Title	Plan, prepare for, perform, and provide aftercare for important practical procedures
Description	 This activity requires the ability to: select appropriate procedures in partnership with patients¹³ obtain informed consent set up the equipment, maintaining an aseptic field perform procedures manage unexpected events and complications during and after procedures provide aftercare for patients communicate aftercare protocols and instructions to patients and medical and nursing staff interpret the results and outcomes of procedures, including imaging and reports communicate the outcome of procedures and associated investigations to patients perform this activity across multiple relevant settings.
Behaviours	
<u>Professional</u> <u>practice</u> <u>framework</u> domain	Ready to perform without supervisionRequires some supervisionExpected behaviours of a trainee who can routinely perform this activity without needing supervisionPossible behaviours of a trainee who needs some supervision to perform this activityThe trainee will:The trainee may:
Medical expertise	 select procedures by assessing patient-specific factors, risks, benefits, and alternatives confidently and consistently perform a range of common procedures ensure team members are aware of all allergies / adverse reactions identified, and take precautions to avoid allergies / adverse reactions during procedures ensure patients have complied with pre-procedure preparation confirm the correct position / site / side / level on patients for planned procedures recognise and manage effectively complications arising during or after procedures recognise and correctly interpret normal and abnormal findings of diagnostic procedures

¹³ References to patients in the remainder of this document may include their families, whānau, and/or carers.

	•	accurately document procedures in the clinical notes, including informed consent, procedures requested and performed, reasons for procedures, medicines given, aseptic technique, and aftercare explain procedures clearly to patients, including reasons for procedures, potential alternatives, and possible risks, to facilitate	•	explain the process of procedures to patients without providing a broader context help patients choose procedures communicate with members of procedural teams so all team members understand who each member is discuss post-procedural care with patients
Communication	٠	informed choices counsel patients sensitively and effectively, and support them to make informed choices	•	complete relevant patients' documentation, and conduct appropriate clinical handovers
	٠	address patients' concerns relating to procedures, providing opportunities to ask questions		
	٠	tailor language according to individual patients' age and capacity to understand		
	٠	communicate effectively with team members and patients during and after procedures		
	٠	ensure team members are confident and competent in their assigned roles		
	•	obtain informed consent or other valid authority before undertaking any procedure	•	provide information in a manner so that patients are fully informed when consenting to any
	•	set up all necessary equipment, and consistently use universal precautions and aseptic technique	•	procedures demonstrate an inconsistent application of aseptic technique
Quality and safety	•	confirm patients' identification, verify the procedure, and, where appropriate, the correct position / site / side / level for	•	identify patients using approved patients' identifiers before any treatment or intervention is initiated
	•	ensure that information on patients' consent forms matches procedures to be performed	•	attempt to perform a procedure in an unsafe environment
	•	identify, document, and appropriately notify of any adverse events or equipment malfunction		
	٠	refer to and/or be familiar with relevant published procedural guidelines prior to undertaking procedures	•	participate in continued professional development help junior colleagues develop new skills
Teaching	٠	organise or participate in in-service training on new technology	•	seek feedback proactively on
and learning	٠	provide specific and constructive feedback and comments to junior colleagues		
	٠	initiate and conduct skills training for junior staff		

Cultural safety	 consider individual patients' cultural perception of health and illness, and adapt practice accordingly 	 respect religious, cultural, linguistic, and family values and differences
	 confidently perform common procedures 	 perform procedures when adequately supervised
Ethics and	 identify appropriate proxy decision makers when required 	 follow procedures to ensure safe practice
behaviour	 show respect for knowledge and expertise of colleagues 	
	 maximise patient autonomy in decision making 	
	 identify roles and optimal timing for diagnostic procedures 	 prioritise which patients receive procedures first (if there is
	 critically appraise information from assessment and evaluation of risks and benefits to prioritise patients on a waiting list 	 a waiting list) assess personal skill levels, and seek help with procedures when appropriate
	 make clinical judgements and decisions based on available 	 use tools and guidelines to support decision making
Judgement and decision making	 evidence select the most appropriate and cost-effective diagnostic procedures 	 recommend suboptimal procedures for patients
	 adapt procedures in response to assessments of risks to individual patients 	
	 select appropriate investigations on the samples obtained in diagnostic procedures 	
	 explain critical steps, anticipated events, and equipment requirements to teams on planned procedures 	 ensure all relevant team members are aware that a procedure is occurring
	 provide staff with clear aftercare instructions, and explain how to recognise possible complications 	 discuss patients' management plans for recovery with colleagues
and teamwork	 identify relevant management options with colleagues, according to their level of training and experience, to reduce error, prevent complications, and support efficient teamwork 	
	 coordinate efforts, encourage others, and accept responsibility for work done 	
Health policy	 discuss serious incidents at appropriate clinical review meetings 	 perform procedures in accordance with the organisational guidelines and policies
systems, and advocacy	 initiate local improvement strategies in response to serious incidents 	
	 use resources efficiently when performing procedures 	

EPA 11: Investigations

Theme	Investigations	AT-EPA-11
Title	Select, organise, and interpret investi	gations
Description	 This activity requires the ability to: select, plan, and use evidence-base prioritise patients¹⁴ receiving investige evaluate the anticipated value of the work in partnership with patients to f provide aftercare for patients (if need interpret the results and outcomes o communicate the outcome of investi 	d clinically appropriate investigations gations (if there is a waiting list) investigation acilitate choices that are right for them ded) f investigations gations to patients.
Behaviours		
<u>Professional</u> <u>practice</u> <u>framework</u> Domain	Ready to perform without supervision Expected behaviours of a trainee who can routinely perform this activity without needing supervision	Requires some supervision Possible behaviours of a trainee who needs some supervision to perform this activity
	The trainee will:	The trainee may:
Medical expertise	 choose evidence-based investigations and frame them as an adjunct to comprehensive clinical assessments assess patients' concerns, and determine the need for specific tests that are likely to result in overall benefit develop plans for investigations, identifying their roles and timing recognise and correctly interpret abnormal findings, considering patients' specific circumstances, and act accordingly relate investigation results to clinical findings, and understand the potential for false positives and false negatives 	 provide rationale for investigations understand the significance of abnormal test results, and act on these consider patient factors and comorbidities consider age-specific reference ranges
Communication	 explain to patients the potential benefits, risks, costs, burdens, and side effects of each option, including the option to have no investigations use clear and simple language, and check that patients understand the terms used and that they agree to proceed with proposed investigations 	 discuss the indications, risks, benefits, and complications of investigations with patients before ordering investigations explain the results of investigations to patients arrange investigations, providing accurate and informative referrals, and liaise with other services where appropriate

¹⁴ References to patients in the remainder of this document may include their families, whānau, and/or carers.

	 demonstrate sensitivity towards patients' and family members' anxiety in relation to investigations, and provide explanations appropriate to their level of knowledge, understanding, and desire for information identify patients' concerns and expectations, providing adequate explanations on the rationale for individual test ordering 	
	 confirm whether patients have understood the information they have been given and whether they need more information before deciding 	
	 use written or visual material or other aids that are accurate and up to date to support discussions with patients 	
	 explain findings or possible outcomes of investigations to patients 	
	 give information that patients may find distressing in a considerate way 	
Quality and safety	 identify adverse outcomes that may result from proposed investigations, focusing on patients' individual situations 	 consider safety aspects of investigations when planning them seek help with interpretation of test results for less common tests or indications or unexpected results
Teaching and learning	 use appropriate guidelines, evidence sources, and decision support tools participate in clinical audits to improve test ordering strategies for diagnoses and screening 	 undertake professional development to maintain currency with investigation guidelines
Research	 provide patients with relevant information if a proposed investigation is part of a research program obtain written consent from patients if the investigation is part of a research program 	 refer to evidence-based clinical guidelines consult current research on investigations
Cultural safety	 understand patients' views and preferences about any proposed investigation and the adverse outcomes they are most concerned about 	 consider patients' cultural and religious backgrounds, attitudes, and beliefs, and how these might influence the acceptability of proposed investigations
Ethics and professional behaviour	 remain within the scope of the authority given by patients (with the exception of emergencies) respect patients' decisions to refuse investigations, even if their 	 identify appropriate proxy decision makers when required choose not to investigate in situations where it is not appropriate for ethical reasons
Denavioui	decisions may not be appropriate or evidence based	 practise within current ethical and professional frameworks

	 discuss with patients how decisions will be made once the investigation has started and the patient is not able to participate in decision making advise patients there may be additional costs, which they may wish to clarify before proceeding explain the expected benefits as well as the potential burdens and risks of any proposed investigation before obtaining informed consent 	 practise within own limits, and seek help when needed involve patients in decision making regarding investigations, obtaining the appropriate informed consent, including financial consent, if necessary
	 demonstrate awareness of complex issues related to genetic information obtained from investigations, and subsequent disclosure of such information 	
Judgement and decision making	 evaluate the costs, benefits, and potential risks of each investigation in a clinical situation adjust the investigative path depending on test results received consider whether patients' conditions may get worse or better if no tests are selected 	 choose the most appropriate investigation for the clinical scenario in discussion with patients recognise personal limitations and seek help in an appropriate way when required
Leadership, management, and teamwork	 consider the role other members of the healthcare team might play, and what other sources of information and support are available ensure results are checked in a timely manner, taking responsibility for following up results 	 demonstrate understanding of what parts of an investigation are provided by different doctors or health professionals
Health policy, systems, and advocacy	 select and justify investigations regarding the pathological basis of disease, appropriateness, utility, safety, and cost effectiveness consider resource utilisation through peer review of testing behaviours 	

EPA 12: Clinic management

Theme	Clinic management	AT-EPA-12
Title	Manage an outpatient clinic	
Description	 This activity requires the ability to: manage medical procedures and tree manage clinic services oversee quality improvement activiti communicate with patients¹⁵ liaise with other health professionals demonstrate problem-solving skills use public resources responsibly. 	eatments es s and team members
Behaviours		
<u>Professional</u> <u>practice</u> <u>framework</u> domain	Ready to perform without supervision Expected behaviours of a trainee who can routinely perform this activity without needing supervision	Requires some supervision Possible behaviours of a trainee who needs some supervision to perform this activity
	The trainee will:	The trainee may:
Medical expertise	 identify and address current clinical concerns, as well as longer-term clinical objectives, as appropriate to patients' context evaluate environmental and lifestyle health risks, and advocate for healthy lifestyle choices create accurate and appropriately prioritised problem lists in the clinical notes or as part of ambulatory care reviews update documentation in a timeframe appropriate to the clinical situation of patients 	 demonstrate understanding of the importance of prevention, early detection, health maintenance, and chronic condition management
Communication	 help patients navigate the healthcare system to improve access to care by collaboration with other services, such as community health centres and consumer organisations link patients to specific community-based health programs and group education programs 	 wherever practical, meet patients' specific language and communication needs facilitate appropriate use of interpreter services and translated materials
Quality and safety	 practice health care that maximises patient safety adopt a systematic approach to the review and improvement of professional practice in the outpatient clinic setting 	 address issues if patients' safety may be compromised demonstrate awareness of a systematic approach to improving the quality and safety of health care

¹⁵ References to patients in the remainder of this document may include their families, whānau, and/or carers.

	 identify aspects of service provision that may be a risk to patients' safety 	 participate in organisational quality and safety activities, including clinical incident reviews
	ensure that patients are informed about fees and charges	
	 evaluate their own professional practice 	 recognise the limits of personal expertise, and involve other
Teaching	 demonstrate learning behaviour and skills in educating junior 	professionals as needed to contribute to patients' care
and learning	 colleagues contribute to the generation of knowledge 	 use information technology appropriately as a resource for modern medical practice
	 maintain professional continuing education standards 	
	 obtain informed consent or other valid authority before involving patients in research 	 allow patients to make informed and voluntary decisions to participate in research
Research	 inform patients about their rights, the purpose of the research, the procedures to be undergone, and the potential risks and benefits of participation before obtaining consent 	
	 incorporate appropriate LGBTQIA safe language 	+ • acknowledge the social, economic, cultural, and behavioural factors
	 apply knowledge of the cultural needs of the community serving, and how to shape service to those people 	influencing health, both at individual and population levels
Cultural safety	mitigate the influence of own	
	culture and beliefs on interactions with patients and decision making	
	 adapt practice to improve patient engagement and health outcomes 	;
	 identify and respect the boundaries that define professional and therapeutic relationships 	 demonstrate awareness of the responsibility to protect and advance the health and wellbeing of individuals and communities
Ethics and professional	• respect the roles and expertise of other health professionals	 maintain the confidentiality of documentation, and store clinical
behaviour	 comply with the legal requirement of preparing and managing documentation 	 notes appropriately ensure that the use of social media is consistent with ethical and legal
	 demonstrate awareness of financial and other conflicts of interest 	obligations
Judgement and	 integrate prevention, early detection, health maintenance, and chronic condition management, where relevant, into clinical practice 	 recognise the appropriate use of human resources, diagnostic interventions, therapeutic modalities, and health care facilities
	 work to achieve optimal and cost-effective patient care that allows maximum benefit from the available resources 	

	prepare for and conduct clinical encounters in a well-organised and time-efficient manner	
	work effectively as a member of multidisciplinary teams or other professional groups	
Leadership, management, and teamwork	ensure that all important discussions with colleagues, multidisciplinary team members, and patients are appropriately documented	
	review discharge summaries, notes, and other communications written by junior colleagues	
	support colleagues who raise concerns about patients' safety	
	demonstrate capacity to engage in the surveillance and monitoring of the health status of populations in the outpatient setting understand common population health screening and prevention approaches	
Health policy, systems, and advocacy	maintain good relationships with health agencies and services	
	apply the principles of efficient and equitable allocation of resources to meet individual, community, and national health needs	

Knowledge Guides

Knowledge guides (KGs) provide detailed guidance to trainees on the important topics and concepts trainees need to understand to become experts in their chosen specialty.

Trainees are not expected to be experts in all areas or have experience related to all items in these guides.



#	Title
1	Foundations of paediatric rheumatology
2	Intra-articular steroid injection
3	Arthritis
4	Systemic lupus erythematosus and related conditions
5	Juvenile dermatomyositis
6	<u>Scleroderma</u>
7	Vasculitis
8	Autoinflammatory conditions
9	Non-inflammatory musculoskeletal and rheumatic disorders



Knowledge guide 1 – Foundations of paediatric rheumatology

Rheumatology, Paediatrics & Child Health Division

EPIDEMIOLOGY, PATHOPHYSIOLOGY, AND CLINICAL SCIENCES

Advanced Trainees will have in-depth knowledge of the topics listed under each clinical sciences heading.

For the statistical and epidemiological concepts listed, trainees should be able to describe the underlying rationale, the indications for using one test or method over another, and the calculations required to generate descriptive statistics.

Anatomy

- Normal growth and development, including puberty
 - Structure and function of:
 - » blood vessels
 - » bone
 - » connective tissue
 - » joints
 - » muscle
 - » nerves
 - » tendons

Associated therapies

- Complementary or non-evidence-based medicine
- Dietician support
- Occupational therapy:
 - » adaptive equipment and assistive devices
 - » home, school, and workplace assessment
- Pain management strategies
- Patient education and self-management
- Physiotherapy:
 - » exercise therapy:
 - conditioning
 - o hydrotherapy
 - o joint protection and energy conservation techniques
 - o range of motion
 - rest and splinting
 - o strengthening
 - o stretching
 - Psychology

Immunology

- Basic structure and function of:
- » cellular and molecular components of the immune system
 » central and peripheral lymphoid organs

Pathophysiology

- Classification of rheumatic diseases of childhood
- Pathophysiology of pain
- Relevant adult musculoskeletal and connective tissue conditions and problems
- Rheumatological emergencies

Pharmacology

- Combination drug therapy
- Clinical use of medications, including:
 - » analgesics for pain
 - » antibiotic regimens for the prophylaxis and treatment of infectious complications in immune-suppressed children
 - » anticoagulants in the prophylaxis and management of thrombotic diseases
 - » bisphosphonates for chronic non-infectious osteomyelitis, and primary or iatrogenic osteoporosis
 - » corticosteroids, including the role of calcium and vitamin D supplementation:
 - o intra-articular

- o intramuscular
- o intravenous
- o oral
- Cytotoxic drugs as used for organ- or life-threatening disease, such as cyclophosphamide
- Disease-modifying antirheumatic drugs (DMARDs):
 - » biologic DMARDs (bDMARDs), including, but not limited to,
 - inhibitors of:
 - o B cells
 - o co-stimulatory effects
 - o interferon
 - \circ interleukin-1 (IL-1)
 - interleukin-6 (IL-6)
 - o interleukin-17 (IL-17)
 - \circ tumour-necrosis factor α
 - » conventional DMARDs (cDMARDs), including, but not limited to:
 - \circ azathioprine
 - cyclosporine
 - o leflunomide
 - o methotrexate
 - o mycophenolate mofetil
 - small-molecule DMARDs (tsDMARDs), including, but not limited to:
 C5a inhibitors
 - Janus kinase inhibitors
 - Interactions with other medications
- Intravenous and oral therapies for severe Raynaud phenomenon and pulmonary arterial hypertension
- Monitoring and management of drug toxicity
- Non-immune-suppressing immunomodulatory drugs, such as:
 - » colchicine
 - » hydroxychloroquine
- Non-steroidal anti-inflammatory drugs (NSAIDs)
- Pharmacology of agents used in rheumatic disease
- Prescribing for children with kidney and hepatic insufficiency
- Risks of pregnancy with medications
- Sedation and pain management techniques for children and young people
- Use of medications under special circumstances, such as off-label

Physiology

- As applicable to the understanding of the mechanisms and the treatment of musculoskeletal conditions, such as:
 - » biomechanics
 - » cellular and molecular biology
 - » genetics
 - » growth development and puberty
 - immune mechanisms:
 - o autoimmunity
 - o autoinflammation
 - $\circ \quad \text{immune complexes} \quad$
 - infectious agents

INVESTIGATIONS, PROCEDURES, AND CLINICAL ASSESSMENT TOOLS

- **Clinical assessment tools**
- Measures of disease activity, functional status, cumulative damage, and quality of life appropriate to the child's condition. These include:
 36-Item Short Form Survey (SF-36)
 - American College of Rheumatology Pediatric 30 (ACR-Pedi 30)
 - » BAS Disease Activity Index (BASDAI)
 - » BAS Metrology Index (BASMI) for juvenile ankylosing spondylitis
 - » Bath Ankylosing Spondylitis Functional Index (BASFI)
 - » Child Health Questionnaire (CHQ-50)

procedure, including relevant anatomy and physiology. They will be able to interpret the reported results of each investigation or procedure.

Advanced Trainees will know how to explain the investigation or procedure to patients¹⁶, families, and carers, and be able to explain procedural risk and obtain informed consent where applicable.

- » Childhood Health Assessment Questionnaire (CHAQ)
- » Systemic Lupus Erythematosus Disease Activity Index (SLEDAI)
- » Systemic Lupus International Collaborating Clinics (SLICC) Damage Index
- Screening tools, including, but not limited to:
 - » paediatric gait, arms, legs and spine (pGALS)
 - patient-reported experience measures (PREMS)

Diagnostic imaging techniques

- Angiography:
 - » conventional
 - » imaging-based
- Bone densitometry dual-energy x-ray absorptiometry (DEXA)
- CT
- MRI
- PET
- Plain x-ray
- Radionucleotide scans, such as bone scan
- Ultrasound

Investigations (required)

- Capillaroscopy
- Interpretation of joint fluid results:
 - » cell counts
 - » culture
- Interpretation of relevant laboratory and imaging results
- Tissue biopsy (awareness of when it is required)

Investigations (optional)

Clinician-performed musculoskeletal ultrasound

Laboratory investigations

- Autoantibodies:
 - > antibodies to form blood elements, such as:
 - antiplatelet antibodies
 - Coombs testing:
 - direct
 - indirect
 - antineutrophil cytoplasmic antibodies (ANCA), including specificities for neutrophil granule constituents, such as myeloperoxidase (MPO) and proteinase-3 (PR-3)
 - antinuclear antibody (ANA)
 - antiphospholipid antibodies, such as:
 - o anti-beta-2-glycoprotein I antibodies
 - o anti-cardiolipin
 - o lupus anticoagulant
 - anti-double-stranded DNA (dsDNA)
 - » anti-histone

>>

- extractable nuclear antigen (ENA), including:
- o **Jo-1**
 - o La
 - o RnP
 - o Ro
 - Scl-70
 - o Sm
- » rheumatoid factor and anticyclic citrullinated peptide (CCP)
- Clinical chemistry:
 - » creatinine kinase and lactate dehydrogenase
 - » liver function tests

¹⁶ References to patients in the remainder of this document may include their families, whānau, and/or carers.

- » serum electrolytes
- » thyroid function tests
 - urea and creatinine
- Genetic testing:
 - » monogenic auto-inflammatory diseases
 - » storage disorders and other inborn errors of metabolism
 - » whole exome and parental studies, and applicability to rheumatic diseases
- Haematology:
 - » coagulation studies
 - » full blood count, including white-cell differential
- Inflammatory markers:
 - » C-reactive protein
 - » erythrocyte sedimentation rate
 - » ferritin
 - » serum amyloid A
- Other immunology:
 - » complement studies C1q, C3, C4, CH50, and components of the complement cascade
 - » flow cytometry studies for analysis of lymphocyte subsets and function
 - » human leukocyte antigens (HLA) typing
 - immunofixation electrophoresis, serum immunoglobulin levels, and serum protein electrophoresis
- Serologic and polymerase chain reaction (PCR) tests for common infections

Neuroelectrophysiological tests

- Electromyography
- Nerve conduction

Procedures

- Arthrocentesis of large and small joints
- Intra-articular steroid injection on small and large joints

Synovial fluid analysis

- Cell count and differentia
- Culture and sensitivity
- Assistance for families and patients, such as:
 - » cultural
 - » emotional
 - » psychological
- Disability determination, such as:
 - » career advice and planning
 - » carer allowance and payments
 - » disability pension adolescents
 - » educational supports
- Factors affecting adherence to treatment regimens:
- » access to advice and support systems
 - » distance from specialist help
 - » educational
 - » emotional and psychosocial
 - » socioeconomic

Advanced Trainees will identify important specialty-specific issues and the impact of these on diagnosis, management and outcomes.

ISSUES

IMPORTANT SPECIFIC

- Pharmaceutical Benefits Scheme requirements for commencing certain medications, such as bDMARDs
- Transitional care of adolescents, and transfer to adult services:
 - » adolescent-specific issues:
 - body image
 - o emotional development and independence
 - o risk-taking behaviours
 - social media
 - » local resources for transition of care to adult services
 - » medication-specific issues
 - » specific counselling regarding contraception and pregnancy
 - » transfer of adolescents taking off-label or compassionate-access medication
 - » transition guidelines for paediatric and adult rheumatology services



Knowledge guide 2 – Intra-articular steroid injection

Rheumatology, Paediatrics & Child Health Division

CLINICAL SCIENCES Advanced Trainees will describe the principles of the foundational sciences.	 Anatomy of principal joints and surface markers of injection sites, such as: lower limb joints, including: ankles knees metatarsophalangeal proximal and distal interphalangeal subtalar upper limb joints, including: elbow metacarpophalangeal proximal and distal interphalangeal shoulder wrist Principles of local steroid use, such as: different steroid preparations effectiveness side effects
ELIGIBILITY CONSIDERATIONS Advanced Trainees will assess the patient's ¹⁷ current condition and plan the next steps.	 Appropriateness of repeated injections Consideration of whether image-guided injection is indicated Pre-procedure review of examination and imaging findings Reasons for intra-articular administration of steroids as opposed to alternative routes, such as oral or intravenous administration, based on individual patients' clinical scenarios
LESS COMMON OR MORE COMPLEX PATIENT CONSIDERATIONS Advanced Trainees will understand the resources that should be used to help manage patients.	 Anatomy of principal joints and surface markers of complex injection sites, such as: axial joints, such as: hip joints sacroiliac spinal temporomandibular bursae injections mid-foot joints tendon sheaths
UNDERTAKING THERAPY Advanced Trainees will monitor the progress of patients during the therapy.	 Age-appropriate analgesia / sedation: general anaesthesia local anaesthesia sedation, such as nitrous oxide Aseptic technique Aspiration of synovial fluid Choice of steroid preparation and steroid dosage for different joints Correct needle placement and use of imaging, such as x-ray or ultrasound, to confirm needle placement, as indicated Identification of surface markers of injection sites

¹⁷ References to patients in the remainder of this document may include their families, whānau, and/or carers.

	 Patient and parental consent: expected benefits of the procedure risk of side effects, such as: failure of procedure infection subcutaneous atrophy
POST-THERAPY	 Infection risk and appropriate patient / parental education / safety-netting Return to exercise
Advanced Trainees will know how to monitor and manage	Subcutaneous atrophy management

IMPORTANT SPECIFIC ISSUES

patients post-therapy.

•

- Multidisciplinary team involvement: » physiotherapy and occupational therapy for splinting / casting » radiology for image guided injections

Advanced Trainees will identify important specialty-specific issues and the impact of these on diagnosis and management and integrate these into care.



Knowledge guide 3 – Arthritis

Rheumatology, Paediatrics & Child Health Division

KEY PRESENTATIONS AND CONDITIONS

Advanced Trainees will have a comprehensive depth of knowledge of these presentations conditions.

Presentations

- Acutely unwell
- Decreased joint range of motion
- Fever
- Functional impairment
- Joint pain
- Joint swelling
- Limp
- Rash
- Stiffness, such as morning stiffness or with inactivity

Conditions

- Arthritis in the context of infection:
 - » mycobacterium-related
 - » post-infectious, including transient synovitis
 - » post-streptococcal, including acute rheumatic fever
 » septic arthritis, acute – with
 - or without osteomyelitis
- Juvenile idiopathic arthritis (JIA):
 - » enthesitis-related arthritis
 - oligoarthritis, including extended or persistent disease
 - polyarthritis:
 - o rheumatoid factor negative
 - o rheumatoid factor positive
 - psoriatic
 - systemic-onset
 - » unclassified
- JIA-associated medical emergencies:
 - macrophage activation syndrome (MAS) /
 - secondary hemophagocytic lymphohistiocytosis (HLH)
 - » systemic onset JIA pericarditis / cardiac tamponade
- JIA-associated uveitis

For each presentation and condition, Advanced Trainees will **know how to:**

Synthesise

- » recognise the clinical presentation
- » identify relevant epidemiology, prevalence, pathophysiology, and clinical science
- » take a comprehensive clinical history
- » conduct an appropriate examination
- » establish a differential diagnosis
- » plan and arrange appropriate investigations
- » consider the impact of illness and disease on patients¹⁸ and their quality of life when developing a management plan

Manage

- » provide evidence-based management
- » prescribe therapies tailored to patients' needs and conditions
- » recognise potential complications of disease and its management, and initiate preventative strategies
- » involve multidisciplinary teams

Consider other factors

» identify individual and social factors and the impact of these on diagnosis and management

¹⁸ References to patients in the remainder of this document may include their families, whānau, and/or carers.

	 Non-JIA causes of inflammatory arthritis: associated with other rheumatic conditions chromosomal syndrome-associated, such as: DiGeorge / 22Q syndrome DiGeorge / 22Q syndrome Down syndrome Turner syndrome Turner syndrome immune deficiency mediated inflammatory bowel disease-associated
LESS COMMON OR MORE COMPLEX PRESENTATIONS AND CONDITIONS Advanced Trainees will understand these presentations and conditions. Advanced Trainees will understand the resources that should be used to help manage patients with these presentations and conditions.	Conditions Adult-onset inflammatory arthritis: adult-onset Still disease axial spondyloarthritis: non-radiographic radiographic crystal-induced, such as gout osteoarthritis psoriatic arthritis reactive arthritis: reactive arthritis: seronegative seropositive Conditions that mimic JIA

EPIDEMIOLOGY, PATHOPHYSIOLOGY, AND CLINICAL SCIENCES

Advanced Trainees will have a comprehensive depth of knowledge of the principles of the foundational sciences.

Epidemiology

- Annual incidence and prevalence
- Age of onset for different JIA subtypes
- Genetic factors associated with JIA
- Geographic variability in JIA subtypes
- Male to female ratio for different JIA subtypes

Pathophysiology

• Principles of autoinflammation and autoimmunity

Treatments

- Considerations for medications used in the treatment of JIA:
 - » drug interactions
 - » duration and discontinuation
 - » mode of action
 - » route of administration
 - » safety monitoring
 - » side effect profiles

Corticosteroids:

- » intra-articular
- » intravenous
- » oral

•	Disease-modifying	antirheumatic	drugs	(DMARDs)
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- » biologic DMARDs (bDMARDs), such as inhibitors of:
 - o B-cells
 - o co-stimulatory inhibition
 - o interleukin-1
 - o interleukin-6
 - o interleukin-12/23
 - o interleukin-17
 - \circ tumour-necrosis factor α
- conventional DMARDs (cDMARDs), such as:
 - o hydroxychloroquine
 - o leflunomide
 - methotrexate
 - o sulfasalazine
- » small molecule targeted synthetic DMARDs (tsDMARDs):
 - o Janus kinase (JAK) inhibitors
- Non-steroidal anti-inflammatory drugs (NSAIDs)
- Treatments for macrophage activation syndrome

INVESTIGATIONS, PROCEDURES, AND CLINICAL ASSESSMENT TOOLS

Advanced Trainees will know the scientific foundation of each investigation and procedure, including relevant anatomy and physiology. They will be able to interpret the reported results of each investigation or procedure.

Advanced Trainees will know how to explain the investigation or procedure to patients, families, and carers, and be able to explain procedural risk and obtain informed consent where applicable. JIA » damage scores

Clinical assessment tools

- » disease activity scores
- » outcome measures

Investigations

»

- Baseline investigations looking for inflammation
- Infection screening as relevant, such as antistreptolysin O titre
- Monitoring blood tests for patients on treatment
- Pre-immunosuppression screening, such as latent tuberculosis screening
- Role of different imaging modalities:
 - » in diagnosis of arthritis, and consideration of differentials
 - in surveillance of disease activity and assessing damage over time
- Specific immune testing in inflammatory arthritis, such as:
 - » anticyclic citrinullated peptide
 - » antinuclear antibody
- » human leukocyte antigen (HLA) B27
 - » rheumatoid factor
- Testing for macrophage activation syndrome
- Work up for differentials of chronic inflammatory uveitis

Physical examination

- Comprehensive physical examination for a child with suspected inflammatory arthritis of the musculoskeletal system and other relevant systems, such as:
 - » abdominal
 - » cardiac
 - » ear, nose, and throat
 - » respiratory
 - » skin
- Screening examinations:
 - » paediatric gait, arms, legs, and spine (pGALS)
 - paediatric regional examination of the musculoskeletal system (pREMS)

Procedures

Intra-articular steroid injections

IMPORTANT SPECIFIC ISSUES

Specific considerations

- JIA
 - » cardiovascular outcomes
 - extra-articular manifestitations

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Advanced Trainees will identify important specialty-specific issues and the impact of these on diagnosis and management and integrate these into care.

- » mortality rates in systemic-onset
- » multidisciplinary teams and their importance in the management of JIA, including:
 - o occupational therapy
 - physiotherapy
 - specialist nurse
- Function-related outcomes
- Management of chronic immunosuppression:
 - » bone health
 - » vaccinations
- Potential for secondary pain sensitisation in patients with inflammatory arthritis
- Screening for and management of chronic uveitis



Knowledge guide 4 – Systemic lupus erythematosus and related conditions

Rheumatology, Paediatrics & Child Health Division

KEY PRESENTATIONS AND CONDITIONS

Advanced Trainees will have a comprehensive depth of knowledge of these presentations and conditions.

Presentations

- Arthralgia
- Chest pain
- Fatigue
- Fever
- Haemolysis
- Lymphadenopathy
- Oedema
- Pleural / Pericardial effusion
- Proteinuria
- Rash
- Raynaud phenomenon
- Shortness of breath
- Ulcers

Conditions

- Antiphospholipid syndrome
- Cutaneous lupus
- Sjögren syndrome
- Systemic lupus erythematosus (SLE):
 » lupus nephritis types I–V
 - mixed connective tissue disease
 - mixed connective tissue disease

LESS COMMON OR MORE COMPLEX PRESENTATIONS AND CONDITIONS

Advanced Trainees will understand these presentations and conditions.

Advanced Trainees will understand the resources that should be used to help manage patients with these presentations and conditions.

Presentations

- Complete heart block fetus / neonate
- Neurological or neuropsychiatric symptoms
- Secondary hemophagocytic lymphohistiocytosis (HLH)
- Sicca symptoms

Conditions

- Drug-related lupus
- Kikuchi–Fujimoto disease
- Neonatal lupus
- Undifferentiated connective tissue disease

For each presentation and condition, Advanced Trainees will **know how to:**

Synthesise

- » recognise the clinical presentation
- » identify relevant epidemiology, prevalence, pathophysiology, and clinical science
- » take a comprehensive clinical history
- » conduct an appropriate examination
- » establish a differential diagnosis
- » plan and arrange appropriate investigations
- » consider the impact of illness and disease on patients¹⁹ and their quality of life when developing a management plan

Manage

- » provide evidence-based management
- » prescribe therapies tailored to patients' needs and conditions
- » recognise potential complications of disease and its management, and initiate preventative strategies
- » involve multidisciplinary teams

Consider other factors

» identify individual and social factors and the impact of these on diagnosis and management

¹⁹ References to patients in the remainder of this document may include their families, whānau, and/or carers.

EPIDEMIOLOGY, PATHOPHYSIOLOGY, AND CLINICAL SCIENCES

Advanced Trainees will have a comprehensive depth of knowledge of the principles of the foundational sciences.

Epidemiology

- Difference between ethnic groups, with particular reference to Aboriginal and Torres Strait Islander peoples and Māori
- Incidence and prevalence
- Male to female ratio, highlighting the female predominance in autoimmune disease

Pathophysiology

 Potential genetic and environmental triggers in the pathophysiology of SLE

Pharmacological treatment strategies in SLE

- Drug interactions, induction versus maintenance therapy, safety monitoring, and side effect profiles for medications:
 - » anticoagulant drugs
 - » antimalarial hydroxychloroquine
 - » corticosteroids

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- » cytotoxic drugs, such as cyclophosphamide
- » disease-modifying antirheumatic drugs (DMARDs), including:
 - biological DMARDs (bDMARDs):
 - B cell targeting therapies
 - interferon-targeting
 - conventional DMARDs (cDMARDs)
- » non-steroidal anti-inflammatory drugs
- » other treatment strategies:
 - o antihypertensive agents
 - o anti-infective prophylaxis
 - o lipid-lowering agents
- » treatment strategies for Raynaud syndrome:
 - o non-pharmacological measures
 - o pharmacological measures

Clinical assessment and disease scoring tools

- Diagnostic and classification criteria
- Disease activity measures
- Disease damage measures

Investigations

- Autoantibodies:
 - » antinuclear antibodies (ANA)
 - antiphospholipid antibodies:
 - o anticardiolipin
 - o anti-B2-glycoprotien I
 - lupus anticoagulant
 - antithyroid antibodies
 - » anti-C1q antibodies
 - » anti-double-stranded DNA (dsDNA)
 - » anti-histone antibodies
 - » extractable nuclear antibodies, such as:
 - o La
 - o RNP
 - o Ro

>>

- o Sm
- rheumatoid factor (RhF)
- Biochemical analysis:
- » complement studies:
 - o C1q
 - C3
 - C4
 - CH50
 - CH100
- » creatinine

curriculum@racp.edu.au

ASSESSMENT TOOLS Advanced Trainees will know the scientific foundation of each investigation and procedure, including relevant anatomy and physiology. They will be

INVESTIGATIONS,

PROCEDURES,

AND CLINICAL

physiology. They will be able to interpret the reported results of each investigation or procedure.

Advanced Trainees will know how to explain the investigation or procedure to patients, families, and carers, and be able to explain procedural risk and obtain informed consent where applicable.

- » electrolytes
- » ferritin

»

- immunoglobulins:
 - o IgA
 - o IgG
 - o IgM
- » liver function tests
- muscle enzymes:
 - o CK
 - o LDH
- thyroid function tests
- » urea
- Haematological markers:
 - » clotting studies, including lupus anti-coagulant
 - » complete blood count
 - » Coombs test
- Imaging:

»

- angiography:
 - o conventional
 - o CT
 - o MRI
- » CT
- » echocardiography
- » MRI
- » PET
- » radionucleotide studies
- » ultrasound
- » x-ray
- Inflammatory markers:
 - » C-reactive protein (CRP)
 - » erythrocyte sedimentation rate (ESR)
 - Kidney histopathology result interpretation
- Lung function testing
- Macrophage activation syndrome testing
- Pre-immunosuppression screening
- Urinalysis:
 - » B2-microglobulin
 - » protein and albumin creatinine ratio
 - » spun urine microscopy
 - » urine ratios

Procedures

- Consideration of biopsy of specific organs, such as:
 - » kidney
 - » lymph node
 - » skin

Outcomes and long-term monitoring in SLE

- Cardiovascular outcomes in SLE
- Differences between adult- and childhood-onset SLE
- Mortality rates
- Potential triggers of flare
- Other organ-specific outcomes:
 - » central nervous system (CNS)
 - » eyes
 - » kidney
 - » lung
 - » skin
- Role of dsDNA, complement, and inflammatory markers in monitoring disease activity

IMPORTANT SPECIFIC ISSUES

Advanced Trainees will identify important specialty-specific issues and the impact of these on diagnosis and management and integrate these into care.



Knowledge guide 5 – Juvenile dermatomyositis

Rheumatology, Paediatrics & Child Health Division

KEY PRESENTATIONS AND CONDITIONS

Advanced Trainees will have a comprehensive depth of knowledge of these presentations and conditions.

LESS COMMON OR MORE COMPLEX PRESENTATIONS AND CONDITIONS

Advanced Trainees will understand these presentations and conditions.

Advanced Trainees will understand the resources that should be used to help manage patients with these presentations and conditions.

Presentations

- Calcinosis
- Cutaneous manifestations of juvenile dermatomyositis (JDM), such as Gottron papules
- Generalised weakness

Conditions

• JDM

Presentations

- Dysphagia / Dysphonia
- Dyspnoea, decreased exercise tolerance, and other respiratory complaints (in the setting of weakness)
- Gastrointestinal symptoms, including haemorrhage
- Lipodystrophy

Conditions

- Antisynthetase syndrome
- Amyopathic dermatomyositis
- Calcinosis cutis
- Immune-mediated necrotising myopathy
- Interstitial lung disease (in the setting of JDM)
- Mixed connective tissue disease (MCTD) and undifferentiated connective tissue disease (UCTD)

For each presentation and condition, Advanced Trainees will **know how to:**

Synthesise

- » recognise the clinical presentation
- » identify relevant epidemiology, prevalence, pathophysiology, and clinical science
- » take a comprehensive clinical history
- » conduct an appropriate examination
- » establish a differential diagnosis
- » plan and arrange appropriate investigations
- » consider the impact of illness and disease on patients²⁰ and their quality of life when developing a management plan

Manage

- » provide evidence-based management
- » prescribe therapies tailored to patients' needs and conditions
- » recognise potential complications of disease and its management, and initiate preventative strategies
- » involve multidisciplinary teams

Consider other factors

» identify individual and social factors and the impact of these on diagnosis and management

²⁰ References to patients in the remainder of this document may include their families, whānau, and/or carers.
EPIDEMIOLOGY, PATHOPHYSIOLOGY, AND CLINICAL SCIENCES

Advanced Trainees will have a comprehensive depth of knowledge of the principles of the foundational sciences.

Epidemiology

- Annual incidence and prevalence
- Male to female ratio

Pathophysiology

- JDM pathogenesis:
 - » environmental factors
 - » genetic factors
 - » relevant immunological mechanisms
- Pathophysiology of juvenile dermatomyositis, as it effects each organ system

Treatment strategies

- Drug interactions, mechanism of action, safety monitoring, and side effect profiles for medications used to treat inflammatory myositis, including:
 - » corticosteroids:
 - o intravenous
 - o oral
 - cytotoxic drugs
 - » disease-modifying antirheumatic drugs (DMARDs):
 - biological DMARDs
 - o conventional DMARDs
 - targeted synthetic DMARDs
 - » non-steroidal anti-inflammatory drugs
 - » treatment considerations:
 - antihypertensive agents
 - anti-infective prophylaxis
 - o bone health
 - o intravenous immunoglobulin
- Induction and remission treatment, and general organ-specific
- escalation pathways
- Management of calcinosis
- Non-pharmacological measures:
 - » sun avoidance
 - allied health input, including, but not limited to:
 - occupational therapy
 - physiotherapy
 - psychology
 - speech therapy

INVESTIGATIONS, PROCEDURES, AND CLINICAL ASSESSMENT TOOLS

Advanced Trainees will know the scientific foundation of each investigation and procedure, including relevant anatomy and physiology. They will be able to interpret the reported results of each investigation or procedure.

Advanced Trainees will know how to explain the investigation or procedure to patients, families, and

Clinical assessment and disease scoring tools

- Assessment of nailfold capillaries
- Diagnostic and classification criteria:
 - » differences between adult and juvenile dermatomyositis
- Disease activity measures, including:
 - myositis assessment scores, such as Childhood Myositis Assessment Scale (CMAS)
 skin assessment scores
- Use of myositis-specific antibodies to guide expected phenotype, prognosis, and treatment or monitoring strategies

Investigations

- Baseline investigations to detect inflammation, particularly muscle enzymes, such as:
 - » alanine transaminase (ALT)
 - » aspartate aminotransferase (AST)
 - » creatine kinase (CK)
 - » lactate dehydrogenase (LDH)

carers, and be able to explain procedural risk and obtain informed consent where applicable

- Complication screening, such as:
 - » barium swallow
 - » CT chest
 - » echocardiography
 - » lung function testing
- Imaging modalities, especially MRI of proximal muscles of the lower limbs
- · Increasingly historical role of electromyography in JDM
- Indications for skin or muscle biopsies
- Utility and pitfalls of autoantibodies, including:
 - » antinuclear antibodies (ANA)
 - » extractable nuclear antigen (ENA)
 - » myositis-specific and associated antibodies (MSA) and methylmalonic acid (MAA)

Procedures

- Muscle biopsy, including utility and risks
- Semi-permanent intravenous catheters
- Skin biopsy

IMPORTANT SPECIFIC ISSUES

- Outcomes and long-term monitoring
 Cardiovascular outcomes, including stroke risk and coronary artery disease
- Mortality rates in juvenile and adult-onset dermatomyositis
- Risk of malignancy in juvenile and adult-onset dermatomyositis
- Other organ-specific outcomes:
 - » central nervous system (CNS)
 - » eyes
 - » gastrointestinal tract (GIT)
 - » lung» skin

Advanced Trainees will identify important specialty-specific issues and the impact of

these on diagnosis

and management and

integrate these into care.



Knowledge guide 6 – Scleroderma

Rheumatology, Paediatrics & Child Health Division

KEY PRESENTATIONS AND CONDITIONS

Advanced Trainees will have a comprehensive depth of knowledge of these presentations and conditions.

Presentations

- Calcinosis
- Contracture
- **Digital ulceration**
- Dysphagia
- Muscle weakness
- Raynaud phenomenon •
- Sclerodactyly •
- Shortness of breath / Declining • exercise tolerance
- Sicca
- Skin thickening •

Conditions

- Diffuse systemic sclerosis (dSSc)
- Limited systemic sclerosis (ISSc)
- Mixed connective tissue disease • (MCTD) / Overlap syndromes
- Linear scleroderma
- Localised scleroderma / Morphoea
- Morphoea en coup de Sabre

LESS COMMON OR **MORE COMPLEX** PRESENTATIONS AND CONDITIONS

Advanced Trainees will understand these presentations and conditions.

Advanced Trainees will understand the resources that should be used to help manage patients with these presentations and conditions.

Presentations

As above

Conditions

- Chemical- / Drug-related scleroderma
- Graft-versus-host disease (GVHD) with sclerosis

For each presentation and condition, Advanced Trainees will know how to:

Synthesise

- » recognise the clinical presentation
- » identify relevant epidemiology, prevalence, pathophysiology, and clinical science
- » take a comprehensive clinical history
- » conduct an appropriate examination
- » establish a differential diagnosis
- plan and arrange appropriate investigations
- consider the impact of illness and disease on patients²¹ and their quality of life when developing a management plan

Manage

- » provide evidence-based management
- » prescribe therapies tailored to patients' needs and conditions
- » recognise potential complications of disease and its management, and initiate preventative strategies
- » involve multidisciplinary teams

Consider other factors

» identify individual and social factors and the impact of these on diagnosis and management

EPIDEMIOLOGY, PATHOPHYSIOLOGY, AND CLINICAL SCIENCES

Advanced Trainees will have a comprehensive

Epidemiology

- Age of onset
- Genetic factors
- Incidence and prevalence
- Male to female ratio

Pathophysiology

²¹ References to patients in the remainder of this document may include their families, whānau, and/or carers.

depth of knowledge of the principles of the foundational sciences.	 Contemporary understanding of pathophysiology of disease as it effects different organ systems Diagnostic criteria: American College of Rheumatology (ACR) European Alliance of Associations for Rheumatology Pharmacological treatment strategies Drug interactions, safety monitoring, and side effect profiles for medications used to treat scleroderma, such as:
INVESTIGATIONS, PROCEDURES, AND CLINICAL ASSESSMENT TOOLS	 Clinical assessment and disease scoring tools Diagnostic criteria and disease activity measurement Investigations Assessment of the second second
Advanced Trainees will know the scientific foundation of each investigation and procedure, including relevant anatomy and physiology. They will be able to interpret the reported results of each investigation or procedure. Advanced Trainees will know how to explain the investigation or procedure to patients, families, and	 cardiac involvement: echocardiogram electrocardiogram (ECG) gastrointestinal involvement, such as barium swallow respiratory involvement: high-resolution CT lung function testing Baseline blood and urine investigations assessing for organ dysfunction, such as: kidney function liver function muscle enzymes Baseline investigations looking for inflammation Monitoring blood tests for patients on treatment
carers, and be able to explain procedural risk and obtain informed consent where applicable.	 Pre-immunosuppression screening, such as latent tuberculosis screening Role of different imaging modalities in:

- »
- assessing for underlying structural damage diagnosis of scleroderma and consideration of differentials »
- surveillance of disease activity, and assessing damage over time >>
- Skin biopsy •
- Specific immune testing in scleroderma, such as:
 - antinuclear antibody (ANA) »
 - extractable nuclear antibodies, including: >>
 - o anticentromere

- o La
- o RNP
- o Ro
- o Scl-70
- o Sm
- scleroderma-associated antibodies, including:
 - o myositis specific antibodies
 - o RNA-polymerase III

IMPORTANT SPECIFIC ISSUES

Advanced Trainees will identify important specialty-specific issues and the impact of these on diagnosis and management and integrate these into care.

Outcomes and long-term monitoring

- Cardiovascular outcomes, including stroke risk and coronary artery disease
- Guidelines for monitoring for disease progression, such as for interstitial lung disease (ILD)
- Mortality rates in juvenile scleroderma
 - Other organ-specific outcomes:
 - » central nervous system (CNS)
 - » eyes
 - » gastrointestinal tract (GIT)
 - » lung
 - » skin



Knowledge guide 7 – Vasculitis

Rheumatology, Paediatrics & Child Health Division

KEY PRESENTATIONS AND CONDITIONS

Advanced Trainees will have a comprehensive depth of knowledge of these presentations and conditions.

Presentations

- Abdominal pain
- Arthritis
- Eye inflammation
- Fever
- Hypertension
- Ischaemia
- Myalgia / Myositis
- Neuropathy
- Proteinuria and/or haematuria
- Pulmonary haemorrhage
- Rash
- Recurrent sinus infection
- Signs of shock
- Stroke

Conditions

- Large vessel vasculitis:
- » Takayasu arteritis
- Medium vessel vasculitis:
 - » Kawasaki disease
 - paediatric inflammatory multisystem syndrome temporally related to SARS-CoV-2 (PIMS-TS)
 - » polyarteritis nodosa (PAN):
 - classic PAN
 - o cutaneous PAN
 - o DADA2 deficiency
- Small vessel vasculitis:
 - antineutrophil cytoplasmic antibodies (ANCA) associated:
 - eosinophilic granulomatosis with polyangiitis
 - granulomatosis with polyangiitis
 - o microscopic polyangiitis
 - non-ANCA associated:
 - hypocomplementaemic urticarial vasculitis
 - immunoglobulin A (IgA) vasculitis
 - o isolated cutaneous vasculitis
- Variable vessel vasculitis:
 - primary angiitis of the central nervous system (PaCNS)

For each presentation and condition, Advanced Trainees will **know how to:**

Synthesise

- » recognise the clinical presentation
- » identify relevant epidemiology, prevalence, pathophysiology, and clinical science
- » take a comprehensive clinical history
- » conduct an appropriate examination
- » establish a differential diagnosis
- » plan and arrange appropriate investigations
- » consider the impact of illness and disease on patients²² and their quality of life when developing a management plan

Manage

- » provide evidence-based management
- » prescribe therapies tailored to patients' needs and conditions
- » recognise potential complications of disease and its management, and initiate preventative strategies
- » involve multidisciplinary teams

Consider other factors

» identify individual and social factors and the impact of these on diagnosis and management

²² References to patients in the remainder of this document may include their families, whānau, and/or carers.

LESS COMMON OR MORE COMPLEX PRESENTATIONS AND CONDITIONS

Advanced Trainees will understand these presentations and conditions.

Advanced Trainees will understand the resources that should be used to help manage patients with these presentations and conditions.

» oral or genital ulceration »

Presentations

• As above, plus:

vestibular dysfunction »

hearing loss

Conditions

- Behcet disease
- Cogan syndrome
- Vasculitis secondary to infection, including:
 - drugs »
 - hepatitis B »
 - malignancies

EPIDEMIOLOGY, PATHOPHYSIOLOGY, AND CLINICAL SCIENCES

Advanced Trainees will have a comprehensive depth of knowledge of the principles of the foundational sciences.

Epidemiology

- Incidence and prevalence
- Male to female ratio
- Genetic factors

Pathophysiology

· Pathophysiology of the various vasculidities and their effect on different organ systems

Treatments

- Drug interactions, indications, safety monitoring, and side effect profiles for medications used in treatment of vasculitis:
 - corticosteroids:
 - intravenous 0
 - intra-articular 0
 - oral 0
 - cytotoxic drugs
 - intravenous immunoglobulin
 - disease-modifying antirheumatic drugs (DMARDs):
 - biological DMARDs, such as inhibitors of:
 - B cells
 - interleukin-1
 - interleukin-6
 - tumour necrosis factor α
 - conventional DMARDs, such as azathioprine
 - targeted synthetic DMARDs, such as Janus kinase inhibitors 0
 - other treatment strategies, including:
 - antihypertensive agents 0
 - antiplatelet agents 0
 - anti-infective prophylaxis 0
 - lipid-lowering agents 0
- Induction versus maintenance versus refractory therapies

Clinical assessment and disease scoring tools INVESTIGATIONS, Diagnostic criteria classification by:

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- European Alliance of Associations for Rheumatology (EULAR) »
- Paediatric Rheumatology European Society (PReS) »
- Paediatric Rheumatology International Trials Organisation » (PRINTO)
- Differences between adult and juvenile presentations of vasculitis
- Vasculitis-specific disease activity measures

PROCEDURES, AND CLINICAL ASSESSMENT TOOLS

Advanced Trainees will know the scientific foundation of each investigation and procedure, including

relevant anatomy and physiology. They will be able to interpret the reported results of each investigation or procedure.

Advanced Trainees will know how to explain the investigation or procedure to patients, families, and carers, and be able to explain procedural risk and obtain informed consent where applicable.

Investigations

- Baseline blood and urine investigations assessing for involvement of specific organ systems, such as:
 - kidney function »
 - liver function »
 - muscle enzymes »
- Baseline investigations assessing for inflammation
- Biopsy of specific organs, as required, such as:
 - kidney »
 - skin >>
- Echocardiography at baseline and for monitoring
 - Imaging modalities:
 - angiography, including:
 - CT 0
 - conventional 0
 - medical radiation technologists (MRT) 0
 - cross-sectional imaging, such as of:
 - central nervous system (CNS) 0
 - 0 lungs
 - sinuses 0
 - radionucleotide studies >>
 - ultrasound >>
 - x-rav >>
- Immune function screening
- Indications for genetic testing
- Monitoring blood tests for patients on treatment
- Pre-immunosuppression screening, such as latent tuberculosis screening
- Respiratory function testing at baseline and for monitoring
 - Specific immune testing in vasculitis, such as:
 - antineutrophil cytoplasmic antibodies (ANCA), including:
 - myeloperoxidase (MPO) 0
 - proteinase-3 (PR-3) 0

Multidisciplinary team considerations

- antinuclear antibodies (ANA)
- extractable nuclear antibodies (ENA) >>
- anti-c1q antibodies >>
- HLA-B51
- Testing of and interpretation of results for macrophage activation syndrome

IMPORTANT SPECIFIC ISSUES

will identify important

and the impact of

these on diagnosis

and management and

integrate these into care.

specialty-specific issues

Collaboration with other teams to make accurate diagnoses: infectious diseases Advanced Trainees nephrology

- neurology »
- ophthalmology
- respiratory

Outcomes and long-term monitoring in systemic vasculitis

- Cardiovascular outcomes, including stroke risk and coronary artery disease
- Mortality rates
- Other organ-specific outcomes:
 - blood vessels, such as aneurysm »
 - central nervous system (CNS) »
 - eyes
 - gastrointestinal tract (GIT) »
 - lung >>
 - skin



Knowledge guide 8 – Autoinflammatory conditions

Rheumatology, Paediatrics & Child Health Division

KEY PRESENTATIONS AND CONDITIONS

Advanced Trainees will have a comprehensive depth of knowledge of these presentations and conditions.

Presentations

- Multisystem inflammation
- Persistent / recurrent fever
- Skin involvement

Conditions

- Interferon-mediated syndromes:
 - » Aicardi–Goutières syndrome
 - » monogenic lupus
 - » proteosome-associated auto-inflammatory syndrome (PRAAS)
 - » stimulator of interferon genes (STING)-associated vasculitis of infancy (SAVI)
- Interleukin-1 (IL-1)-mediated syndromes:
 - » cryopyrin-associated periodic syndrome (CAPS)
 - » familial Mediterranean fever (FMF)
 - mevalonate kinase deficiency (MVK Def)
 - » pyogenic arthritis, pyoderma gangrenosum, and acne syndrome (PAPA)
 - » tumour necrosis factor (TNF) receptor-associated periodic syndrome (TRAPS)
- Polygenic auto-inflammatory diseases:
 - » Behcet disease
 - » chronic non-infectious osteomyelitis (CNO)
 » periodic fever, aphthous ulceration, pharyngitis, and adenitis syndrome (PFAPA)
 - » synovitis acne, pustulosis, hyperostosis, and osteitis syndrome (SAPHO)
 - » systemic-onset juvenile idiopathic arthritis (JIA) / Still disease

For each presentation and condition, Advanced Trainees will **know how to:**

Synthesise

- » recognise the clinical presentation
- » identify relevant epidemiology, prevalence, pathophysiology, and clinical science
- » take a comprehensive clinical history
- » conduct an appropriate examination
- » establish a differential diagnosis
- » plan and arrange appropriate investigations
- » consider the impact of illness and disease on patients²³ and their quality of life when developing a management plan

Manage

- » provide evidence-based management
- » prescribe therapies tailored to patients' needs and conditions
- » recognise potential complications of disease and its management, and initiate preventative strategies
- » involve multidisciplinary teams

Consider other factors

» identify individual and social factors and the impact of these on diagnosis and management

²³ References to patients in the remainder of this document may include their families, whānau, and/or carers.

LESS COMMON OR MORE COMPLEX PRESENTATIONS AND CONDITIONS

Advanced Trainees will understand these presentations and conditions.

Advanced Trainees will understand the resources that should be used to help manage patients with these presentations and conditions.

EPIDEMIOLOGY, PATHOPHYSIOLOGY, AND CLINICAL SCIENCES

Advanced Trainees will have a comprehensive depth of knowledge of the principles of the foundational sciences.

Presentations

• As above

Conditions

- Amyloidosis
- Blau syndrome
- Deficiency of interleukin-1 receptor antagonist (DIRA)
- Immunoglobulin G4 (IgG4) disease
- Majeed syndrome
- Sarcoidosis

Epidemiology

- Difference between ethnic groups
- Male to female ratio

Pathophysiology

- Gain of function mutations
- Interlukin-1 and interferon pathways
- Role of the inflammasome in autoinflammatory disease

Pharmacological treatment of autoinflammatory diseases

- Drug interactions, safety monitoring, and side effect profiles for medications used in the treatment of autoinflammatory diseases, such as:
 - biological disease-modifying antirheumatic drugs (bDMARD) that target:
 - o interleukin-1
 - o interleukin-6
 - tumour necrosis factor (TNF)
 - » colchicine
 - » corticosteroids
 - » Janus kinase inhibitors
 - non-steroidal anti-inflammatory drugs

Clinical assessment and disease scoring tools

- Diagnostic criteria
- Disease activity measures that may apply to individual diseases, such as the Autoinflammatory Diseases Activity Index (AIDAI)
- Genetic testing
- Targeted and whole exome studies, as well as other techniques

Investigations

- Biochemical analysis:
 - » ferritin
 - » liver function tests
 - » urea and electrolytes
 - Haematological markers:
 - » clotting studies, including lupus anticoagulant
 - » complete blood count
- Inflammatory markers:
 - » C-reactive protein (CRP)
 - » erythrocyte sedimentation rate (ESR)
 - » ferritin
 - » serum amyloid A
 - » serum immunoglobulin G (IgG) subclasses

INVESTIGATIONS, PROCEDURES, AND CLINICAL ASSESSMENT TOOLS

Advanced Trainees will know the scientific foundation of each investigation and procedure, including relevant anatomy and physiology. They will be able to interpret the reported results of each investigation or procedure.

Advanced Trainees will know how to explain the investigation or procedure to patients, families, and carers, and be able to explain procedural risk and

obtain	informed consent
where	applicable.

- Imaging, such as: •
 - angiography, including: »
 - conventional 0
 - CT 0
 - MRI 0
 - CT
 - MRI »

»

- PET »
- radionucleotide studies »
- ultrasound »
- x-ray »
- Other investigations: •
 - echocardiography »
 - lung function testing »
- Urinalysis:
 - B2-microglobulin »
 - mevalonic aciduria »
 - protein and albumin creatinine ratio »

Procedures

Biopsy of specific organs •

IMPORTANT SPECIFIC ISSUES

Advanced Trainees

Rapid advancements in genetics, and their applicability to new syndromes •

Outcomes and long-term monitoring

- Amyloidosis risk •
- Other organ-specific outcomes:
- cardiovascular »
 - central nervous system (CNS) »
 - eyes »
 - joints »
 - kidney »
 - lung »
 - skin »

will identify important specialty-specific issues and the impact of these on diagnosis and management and integrate these into care.



Knowledge guide 9 – Non-inflammatory musculoskeletal and rheumatic disorders

Rheumatology, Paediatrics & Child Health Division

KEY PRESENTATIONS AND CONDITIONS

Advanced Trainees will have a comprehensive depth of knowledge of these presentations and conditions.

Presentations

- Acrocyanosis
- Allodynia
- Back pain
- Flat feet
- Generalised hypermobility
- Hyperalgesia
- Leg length discrepancy
- Limp
- Musculoskeletal pain that limits function
- Regional musculoskeletal pain, chronic
- Restriction in movement in axial or peripheral joints
- Symptoms of pain sensitisation / amplification
- Widespread musculoskeletal pain, chronic

Conditions

- Acrocyanosis
- Chilblains
- Growing pains
- Hereditary connective tissue disorders, such as:
 - » Ehlers–Danlos syndrome
 - Marfan syndrome
- Joint hypermobility, and syndromes associated with joint hypermobility
- Pain amplification syndromes, including:
 - » chronic widespread pain syndrome
 - » complex regional pain syndromes (CRPS)
 - » secondary pain sensitisation
- Regional biomechanical conditions (including, but not limited to):
 - » ankle, such as tarsal coalition
 - apophysitis syndromes, such as:
 Osgood–Schlatter disease
 - Sever's disease
 - hips:
 - o Perthes disease
 - slipped upper femoral epiphysis (SUFE)

For each presentation and condition, Advanced Trainees will **know how to:**

Synthesise

- » recognise the clinical presentation
- » identify relevant epidemiology, prevalence, pathophysiology, and clinical science
- » take a comprehensive clinical history
- » conduct an appropriate examination
- » establish a differential diagnosis
- » plan and arrange appropriate investigations
- » consider the impact of illness and disease on patients²⁴ and their quality of life when developing a management plan

Manage

- » provide evidence-based management
- » prescribe therapies tailored to patients' needs and conditions
- » recognise potential complications of disease and its management, and initiate preventative strategies
- » involve multidisciplinary teams

Consider other factors

» identify individual and social factors and the impact of these on diagnosis and management

²⁴ References to patients in the remainder of this document may include their families, whānau, and/or carers.

	 knees: Hoffa pad impingement syndrome patellofemoral pain osteochondritis dissecans lesions pes planus spine: discitis scoliosis spondylosis / spondylolisthesis
<text><text><text></text></text></text>	 Conditions Endocrine disorders, such as diabetic cheiroarthropathy Inborn errors of immunity, such as: antibody deficiency combined immunodeficiency Malignancy, such as: bone tumours leukemia Metabolic disorders, such as mucopolysaccharidoses Musculoskeletal manifestations of other systemic disease Skeletal dysplasia Vitamin deficiency, such as: rickets scurvy
EPIDEMIOLOGY, PATHOPHYSIOLOGY, AND CLINICAL SCIENCES Advanced Trainees will have a comprehensive depth of knowledge of the principles of the foundational sciences.	 Common ages of presentation of biomechanical conditions, such as Perthes disease versus slipped upper femoral epiphysis (SUFE) Hypermobility across the age spectrum Musculoskeletal anatomy Pathophysiology of pain, and potential psychosocial factors as a complex interaction of signals of: central nervous system (CNS) neuropathic nociceptive Sex ratios of listed conditions, including pain amplification syndromes
INVESTIGATIONS, PROCEDURES, AND CLINICAL ASSESSMENT TOOLS Advanced Trainees will know the scientific foundation of each investigation and procedure, including relevant anatomy and physiology. They will be able to interpret the reported results of each investigation or procedure.	 Applicability of hypermobility scores, such as the Beighton score, in paediatrics Appropriate imaging modalities to diagnose or exclude specific conditions Autoantibody testing, blood tests, and inflammatory markers Clinical assessment to rationalise investigations, with an awareness of the challenges of false positives and over-investigating, weighed against the risk of missing organic pathology Genetic testing for relevant conditions such as Ehlers–Danlos syndrome Interpretation of metabolic screening, such as urine glucose aminoglycans, as relevant

Advanced Trainees will know how to explain the investigation or procedure to patients, families, and carers, and be able to explain procedural risk and obtain informed consent where applicable.

Therapeutics and management principles

- Educating patients and families regarding musculoskeletal pain
- Evidence-based approach to management of symptoms and disease through:
 - » addressing psychosocial contributors
 - » aids / braces / splints, as required
 - » allied health input
 - » awareness of available therapeutics for treating chronic pain
 - » awareness of interventional pain procedures, such as nerve blocks
 - » non-pharmacological and pharmacological approaches
- Exercise
- Healthy eating
- Lifestyle modification, including sleep hygiene
- The role of multidisciplinary input, such as:
 - » occupational therapist
 - » physiotherapy
 - » psychologist
 - » school liaison

IMPORTANT SPECIFIC ISSUES

- Awareness of potential mimics of arthritis and other rheumatic conditions
 Impact of chronic musculoskeletal pain (of any nature) on the child and family
- Management of patient expectations in clinic, such as further investigations or curative medications, in patients with pain
- Patient advocacy, such as letters of support for school

Advanced Trainees will identify important specialty-specific issues and the impact of these on diagnosis and management and integrate these into care.