NEW CURRICULA

Advanced Training in Rheumatology (Paediatrics and Child Health)

Curriculum standards

RACP Specialists. Together

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) LTA program.

Contents

Program overview

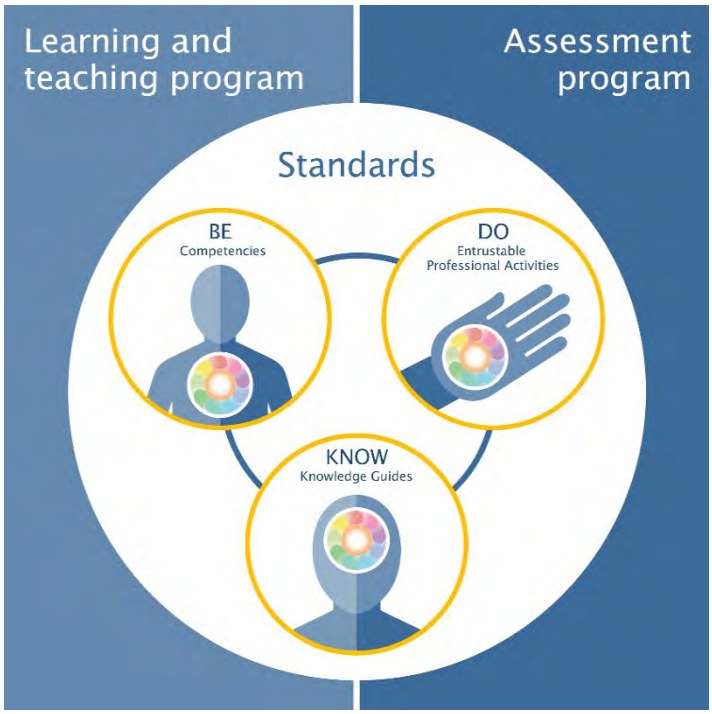
Purpose of Advanced Training

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.

RACP curriculum model



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.

Professional Practice Framework

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

Learning, teaching, and assessment (LTA) structure

The learning, teaching and assessment structure defines the framework for delivery and trainee achievement of the curriculum standards in the Advanced Training program.

Advanced Training is structured in three phases. These phases will establish clear checkpoints for trainee progression and completion.

1	**Specialty foundation**	• Orient trainees and confirm their readiness to progress in the Advanced Training program
2	**Specialty consolidation**	• Continue trainees' professional development in the specialty and support progress towards the learning goals
3	**Transition to Fellowship**	• Confirm trainees' achievement of the curriculum standards, completion of Advanced Training, and admission to Fellowship • Support trainees' transition to unsupervised practice

Figure 1: Advanced Training learning, teaching, and assessment structure

- An **entry decision** is made before entry into the program.
- A **progress decision**, based on competence, is made at the end of each phase 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 full-time equivalent experience, and progression and completion decisions are based on evidence of trainees' competence.

Rheumatology (Paediatrics & Child Health) 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.

Rheumatology (Paediatrics & Child Health) learning goals

The curriculum standards are summarised as 22 learning goals. The learning goals articulate what trainees need to be, do and know, and are assessed throughout training.

BE Competencies	1. Professional behaviours
DO EPAs	2. Team leadership 3. Supervision and teaching 4. Quality improvement 5. Clinical assessment and management 6. Management of transitions in care 7. Acute care 8. Longitudinal care 9. Communication with patients 10. Prescribing 11. Procedures 12. Investigations 13. Clinic management
KNOW Knowledge guides	14. Foundations of paediatric rheumatology 15. Intra-articular steroid injection 16. Arthritis 17. Systemic lupus erythematosus and related conditions 18. Juvenile dermatomyositis 19. Scleroderma 20. Vasculitis 21. Autoinflammatory conditions 22. Non-inflammatory musculoskeletal and rheumatic disorders

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.

Learning goal 1: Professional behaviours

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 carers[1], 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.

[2]Adapted 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 as[1].

- 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.

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

Learning goal 2: Team leadership

Theme	Team leadership	
Title	**Lead a team of health professionals**	
Description	This activity requires the ability to: • prioritise workload • manage multiple concurrent tasks • articulate individual responsibilities, expertise, and accountability of team members • understand the range of team members' skills, expertise, and roles • acquire and apply leadership techniques in daily practice • collaborate with and motivate team members • encourage and adopt insights from team members • act as a role model.	
Behaviours		
Professional practice framework domain	**Ready to perform without supervision** Expected behaviours of a trainee who can routinely perform this activity without needing supervision The trainee will:	**Requires some supervision** Possible behaviours of a trainee who needs some supervision to perform this activity The trainee may:
Medical expertise	• synthesise information with other disciplines to develop optimal, goal-centred plans for patients[4] • 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	
Quality and safety	• identify opportunities to improve care by participating in surveillance and monitoring of adverse events and 'near misses' • 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	• participate in audits and other activities that affect the quality and safety of patients' care • participate in interdisciplinary collaboration to provide effective health services and operational change • use information resources and electronic medical record technology where available
Teaching and learning	• regularly self-evaluate personal professional practice, and implement changes based on the results • seek feedback proactively from supervisors and colleagues on own performance • identify personal gaps in skills and knowledge, and engage in self-directed 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	• accept feedback constructively, and change behaviour in response • recognise the limits of personal expertise, and involve other health professionals as needed • demonstrate basic skills in facilitating colleagues' learning
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 • consult with stakeholders, achieving a balance of alternative views	• 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 • promote team values of honesty, discipline, and commitment to continuous improvement

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

Learning goal 3: Supervision and teaching

Theme	Supervision and teaching	
Title	**Supervise and teach professional colleagues**	
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		
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	• 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 patients[5], 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.

	• support learners to deliver clear, concise, and relevant information in both verbal and written communication • listen and convey information clearly and considerately	
Quality and safety	• support learners to deliver quality care while maintaining their own wellbeing • apply lessons learned about patient safety by identifying and discussing risks with learners • assess learners' competence, and provide timely feedback to minimise risks to care • maintain the safety of patients and organisations involved with education, and appropriately identify and action concerns	• observe learners to reduce risks and improve health outcomes
Teaching and learning	• demonstrate knowledge of the principles, processes, and skills of supervision • provide direct guidance to learners in day-to-day work • work with learners to identify professional development and learning opportunities based on their individual learning needs • offer feedback and role modelling • participate in teaching and supervision professional development activities • encourage self-directed learning and assessment • 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 • 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	• demonstrate basic skills in the supervision of learners • apply a standardised approach to teaching, assessment, and feedback without considering individual learners' needs • implement teaching and learning activities that are misaligned to learning goals • adopt a teaching style that discourages learner self-directedness
Research	• clarify junior colleagues' research project goals and requirements, and provide feedback regarding the merits or challenges of proposed research	• guide learners with respect to the choice of research projects • 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	
Cultural safety	• role model a culturally appropriate approach to teaching • encourage learners to seek out opportunities to develop and improve their own 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	• function effectively and respectfully when working with and teaching with people from different cultural backgrounds
Ethics and professional behaviour	• apply principles of ethical practice to teaching scenarios • act as a role model to promote professional responsibility and ethics among learners • respond appropriately to learners seeking professional guidance	• demonstrate professional values, including commitment to high-quality clinical standards, compassion, empathy, and respect • provide learners with feedback to improve their experiences
Judgement and decision making	• prioritise workloads and manage learners with different levels of professional knowledge or experience • link theory and practice when explaining professional decisions • promote joint problem solving • 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	• provide general advice and support to learners • use health data logically and effectively to investigate difficult diagnostic problems
Leadership, management, and teamwork	• maintain personal and learners' effective performance and continuing professional development • maintain professional, clinical, research, and/or administrative responsibilities while teaching • create an inclusive environment in which learners feel part of the team	• demonstrate the principles and practice of professionalism and leadership in health care • participate in mentor programs, career advice, and general counselling

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

Learning goal 4: Quality improvement

Theme	Quality improvement	
Title	**Identify and address failures in health care delivery**	
Description	This activity requires the ability to: • identify and report actual and potential ('near miss') errors • conduct and evaluate system improvement activities • adhere to best practice guidelines • audit clinical guidelines and outcomes • contribute to the development of policies and protocols designed to protect patients and enhance health care • monitor one's own practice and develop 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 patients[6] 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 complaint and feedback systems	• 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 health information

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

	• discuss with patients any safety and quality concerns they have relating to their care • implement the organisation's open disclosure policy	
Quality and safety	• demonstrate safety skills, including infection control, adverse event reporting, and effective clinical handover • participate in organisational quality and safety activities, including morbidity and mortality reviews, clinical incident reviews, root cause analyses, and corrective action preventative action plans • participate in systems for surveillance and monitoring of adverse events and 'near misses', including reporting such events • ensure that identified opportunities for improvement are raised and reported appropriately • use clinical audits and registries of data on patients' experiences and outcomes, learnings from incidents, and complaints to improve care	• demonstrate understanding of a systematic approach to improving the quality and safety of health care
Teaching and learning	• translate quality improvement approaches and methods into practice • participate in professional training in quality and safety to ensure a contemporary approach to safety system strategies • supervise and manage the performance of junior colleagues in the delivery of high-quality, safe care	• work within organisational quality and safety systems for the delivery of clinical care • use opportunities to learn about safety and quality theory and systems
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	• 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 • analyse and evaluate current care processes to improve healthcare	• access information and advice from other health practitioners to identify, evaluate, and improve patients' care management
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 • involve clinical pharmacists actively in the medication-use process	• 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
Health policy, systems, and advocacy	• 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 • 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	• 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

Learning goal 5: Clinical assessment and management

Theme	Clinical assessment and management	
Title	**Clinically assess and manage the ongoing care of patients**	
Description	This activity requires the ability to: • identify and access sources of relevant information about patients[7] • obtain patient histories • examine patients • synthesise findings to develop provisional and differential diagnoses • discuss findings with patients • generate management plans • present findings to other health professionals.	
Behaviours		
Professional practice framework domain	**Ready to perform without supervision** Expected behaviours of a trainee who can routinely perform this activity without needing supervision The trainee will:	**Requires some supervision** Possible behaviours of a trainee who needs some supervision to perform this activity 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 rational and cost-effective use of investigations	• 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

[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	
Communication	• communicate openly, listen, and take patients' concerns seriously, giving them adequate opportunity to ask questions • provide information to patients to enable them to make fully informed decisions from various diagnostic, therapeutic, and management options • communicate clearly, effectively, respectfully, and promptly with other health professionals involved in patients' care • provide patient and family education and support	• anticipate, read, and respond to verbal and nonverbal cues • demonstrate active listening skills • communicate patients' situations to colleagues, including senior clinicians
Quality and safety	• demonstrate safety skills, including infection control, adverse event reporting, and effective clinical handover • recognise and effectively deal with aggressive and violent patient behaviours through appropriate training • obtain informed consent before undertaking any investigation or providing treatment (except in an emergency) • ensure patients are informed of the material risks associated with any part of proposed management plans	• perform hand hygiene, and take infection control precautions at appropriate moments • take precaution against assaults from confused or agitated patients, ensuring appropriate care of patients • document history and physical examination findings, and synthesise with clarity and completeness

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 community member to assist in 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

Learning goal 6: Management of transitions in care

Theme	Management of transitions in care	
Title	**Manage the transition of patient care between health professionals, providers, and contexts**	
Description	This activity requires the ability to: • manage the transition of patient[8] care to ensure the optimal continuation of care between providers • identify the appropriate care providers and other stakeholders with whom to share patient information • exchange pertinent, contextually appropriate, and relevant patient information • explain the challenges surrounding the transition to adult care for patients and clinicians • perform this activity in multiple settings, appropriate to the speciality, including inpatient, ambulatory, and critical care settings.	
Behaviours		
Professional practice framework domain	**Ready to perform without supervision** Expected behaviours of a trainee who can routinely perform this activity without needing supervision The trainee will:	**Requires some supervision** Possible behaviours of a trainee who needs some supervision to perform this activity 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.

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

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

Learning goal 7: Acute care

Theme	Acute care	
Title	**Manage the early care of acutely unwell patients**	
Description	This activity requires the ability to: • assess seriously unwell patients[9], and initiate management • recognise clinical deterioration, and respond by following the local process for escalation of care • recognise and manage acutely unwell patients who require resuscitation • lead the resuscitation team initially, and involve other necessary services • liaise with transport services and medical teams • perform this activity primarily in inpatient settings • identify patients in external 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	
Communication	• communicate clearly with other team members, and coordinate efforts of multidisciplinary team members • use closed-loop and clear communication with other health care team members during resuscitation • facilitate early communication with patients and healthcare team members to allow shared decision making • 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	• demonstrate communication skills to support the function of multidisciplinary teams • determine patients' understanding of their diseases, if possible, and what they perceive as the most desirable goals of care
Quality and safety	• maintain up-to-date certification in advanced life support • use clinical information technology systems for conducting prospective and retrospective clinical audits • evaluate and explain the benefits and risks of clinical interventions based on individual patients' circumstances • 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	• evaluate the quality of processes through well-designed audits • recognise the risks and benefits of operative interventions • raise appropriate issues for review at morbidity and mortality meetings • evaluate the quality and safety processes implemented within the workplace, and identify gaps in their structure

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

Learning goal 8: Longitudinal care

Theme	Longitudinal care	
Title	**Manage and coordinate the longitudinal care of patients with chronic illness, disability, and/or long-term health issues**	
Description	This activity requires the ability to: • develop management plans and goals in consultation with patients[10] • manage chronic and advanced conditions, complications, disabilities, and comorbidities • collaborate with other health care providers • ensure continuity of care • facilitate patients' self-management and self-monitoring • engage with the broader health policy 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 The trainee will:	**Requires some supervision** Possible behaviours of a trainee who needs some supervision to perform this activity 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 patients in that dialogue	• 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
Quality and safety	• use innovative models of chronic disease care, using telehealth and digitally integrated support services • review medicine use and ensure patients understand safe medication administration to prevent errors • 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	• participate in continuous quality improvement processes and clinical audits on chronic disease management • identify activities that may improve patients' quality of life
Teaching and learning	• contribute to the development of clinical pathways for chronic diseases management based on current clinical guidelines • educate patients to recognise and monitor their symptoms, and undertake strategies to assist their recovery	• use clinical practice guidelines for chronic diseases management
Research	• prepare reviews of literature on patients' encounters to present at journal club meetings • search for and critically appraise evidence to resolve clinical areas of uncertainty	• search literature using problem / intervention / comparison / outcome (PICO) format • 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 • incorporate appropriate LGBTQIA+ safe language	• provide culturally safe chronic disease management
Ethics and professional behaviour	• share information about patients' health care, consistent with privacy laws and confidentiality and professional guidelines	• 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

Learning goal 9: Communication with patients

Theme	Communication with patients	
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		
Professional practice framework domain	**Ready to perform without supervision** Expected behaviours of a trainee who can routinely perform this activity without needing supervision The trainee will:	**Requires some supervision** Possible behaviours of a trainee who needs some supervision to perform this activity 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 • convey information considerately and sensitively to patients, seeking clarification if unsure of how best to proceed • treat children and young people respectfully, and listen to their views • 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	• 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
Quality and safety	• discuss with patients their condition and the available management options, including potential benefits and harms • provide information to patients in a way they can understand before asking for their consent • 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 • participate in processes to manage patient complaints	• inform patients of the material risks associated with the proposed management plan • treat information about patients as confidential
Teaching and learning	• discuss the aetiology of diseases and explain the purpose, nature, and extent of assessments to be conducted • obtain informed consent or other valid authority before involving patients in teaching	• respond appropriately to information sourced by patients, and to patients' knowledge regarding their condition
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 Research Council of New Zealand • provide information to patients in a way they can understand before asking for their consent to participate in research • obtain an informed consent or other valid authority before involving patients in research • use evidence effectively and efficiently to inform clinical decision making	• demonstrate an understanding of the limitations of the evidence and the challenges of applying research in daily practice
Cultural safety	• demonstrate effective and culturally competent communication with Aboriginal and Torres Strait Islander peoples and Māori • communicate effectively with members of other cultural groups by meeting patients' specific language, cultural, and communication needs • 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	• identify when to use interpreters • allow enough time for communication with members of other cultural groups by meeting patients' specific communication, cultural, and language needs
Ethics and professional behaviour	• encourage and support patients to be well informed about their health, and to use this information wisely when they make decisions • encourage and support patients in caring for themselves and managing their health • demonstrate respectful professional relationships with patients • prioritise honesty, patients' welfare, and community benefit above self-interest • develop a high standard of personal conduct, consistent with professional and community expectations • support patients' rights to seek second opinions	• respect the preferences of patients • communicate appropriately, consistent with the context, and respect patients' needs and preferences • maximise patient autonomy, and support their decision making • avoid sexual, intimate, and/or financial relationships with patients • demonstrate a caring attitude towards patients • respect patients, including protecting their rights to privacy and confidentiality • behave equitably towards all, irrespective of gender, age, culture, socioeconomic status, sexual preferences, beliefs, contribution to society, illness-related behaviours, or the illness itself • 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

Learning goal 10: Prescribing

Theme	Prescribing	
Title	**Prescribe and monitor therapies tailored to patients' needs and conditions**	
Description	This activity requires the ability to: • take and interpret medication histories • choose appropriate medicines based on an understanding of pharmacology, taking into consideration age, comorbidities, potential drug interactions, risks, and benefits • communicate with patients[12] about the benefits and risks of proposed therapies • provide instructions on medication administration effects and side effects • monitor medicines for efficacy and safety • review medicines and interactions, and cease where appropriate • collaborate with pharmacists.	
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	• 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	
Quality and safety	• review medicines regularly to reduce non-adherence and monitor treatment effectiveness, possible side effects, and drug interactions, ceasing unnecessary medicines • use electronic prescribing tools where available, and access electronic drug references to prevent errors caused by drug interactions and poor handwriting • 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	• check the dose before prescribing • monitor side effects of medicines prescribed • identify medication errors and institute appropriate measures • use electronic prescribing systems safely • rationalise medicines to avoid polypharmacy

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

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 medicines » interactions » risk-benefit analysis
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 and morbidity and mortality meetings
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	• prescribe in accordance with the organisational policy

Learning goal 11: Procedures

Theme	Procedures	
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 patients[13] • 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		
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	• 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	• assess patients and identify indications for procedures • check for allergies and adverse reactions • consider risks and complications of procedures • interpret results of common diagnostic procedures • organise and document post-procedure review of patients

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

Communication	• 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 informed choices • counsel patients sensitively and effectively, and support them to make informed choices • address patients' concerns relating to procedures, providing opportunities to ask questions • tailor language according to individual patients' age and capacity to understand • communicate effectively with team members and patients during and after procedures • ensure team members are confident and competent in their assigned roles	• 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 • complete relevant patients' documentation, and conduct appropriate clinical handovers
Quality and safety	• obtain informed consent or other valid authority before undertaking any procedure • set up all necessary equipment, and consistently use universal precautions and aseptic technique • confirm patients' identification, verify the procedure, and, where appropriate, the correct position / site / side / level for the procedure • ensure that information on patients' consent forms matches procedures to be performed • identify, document, and appropriately notify of any adverse events or equipment malfunction	• provide information in a manner so that patients are fully informed when consenting to any procedures • demonstrate an inconsistent application of aseptic technique • identify patients using approved patients' identifiers before any treatment or intervention is initiated • attempt to perform a procedure in an unsafe environment
Teaching and learning	• refer to and/or be familiar with relevant published procedural guidelines prior to undertaking procedures • organise or participate in in-service training on new technology • provide specific and constructive feedback and comments to junior colleagues • initiate and conduct skills training for junior staff	• participate in continued professional development • help junior colleagues develop new skills • seek feedback proactively on personal technique until competent

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

Learning goal 12: Investigations

Theme	Investigations	
Title	**Select, organise, and interpret investigations**	
Description	This activity requires the ability to: • select, plan, and use evidence-based clinically appropriate investigations • prioritise patients[14] receiving investigations (if there is a waiting list) • evaluate the anticipated value of the investigation • work in partnership with patients to facilitate choices that are right for them • provide aftercare for patients (if needed) • interpret the results and outcomes of investigations • communicate the outcome of investigations to patients.	
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	• 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 decisions may not be appropriate or evidence based	• identify appropriate proxy decision makers when required • choose not to investigate in situations where it is not appropriate for ethical reasons • 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 or other valid authority • demonstrate awareness of complex issues related to genetic information obtained from investigations, and subsequent disclosure of such information	• 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
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	

Learning goal 13: Clinic management

Theme	Clinic management	
Title	**Manage an outpatient clinic**	
Description	This activity requires the ability to: • manage medical procedures and treatments • manage clinic services • oversee quality improvement activities • communicate with patients[15] • liaise with other health professionals and team members • demonstrate problem-solving skills • use public resources responsibly.	
Behaviours		
Professional practice framework domain	**Ready to perform without supervision** Expected behaviours of a trainee who can routinely perform this activity without needing supervision The trainee will:	**Requires some supervision** Possible behaviours of a trainee who needs some supervision to perform this activity 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 • ensure that patients are informed about fees and charges	• participate in organisational quality and safety activities, including clinical incident reviews
Teaching and learning	• evaluate their own professional practice • demonstrate learning behaviour and skills in educating junior colleagues • contribute to the generation of knowledge • maintain professional continuing education standards	• recognise the limits of personal expertise, and involve other professionals as needed to contribute to patients' care • use information technology appropriately as a resource for modern medical practice
Research	• obtain informed consent or other valid authority before involving patients in 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	• allow patients to make informed and voluntary decisions to participate in research
Cultural safety	• incorporate appropriate LGBTQIA+ safe language • apply knowledge of the cultural needs of the community serving, and how to shape service to those people • mitigate the influence of own culture and beliefs on interactions with patients and decision making • adapt practice to improve patient engagement and health outcomes	• acknowledge the social, economic, cultural, and behavioural factors influencing health, both at individual and population levels
Ethics and professional behaviour	• identify and respect the boundaries that define professional and therapeutic relationships • respect the roles and expertise of other health professionals • comply with the legal requirements of preparing and managing documentation • demonstrate awareness of financial and other conflicts of interest	• demonstrate awareness of the responsibility to protect and advance the health and wellbeing of individuals and communities • maintain the confidentiality of documentation, and store clinical notes appropriately • ensure that the use of social media is consistent with ethical and legal obligations
Judgement and decision making	• integrate prevention, early detection, health maintenance, and chronic condition management, where relevant, into clinical practice • work to achieve optimal and cost-effective patient care that allows maximum benefit from the available resources	• recognise the appropriate use of human resources, diagnostic interventions, therapeutic modalities, and health care facilities

Leadership, management, and teamwork	• 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 • 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	• attend relevant clinical meetings regularly
Health policy, systems, and advocacy	• demonstrate capacity to engage in the surveillance and monitoring of the health status of populations in the outpatient setting • 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	• understand common population health screening and prevention approaches

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
14	Foundations of paediatric rheumatology
15	Intra-articular steroid injection
16	Arthritis
17	Systemic lupus erythematosus and related conditions
18	Juvenile dermatomyositis
19	Scleroderma
20	Vasculitis
21	Autoinflammatory conditions
22	Non-inflammatory musculoskeletal and rheumatic disorders

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:
    - o conditioning
    - o hydrotherapy
    - o joint protection and energy conservation techniques
    - o range of motion
    - o 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

- intramuscular
- intravenous
- 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:
    - B cells
    - co-stimulatory effects
    - interferon
    - interleukin-1 (IL-1)
    - interleukin-6 (IL-6)
    - interleukin-17 (IL-17)
    - tumour-necrosis factor α
  - conventional DMARDs (cDMARDs), including, but not limited to:
    - azathioprine
    - cyclosporine
    - leflunomide
    - methotrexate
    - 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:
    - autoimmunity
    - autoinflammation
    - immune complexes
    - infectious agents
-

INVESTIGATIONS, PROCEDURES, AND CLINICAL ASSESSMENT TOOLS

Advanced Trainees will know the scientific foundation of each investigation and

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 patients[16], 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:
    - o antiplatelet antibodies
    - o 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
    - o 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

IMPORTANT SPECIFIC ISSUES

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

- 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

- 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
    - emotional development and independence
    - 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
-

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: o ankles o knees o metatarsophalangeal o proximal and distal interphalangeal o subtalar » upper limb joints, including: o elbow o metacarpophalangeal o proximal and distal interphalangeal o shoulder o 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: o hip joints o sacroiliac o spinal o 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: o failure of procedure o infection o subcutaneous atrophy • Use of splinting / casting
POST-THERAPY Advanced Trainees will know how to monitor and manage patients post-therapy.	• Infection risk and appropriate patient / parental education / safety-netting • Return to exercise • Subcutaneous atrophy management
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.	• Multidisciplinary team involvement: » physiotherapy and occupational therapy for splinting / casting » radiology for image guided injections

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 patients[18] 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: o DiGeorge / 22Q syndrome o Down syndrome o Turner syndrome » coeliac disease-associated » 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: o non-radiographic o radiographic » crystal-induced, such as gout » osteoarthritis » psoriatic arthritis » reactive arthritis » rheumatoid arthritis: o seronegative o 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):
  - » 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
    - o tumour-necrosis factor α
  - » conventional DMARDs (cDMARDs), such as:
    - o hydroxychloroquine
    - o leflunomide
    - o 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.

Clinical assessment tools

- JIA
  - » damage scores
  - » 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

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 o physiotherapy o 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

Learning goal 17 – 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

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 patients[19] 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
  - » cytotoxic drugs, such as cyclophosphamide
  - » disease-modifying antirheumatic drugs (DMARDs), including:
    - o biological DMARDs (bDMARDs):
      - ▪ B cell targeting therapies
      - ▪ interferon-targeting
    - o 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

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.

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
    - o 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
    - o C3
    - o C4
    - o CH50
    - o CH100
  - » creatinine

- electrolytes
- ferritin
- immunoglobulins:
  - IgA
  - IgG
  - IgM
- liver function tests
- muscle enzymes:
  - CK
  - LDH
- thyroid function tests
- urea

- Haematological markers:
  - clotting studies, including lupus anti-coagulant
  - complete blood count
  - Coombs test
- Imaging:
  - angiography:
    - conventional
    - CT
    - 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

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 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

Learning goal 18 – 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.

Presentations

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

Conditions

- JDM

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

- 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 patients[20] 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):
    - o biological DMARDs
    - o conventional DMARDs
    - o targeted synthetic DMARDs
  - » non-steroidal anti-inflammatory drugs
  - » treatment considerations:
    - o antihypertensive agents
    - o 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:
    - o occupational therapy
    - o physiotherapy
    - o psychology
    - o 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 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 • 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

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 (lSSc)
- 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 patients[21] 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: » corticosteroids: o intravenous o oral » cytotoxic drugs, such as cyclophosphamide » disease-modifying antirheumatic drugs (DMARDs): o biological DMARDs (bDMARDs): ▪ IL-6-cell targeting therapies ▪ Janus kinase inhibitors ▪ tumour necrosis factor (TNF)-targeting o conventional DMARDs (cDMARDs): ▪ cyclosporine ▪ methotrexate ▪ mycophenolate mofetil » other treatment strategies: o antifibrotic agents o antihypertensive agents o anti-infective prophylaxis o haemopoetic stem cell transplantation o lipid-lowering agents o vasodilatory agents
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.	**Clinical assessment and disease scoring tools** • Diagnostic criteria and disease activity measurement **Investigations** • Assessment of: » cardiac involvement: o echocardiogram o electrocardiogram (ECG) » gastrointestinal involvement, such as barium swallow » respiratory involvement: o high-resolution CT o 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 • 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

- La
- RNP
- Ro
- Scl-70
- Sm

» scleroderma-associated antibodies, including:
- myositis specific antibodies
- 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

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):
    - o classic PAN
    - o cutaneous PAN
    - o DADA2 deficiency
- Small vessel vasculitis:
  - » antineutrophil cytoplasmic antibodies (ANCA) associated:
    - o eosinophilic granulomatosis with polyangiitis
    - o granulomatosis with polyangiitis
    - o microscopic polyangiitis
  - » non-ANCA associated:
    - o hypocomplementaemic urticarial vasculitis
    - o 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 patients[22] 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.	**Presentations** • As above, plus: » hearing loss » oral or genital ulceration » vestibular dysfunction **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: o intravenous o intra-articular o oral » cytotoxic drugs » intravenous immunoglobulin » disease-modifying antirheumatic drugs (DMARDs): o biological DMARDs, such as inhibitors of: ▪ B cells ▪ interleukin-1 ▪ interleukin-6 ▪ tumour necrosis factor α o conventional DMARDs, such as azathioprine o targeted synthetic DMARDs, such as Janus kinase inhibitors » other treatment strategies, including: o antihypertensive agents o antiplatelet agents o anti-infective prophylaxis o lipid-lowering agents • Induction versus maintenance versus refractory therapies
INVESTIGATIONS, PROCEDURES, AND CLINICAL ASSESSMENT TOOLS Advanced Trainees will know the scientific foundation of each investigation and procedure, including	**Clinical assessment and disease scoring tools** • Diagnostic criteria classification by: » 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

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
    - conventional
    - medical radiation technologists (MRT)
  - cross-sectional imaging, such as of:
    - central nervous system (CNS)
    - lungs
    - sinuses
  - radionucleotide studies
  - ultrasound
  - x-ray
- 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)
    - proteinase-3 (PR-3)
  - 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

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

Multidisciplinary team considerations

- Collaboration with other teams to make accurate diagnoses:
  - infectious diseases
  - 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

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 patients[23] 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.

Presentations

- As above

Conditions

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

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
- 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
    - o tumour necrosis factor (TNF)
  - » colchicine
  - » corticosteroids
  - » Janus kinase inhibitors
  - » non-steroidal anti-inflammatory drugs

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

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

obtain informed consent where applicable.	• Imaging, such as: » angiography, including: o conventional o CT o MRI » 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 will identify important specialty-specific issues and the impact of these on diagnosis and management and integrate these into care.	• 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

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:
    - o Osgood–Schlatter disease
    - o Sever's disease
  - » hips:
    - o Perthes disease
    - o 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 patients[24] 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: o Hoffa pad impingement syndrome o patellofemoral pain » osteochondritis dissecans lesions » pes planus » spine: o discitis o scoliosis o spondylosis / spondylolisthesis	
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** • 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 Advanced Trainees will identify important specialty-specific issues and the impact of these on diagnosis and management and integrate these into care.	• 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