NEW CURRICULA

Curriculum standards

Advanced Training in Endocrinology (Adult Internal Medicine)

May 2024

RACP Specialists. Together

About this document

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

This document outlines the curriculum standards for Advanced Training in Endocrinology (AM) for trainees and supervisors. The curriculum standards should be used in conjunction with the Advanced Training in Endocrinology (AM) LTA programs.

The new curriculum was approved by the College Education Committee in May 2024. Please refer to the College website for details on its implementation.

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.

Specialty overview

Endocrinology is the study of hormones and hormone-producing tissues. The specialty of clinical endocrinology encompasses the diagnosis and management of disorders of the endocrine system. Hormones from the body's major gland systems (pituitary, thyroid, parathyroid, pancreas, adrenal, and gonads) regulate all body systems and bodily processes, including growth and development, bone, metabolism, electrolytes, blood pressure, reproduction, vascular disease, bowel function, and neurological processes.

Endocrinologists assess, diagnose, and manage endocrine disorders resulting from an excess or deficiency of hormone action, or neoplasms of endocrine organs; perform diagnostic and laboratory analyses, provide treatment, and conduct basic and applied research in a wide range of humoral and metabolic conditions. Communication skills are paramount in the management of people of all ages and in the care of those with chronic disease. Endocrinologists:

- **diagnose and treat disorders of the endocrine system**. The spectrum of endocrine disorders includes diabetes type I, 2, and others, their complications, and other disorders of glucose metabolism; thyroid, pituitary, and adrenal disease; menopause, gonadal disorders, and infertility; neuroendocrine conditions; benign and malignant glandular tumours; disorders of growth; obesity; genetic and congenital glandular dysfunction; lipid and nutritional abnormalities; osteoporosis and metabolic bone disease.

- **possess specialist investigation and laboratory skills**. Endocrinologists need to be able to interpret biochemical tests relating to endocrine diagnosis and have a good understanding of the laboratory methods underlying these analyses and their limitations. Consequently, experience in clinical or laboratory research and in diagnostic endocrine laboratory medicine is a strongly recommended component of training.

- **are responsible for long term patient management.** Endocrine conditions are diverse in their requirement for specialist medical advice and in most cases their impact is lifelong. Disorders may present across the age spectrum. Many pose a diagnostic challenge, and in some the application of new or partially effective treatment requires fine judgement. Endocrine disorders affect many body systems and call for expertise in interpretation of clinical biochemistry and immunochemistry, including dynamic tests, genetic testing and counselling, and a strong therapeutic partnership between the endocrinologist and patient and/or their family. Multidisciplinary team care is integral to treatment decisions for diabetes, thyroid cancer, pituitary disease, neuroendocrine tumours, and complex bone disease.

- **provide life-stage endocrine care.** Endocrinologists have expertise in managing people with hormone disorders to progress through puberty, achieve optimal preconception preparation, manage in pregnancy and lactation, menopause, and aging. They can provide gender-affirming treatment and assess and reduce cardiovascular risk in people according to age and comorbidities.

- **provide lifestyle management advice** for disorders such as obesity/overweight, polycystic ovarian syndrome, diabetes, osteoporosis prevention and subfertility.
- **manage medications.** Endocrinologists have expertise in the management of complex medications and specialist knowledge of medication delivery devices/technology.

- **deliver endocrine care.** Endocrinology services are pivotal to a broad spectrum of health care. Endocrinologists provide consultation services to hospital inpatients, as well as dedicated inpatient endocrine care. Most endocrine care is delivered in outpatient settings, in hospital clinics, community settings, and private practice. Endocrine care is well suited to incorporation of telehealth and other digital health technologies.

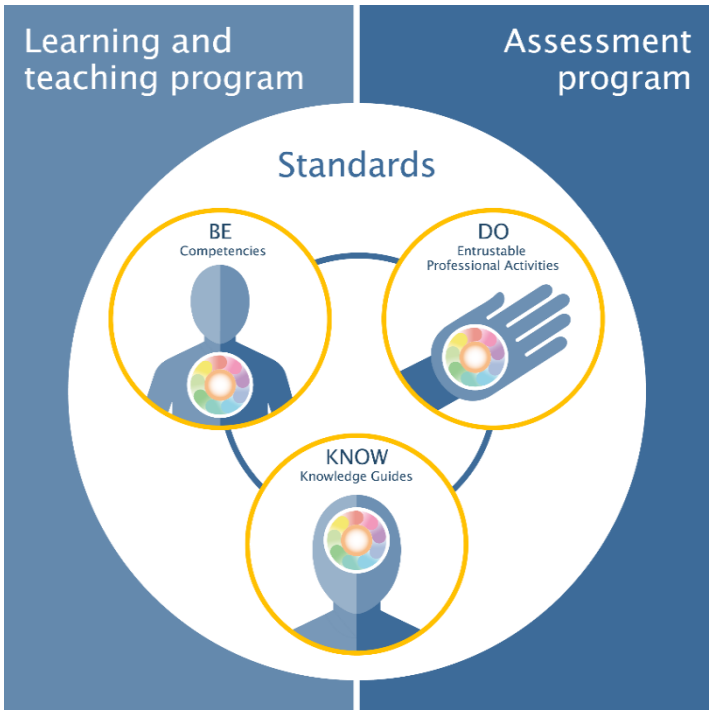
Endocrinologists are experts in the treatment and management of disorders of the endocrine system with a focus on communication, problem-solving, long-term care of chronic conditions, and evidence-based practice and research. Skills include:

- **communication and interpersonal skills.** Endocrinologists have an important role in taking complete medical histories, determining differential diagnoses, explaining investigations and treatment options, which may include advice on lifestyle, nutrition, and medications, and preventative treatments and measures. Endocrinologists work with multidisciplinary teams including, but not limited to, diabetes educators, dietitians, podiatrists, psychologists, social workers, genetic counsellors, surgeons as well as other medical specialists in multidisciplinary teams. Communication with referring general practitioners is paramount.

- **attention to detail and problem-solving skills.** Endocrinologists must carefully analyse medical histories, physical examinations, and test results, to make accurate diagnoses.

- **research.** Conducting research and studies on the endocrine system and its diseases, disorders, and conditions to review quality of existing treatment techniques and to develop new treatment techniques can be an important component of a career in endocrinology. Developing new models of care for chronic disease and benchmarking care outcomes is important to improve outcomes for people with chronic disease. Remaining up to date on current discoveries, developments, trends, research, and technology is necessary to deliver best endocrine care.

Advanced Training curricula standards



The **RACP curriculum model** is made up of curricula standards supported by learning, teaching, and assessment programs.

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

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

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

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

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

- **Knowledge guides** outline the expected baseline knowledge of trainees.

Common curricula standards

The renewed curricula for Advanced Training will consist of a mix of program-specific content and content that is common across Advanced Training programs.

- **Competencies** will be common across Advanced Training programs.
- **Entrustable Professional Activities (EPAs)** will contain a mix of content that is common and content that is program-specific.
- **Knowledge Guides** will be program-specific, although content may be shared between complementary programs.

Professional Practice Framework

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

Learning, teaching, and assessment structure

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

Advanced Training learning, teaching, and assessment structure

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

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

The Advanced Training program may be started once the prospective trainee has completed the entry requirements. This includes completion of Basic Physician Training for Divisional Advanced Training programs.

Curriculum standards

Competencies

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

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

Competencies will be common across training programs.

Medical expertise

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

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

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

Diagnosis and management: Develop diagnostic and management plans that integrate an understanding of individual patient circumstances, including psychosocial factors and specific vulnerabilities, epidemiology, and population health factors in partnership with patients, families, or carers[1], and in collaboration with the health care team.

[2] 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[3] 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 outline the essential work tasks trainees need to be able to perform in the workplace.

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

EPA 1: Team leadership

Theme	Team leadership	AT-EPA-01
Title	**Lead a team of health professionals**	
Description	This activity requires the ability to: • prioritise workload • manage multiple concurrent tasks • articulate individual responsibilities, 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 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 • provide coordinated and quality health care for populations or patients as a member of a multidisciplinary team	• 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
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

[4] 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 • engage other multidisciplinary team members in care of patients with appropriate communication of needs	
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 reflections • actively seek feedback from supervisors and colleagues on their 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
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 • engage in collaborative and ethical research practice with all stakeholders and acknowledge own and others contributions to research	• understand 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 • explain that routine care will continue if the participant decides not to participate in research
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 • effectively consult with stakeholders, achieving a balance of alternative views • acknowledge personal conflicts of interest and unconscious bias • act collaboratively to resolve behavioural incidents and conflicts such as harassment and bullying	• 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 • 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 healthcare • 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	• communicate with stakeholders within the organisation about healthcare delivery • understand methods used to allocate resources to provide high-quality care • promote the development and use of organisational policies and procedures

	• remove self-interest from solutions to health advocacy issues

EPA 2: Supervision and teaching

Theme	Supervision and teaching	AT-EPA-02
Title	**Supervise and teach professional 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 The trainee will:	**Requires some supervision** Possible behaviours of a trainee who needs some supervision to perform this activity 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 the learner to consider the rationale and appropriateness of investigation and management options	• teach learners using basic knowledge and skills
Communication	• listen and convey information clearly and considerately • establish rapport and demonstrate respect for junior colleagues, medical students, and other health professionals • communicate effectively when teaching, assessing, and appraising learners • actively encourage a collaborative and safe learning environment with learners and other health professionals • encourage learners to tailor communication as appropriate for different patients, such as younger or older people, and different populations • support learners to deliver clear, concise, and relevant information in both verbal and written communication	• demonstrate accessible, supportive, and compassionate behaviour • observe learners to identify and reduce risk and improve health outcomes

Quality and safety	• support learners to deliver quality care while maintaining their own wellbeing • apply lessons learnt 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, including the involvement of senior team members if necessary	• observe learners to reduce risks and improve health outcomes • identify and participate in new learning experiences
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 • 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 • participate in activities that are aligned to learning goals • seek feedback and reflect on own teaching by developing goals and strategies to improve
Research	• clarify junior colleagues' research project goals and requirements, providing feedback regarding the merits or challenges of proposed research • support learners to find forums to present research projects • encourage and guide learners to seek out relevant research to support practice • ensure that the research projects planned are feasible and of a suitable standard	• guide learners with respect to the choice of research projects • explain that routine care will continue if the participant decides not to participate in research
Cultural safety	• role model a culturally appropriate approach to teaching	• function effectively and respectfully when working with and teaching with people from different cultural backgrounds

	• encourage learners to seek out opportunities to develop and improve their own cultural safety • encourage learners to adopt culturally appropriate considerations in the care of Māori and Aboriginal and Torres Strait Islander peoples • consider social, cultural, ethical, and religious values and beliefs in teaching and learning	
Ethics and professional behaviour	• apply principles of ethical practice to teaching scenarios • act as a role model to promote professional responsibility and ethical behaviour 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 whereby the learner feels part of the team • help shape organisational culture to prioritise quality and work safety through openness, honesty, shared learning, and continued improvement	• demonstrate the principles and practice of professionalism and leadership in health care • participate in mentor programs, career advice, and general counselling
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	• integrate some public health principals into teaching and practice

EPA 3: Quality improvement

Theme	Quality improvement	AT-EPA-03
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 • apply best practice guidelines • audit clinical outcomes and implement clinical guidelines where applicable • contribute to the development of policies and protocols designed to protect patients and enhance healthcare • monitor one's own practice and develop individual improvement plans. • participate in morbidity and mortality meetings and review systems to prevent adverse patient outcomes.	
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	• regularly review patients • evaluate practice to ensure it aligns with available evidence and guidelines • recognise the complex care needs of patients living with chronic endocrine conditions and proactively institute care planning to mitigate acute deterioration • 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	• 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 • regularly monitor personal professional performance
Communication	• support patients to share decision making about their own health care, to the extent they choose • support patients to have access to, and use, easy-to-understand, high-quality information about health care • direct patients on processes for accessing their own health	• demonstrate awareness of the evidence for consumer engagement and its contribution to quality improvement in healthcare

	information, as well as complaint and feedback systems • discuss with patients any safety and quality concerns they have relating to their care • assist patients to understand about hospital open disclosure policy • implement the organisation's open disclosure policy	• apply knowledge of how health literacy might affect the way patients or populations gain access to, understand, and use health information
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 and preventative action plans • participate in systems for surveillance and monitoring of quality care, 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 healthcare	• demonstrate understanding of a systematic approach to improving the quality and safety of healthcare • demonstrate understanding of the principles of organisational quality and safety activities, including root cause analyses and corrective and preventative action plans
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 • maintain Continuing Professional Development obligations as per regulatory requirements	• 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	• apply the principles underlying ethical 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 and understand the processes for obtaining this approval within an organisation	• understand 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 • explain that routine care will continue if the participant decides not to participate in research

	• communicate to patient that they will not be treated differently should they opt not to participate in research • ensure research adherence to the local and national codes for the responsible conduct of research[5]	
Cultural safety	• communicate effectively with patients from diverse backgrounds, including through effective collaboration with interpreters • undertake professional development opportunities that address the impact of cultural bias on health outcomes	• communicate effectively with patients from 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 of care	• 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 and promote interdisciplinary programs of education to lower patients' risk of harm • actively involve clinical pharmacists 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	• 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

[5] Trainees can refer to the National Health and Medical Research Council (NHMRC) code and/or Australian clinical trials code.

	• take part in the design and implementation of the organisational systems for: » defining the scope of clinical practice » performance monitoring and management » clinical, and safety and quality education and training

EPA 4: Clinical assessment and management

Theme	Clinical assessment and management	AT-EPA-04
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 • obtain patient histories • examine patients • synthesise findings to develop provisional and differential diagnoses • discuss findings with patients, families and/or carers • generate an investigation or management plan • 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	• assess, investigate, manage, and treat common and less common endocrine presentations and syndromes • elicit an organised, and problem-focused medical history considering physical, psychosocial, and risk factors • perform a full physical examination to establish the nature and extent of problems • synthesise and interpret findings from the history and examination to devise the most likely provisional diagnoses with a list of reasonable differentials • arrange appropriate investigations as needed for diagnostic work ups • assess the severity of problems, the likelihood of complications, and clinical outcomes • develop evidence-based management plans based on relevant information, consistent with current guidelines • balance benefit and harm of any investigations or interventions tailored to the patients' circumstances • identify areas where patients may require further support	• take patient-centred histories, considering psychosocial factors • perform relevant physical examinations • recognise and correctly interpret abnormal findings • synthesise pertinent information to direct clinical encounters and diagnostic categories • develop appropriate management plans

	• consider age, chronic disease status, lifestyle factors, allergies, potential drug interactions or adverse events, and patient preference prior to prescribing new medications • plan follow up and monitoring at appropriate intervals	
Communication	• demonstrate active listening, addressing patients' concerns, with adequate opportunity to ask questions • provide information to patients and their family or carers to enable fully informed decision-making for various diagnostic, therapeutic, and management options • discuss sensitive issues related to fertility, including infertility and pregnancy risks enabling patients to make informed choices • communicate clearly, effectively, respectfully, and promptly with other health professionals involved in patients' care, including in written correspondence, medical records and verbal communications	• anticipate, read, and respond to verbal and non-verbal cues • develop active listening skills • communicate patients' situations to colleagues, including senior clinicians • document clinical encounters to convey clinical reasoning and the rationale for decisions • arrange investigations, providing accurate and informative referrals, liaising with other services where appropriate
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 • outline risk mitigation strategies for patients living with chronic endocrine conditions who are at risk of acute deterioration	• 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	• identify and set defined objectives for clinical teaching encounters • solicit feedback on mutually agreed goals and demonstrate self-reflection towards own professional development • obtain informed consent before involving patients in teaching activities	• need assistance to set goals and clear objectives for self-learning • engage in self-reflection, requiring encouragement to do this more frequently • deliver teaching considering learners' level of training

	• turn clinical activities into an opportunity to teach, appropriate to the setting	
Research	• use appropriate search strategies to find, compile, analyse, interpret, and evaluate information relevant to the research subject • use relevant resources to assist with resolving clinical problems, including practice guidelines and current literature	• 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 • explain that routine care will continue if the participant decides not to participate in research
Cultural safety	• use plain-language patient education materials, and demonstrate cultural and linguistical sensitivity • demonstrate effective and culturally safe communication and care for Māori and Aboriginal and Torres Strait Islander peoples, 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 • acknowledge patients' beliefs and values, and demonstrate some understanding of how these might impact on health	• display respect for patients' cultures, and attentiveness to social determinants of health • demonstrate an appreciation of the sensitivities for at least the most prevalent cultures in society • 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 understanding of the ethical implications of pharmaceutical industry marketing and funded research • not advance personal interest or professional agendas at the expense of patient or social welfare	• demonstrate professional conduct, honesty, and integrity • consider patients' decision-making capacity • identify patients' preferences regarding management and the role of families in decision making • follow organisational policies on pharmaceutical representative visits and drug marketing
Judgement and decision making	• demonstrate applied knowledge and experience to identify patients' problems, making logical, rational decisions, to achieve positive outcomes for patients • use a holistic approach to health considering comorbidity, uncertainty, and risk	• demonstrate clinical reasoning by gathering focused information relevant to patients' care • recognise personal limitations and seek help in an appropriate way when required

	• use the best available evidence for the most effective therapies and interventions to ensure quality care	
Leadership, management, and teamwork	• work effectively as a member of multidisciplinary teams to achieve the best health outcome 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 health care 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 available resources	• identify and navigate components of the healthcare system relevant to patients' care • identify and access relevant community resources to support patient care

EPA 5: Management of transitions in care

Theme	Management of transitions in care	AT-EPA-05
Title	**Manage the transition of patient care between health professionals, providers, and contexts**	
Description	This activity requires the ability to: • manage transition of patient care to ensure the optimal continuation of care between providers • identify the appropriate health care providers and other stakeholders with whom to share patient information • exchange pertinent, contextually appropriate, and relevant patient information • 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	**Requires some supervision** Possible behaviours of a trainee who needs some supervision to perform this activity
	The trainee will:	The trainee may:
Medical expertise	• facilitate an optimal age -appropriate transition of care for patients • identify and manage key risks for patients during transition • anticipate possible changes in patients' conditions, and provide recommendations on how to manage them • deliver age-appropriate care and adapt care in recognition of the increased role for the young person in managing their chronic condition • assess patients' health literacy and developmental readiness • assess adherence to treatment and monitoring plans • outline the key components of a transition program and the differences between the cultures of paediatric and adult care services, including the role of the adult physician • evaluate environmental and lifestyle health risks, and advocate for healthy lifestyle choices • anticipate, prevent, and manage changes in health status at the time of transition • adapt transition to meet individual patients' needs	• understand the details of patients' conditions, illness severity, and potential emerging issues • provide accurate summaries of patients' information with accurate identification of problems or issues • recognise the importance of maintaining continuity of care and prevention of loss to follow up at the time of transition • assess psychosocial issues that may affect health and/or access to services • identify the ways in which disease may impact on patients' lifestyles, such as contraception, pregnancies, employment, sport/leisure activities, and smoking • establish plans for ongoing care that include monitoring health status and managing adherence

	• identify youth-focused adult services and local transition coordinators/facilitators	
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 • include appropriate transfer of care information from other multidisciplinary team members • initiate and maintain verbal or written communication with other health professionals involved in patients' care • communicate with patients, families and/or carers about transition of care, and engage and support these parties in decision making	• identify local transition coordinator or facilitator • 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 an effective transition between settings, and continuity and quality of care
Quality and safety	• identify patients at risk of poor transition of care, and mitigate this risk through identification of support services • 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 of the medicolegal context of written communications	• ensure that handover is complete, or work to mitigate risks if the handover was 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 • evaluate patients' understanding of their health condition and ability to perform self-care at all transition points	• take opportunities to teach junior colleagues during handover, as necessary
Cultural safety	• communicate with careful consideration to health literacy, language barriers, and culture about patient preferences, and whether they are realistic and possible, respecting patient choices • recognise the timing, location, privacy, and appropriateness of sharing information with patients and their families or carers	• include relevant information regarding patients' cultural or ethnic background in handovers, and whether an interpreter is required • identify and link patients with culturally appropriate services to assist with transition in care

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 • interacts in a collegiate and collaborative way with professional colleagues during transitions of care	• maintain respect for patients, families, carers, 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 and consider impact of age and comorbidities on types of supports needed	• 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 opportunities for patients' engagement and participation when appropriate	• recognise factors that impact on 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 or transfer of care to new health care providers	• factor transport issues, costs to patients and continued access to appropriate care into decisions to transfer patients to other settings

EPA 6: Acute care

Theme	Acute care	AT-EPA-06
Title	**Manage the early care of acutely unwell patients**	
Description	This activity requires the ability to: • assess seriously unwell or injured patients, and initiate evidence-based, safe 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.	
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	• recognise immediate life-threatening conditions and deteriorating and critically unwell patients, and respond appropriately, including escalation to high acuity care and administration of appropriate initial treatment • 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 • identify possible diagnoses that may threaten patient safety and investigate appropriately • 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 • use hospital protocols for acute endocrine emergencies and be able to explain clearly when variations from these are necessary	• recognise seriously unwell patients requiring immediate care • apply basic life support as indicated • understand 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 • manage most acute conditions independently with awareness of one's own limitations, escalating to consultants as appropriate

	• develop plans of multidisciplinary treatment, rehabilitation, and secondary prevention following acute events • optimise medical management before, during, and after operations, procedures, or hospital admissions	
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 • relay the patient presentation, care progress and management plan to colleagues factually, clearly, succinctly and with prioritised clinical information • facilitate early communication with patients, families, and health care 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 level of understanding of agreed care decisions • provide clear and effective discharge summaries with recommendations for ongoing care	• demonstrate communication skills to sufficiently support the function of multidisciplinary teams • if possible, determine patients' understanding of their diseases 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	• evaluate the quality of processes through well-designed audits • recognise the risks and benefits of all 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

	• coordinate and encourage innovation, and objectively evaluate improvement initiatives for outcomes and sustainability • document treatment given without consent in an emergency according to local guidelines	
Teaching and learning	• demonstrate effective supervision skills and teaching methods which are adapted to the context of the training, including being informed of the RACP curriculum and assisting with assessments as required • 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 wards
Research	• select studies based on optimal trial design, freedom from bias, and precision of measurement, and apply to clinical practice as appropriate • 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 • explain that routine care will continue if the participant decides not to participate in research
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 Māori and Aboriginal and Torres Strait Islander peoples into patients' management • consider cultural, ethical, and religious values and beliefs in leading multidisciplinary teams	• practise cultural competency appropriate for the community served • proactively identify barriers to access to healthcare
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	• 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

	deemed futile, directing to other care as appropriate • 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, and health professionals in the community with shared patients • manage the transition of acute medical patients through their hospital journeys • lead a team by providing engagement while maintaining a focus on outcomes • manage and initiate open disclosure as necessary	• collaborate with and engage other team members, based on their roles and skills • ensure appropriate multidisciplinary assessment and management • encourage 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 resources • collaborate with emergency medicine staff and other colleagues to develop policies and protocols for the investigation and management of common acute medical problems	• understand the systems for the escalation of care for deteriorating patients • understand the role of clinician leadership and advocacy in appraising and redesigning systems of care that lead to better patient outcomes

EPA 7: Longitudinal care

Theme	Longitudinal care	AT-EPA-07
Title	**Manage and coordinate the 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, carers, and/or families • manage chronic and advanced conditions, complications, disabilities, and comorbidities • collaborate with other health care providers • ensure continuity of care • facilitate patients' and/or families' and/or carers' 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	• regularly assess 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	• 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 the history, examination, and management plan in a way that is accurate and sufficient as a member of multidisciplinary teams
Communication	• encourage patients' self-management through education to take greater responsibility for their care, and support problem solving • work in partnership with patients, and motivate them to adhere to agreed care plans • 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 • encourage patients' access to self-monitoring devices and assistive technologies
Quality and safety	• use innovative models of chronic disease care using telehealth and digitally integrated support services	• participate in continuous quality improvement processes and clinical audits on chronic disease management • identify activities that may improve patients' quality of life

	• 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 to become more independent • initiate and participate in quality improvement processes impacting on patients' abilities to undertake normal activities of daily living	
Teaching and learning	• contribute to the development of clinical pathways for chronic diseases management based on current clinical guidelines	• use clinical practice guidelines for chronic diseases management • educate patients to recognise and monitor their symptoms, and undertake strategies to assist their recovery • educate patients regarding sick day management plans for common and important endocrine conditions
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 • prepare research protocols to evaluate interventions and outcomes for chronic disease	• search literature using Problem/Intervention/Comparison/ Outcome (PICO) format • recognise appropriate use and limitations of review articles • explain that routine care will continue if the participant decides not to participate in research
Cultural safety	• encourage patients from diverse backgrounds to join local networks to receive the support needed for long-term self-management	• 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 • use consent processes for the release and exchange of health information • assess patients' decision-making capacity/competency and appropriately identify and use alternative decision makers	• confidentially share information between relevant service providers • acknowledge and respect the contribution of other health professionals involved in patients' care • seek consent from patients to discuss their care at multidisciplinary team meetings
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 the patients' care journey • use a multidisciplinary approach across services to manage patients with chronic diseases and disabilities • develop collaborative relationships with patients, families, carers, 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 healthcare delivery to patients with chronic diseases and disabilities • participate in government initiatives for chronic diseases management to reduce hospital admissions and hospital related complications, and improve patients' quality of life • assist patients to access initiatives and services for patients with chronic diseases and disabilities	• demonstrate awareness of government initiatives and services available for patients with chronic diseases and disabilities, and display knowledge of how to access them

EPA 8: Communication with patients

Theme	Communication with patients	AT-EPA-08
Title	**Discuss 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 a mutually agreed management plan • verify patient, family or carer understanding of information conveyed • develop and implement a plan for ensuring actions occur • ensure the conversation is 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, investigations, and management recommendations • give patients adequate opportunity to question and/or decline 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 an appropriate communication strategy and modalities for communication, such as written information, emails, face-to-face, or phone calls • elicit patients' views, concerns, and preferences, promoting rapport • provide information to patients in plain language, avoiding jargon, acronyms, and complex medical terms	• select appropriate modes of communication • engage patients in discussions, avoiding the use of jargon • check patients' understanding of information

	• 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 • set clear professional boundaries for communication with patients	• adapt communication style in response to patients' age, 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 • recognise and take precautions where patients may be vulnerable, such as issues of child protection, family violence, self-harm, or elder abuse • participate in processes to manage patient complaints and participate in open disclosure discussions with patients	• inform patients of the material risks associated with the proposed management plan • treat information about patients as confidential • consider young people's capacity for decision making and consent
Teaching and learning	• discuss the aetiology of diseases and explain the purpose, nature, and extent of the assessments to be conducted • obtain informed consent or other valid authority before involving patients in teaching • encourage questions and observations from junior staff and students to facilitate open communication and teaching • provide constructive feedback to junior colleagues to contribute to improvements in individuals' skills • engage with community organisations and public health channels to promote preventative and public health strategies in clear and relevant language	• respond appropriately to information sourced by patients, and to patients' knowledge regarding their condition

	• recognise the significance of role-modelling all aspects of the work of a physician in interactions with junior staff and medical students, for their learning	
Research	• provide information to patients that is based on guidelines issued by the National Health and Medical 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	• refer to evidence-based clinical guidelines • demonstrate an understanding of the limitations of the evidence and the challenges of applying research in daily practice • explain that routine care will continue if the participant decides not to participate in research
Cultural safety	• demonstrate effective and culturally safe communication with Māori and Aboriginal and Torres Strait Islander peoples • effectively communicate 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 • respect patients' cultural views and incorporate these when developing management plans where possible • demonstrate effective and culturally competent communication with people of diverse gender identities (including use of correct pronouns and preferred name)	• identify when to use interpreters • allow enough time for communication across linguistic and cultural barriers
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 and, when relevant, their families or carers, in caring for themselves and managing their health • demonstrate respectful professional relationships with patients • prioritise honesty, patients' welfare, and community benefit above self-interest	• 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 confidentiality and privacy

	• develop a high standard of personal conduct, consistent with professional and community expectations • support patients' rights to seek second opinions	• 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, families and carers • 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 where 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 • collaborate with public health organisations to promote preventative health information	• communicate with and involve other health professionals as appropriate

EPA 9: Prescribing

Theme	Prescribing	AT-EPA-09
Title	**Prescribe 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 and families or carers about the benefits and risks of proposed therapies • facilitate patient understanding of medication effects and side effects • empower patients to self-adjust medication doses and timing, where appropriate • understand differences between drug delivery devices and assist patient decision-making • educate regarding use of drug delivery devices and optimising functionality in different settings • 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 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 the patients' disorders requiring pharmacotherapy • consider non-pharmacologic therapies • consider age, chronic disease status, lifestyle factors, allergies, potential drug interactions, and patient preference prior to prescribing a new medication • create a framework to enable patients to make appropriate adjustments to prescribed medicines in response to situations, including intercurrent illness • initiate devices for drug delivery and understand the differences between drug delivery devices, guiding patients in appropriate choice of device for their needs	• be aware of potential side-effects and practical prescription points, such as medication compatibility and monitoring in response to therapies • select medicines for common endocrine conditions appropriately, safely, and accurately • review the clinical and biochemical response to prescribed medicines, and advise appropriate dose adjustments • demonstrate understanding of the rationale, risks, benefits, side effects, contraindications, dosage, and drug interactions • identify and manage adverse events

	• understand the differences between continuous glucose monitoring devices and advise patients in choice of device for their needs • consider the patients' fertility aspirations and plans when prescribing ongoing and new medications • modify patients' medications as appropriate when planning for pregnancy and during pregnancy • modify patients' medications perioperatively • prescribe therapeutic adjustments based on adherence, using a patient-centred approach to prescribing, tailored to patients' biopsychosocial needs • plan follow-up and monitoring	
Communication	• discuss and evaluate the risks, benefits, and rationale of treatment options, making decisions in partnership with patients • where relevant, discuss the impact of medication on fertility and pregnancy and, where applicable, dosage changes in pregnancy • write clear and legible prescriptions in plain language, and include specific indications for the anticipated duration of therapy • educate patients about the intended use, expected outcomes, and potential side effects for each prescribed medication, addressing the common, rare, and serious 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 • educate patients on correct self-administration of medications when using specialised devices • ensure patients' understanding by repeating back pertinent information, such as when to return for monitoring and whether therapy continues after this single prescription • identify patients' concerns and expectations, and explain how medicines might affect their everyday lives	• discuss and explain the rationale for treatment options with patients, families or carers • 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 • ensure time of medication administration is accurate for all medications, particularly for those that are time sensitive • seek further advice from experienced clinicians or pharmacists when appropriate

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 • encourage the use of medication aides to facilitate adherence, where applicable • 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, reduce adverse events and polypharmacy leading to a prescribing cascade • report suspected adverse events to the Advisory Committee on Medicines (Australia) or Centre for Adverse Reactions Monitoring (Aotearoa New Zealand), and record it in patients' medical records • minimise harmful events associated with variable dose prescribed drugs in hospital	• check medication doses before prescribing • check that the administration timing for prescribed medications is accurately and clearly documented • monitor side effects of medicines prescribed • identify medication errors and institute appropriate measures • use manual and/or electronic prescribing systems safely • rationalise medicines to avoid polypharmacy
Teaching and learning	• use continuously updated software for computers and electronic prescribing programs • use and analyse centralised reporting systems for continuous glucose monitoring to improve patient care outcomes • interpret and apply the different reporting software for drug delivery devices to patient care • 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 • undertake continuing professional development to maintain up-to-date understanding of new medications and the evidence for their use • undertake continuing professional development to maintain up to date understanding of drug delivery devices and their linkage to continuous glucose monitoring, and the evidence for their use • 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	• make therapeutic decisions according to the best evidence • recognise where evidence is limited, compromised, or subject to bias or conflict of interest

	• use sources of independent information about medicines that provide accurate summaries of the available evidence on new medicines	• explain that routine care will continue if the participant decides not to participate in research
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 • offer approved patient information resources in languages other than English, where these are available	• 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: » how to take it » potential side effects » what it 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 • prescribe according to best evidence based practice and in partnership with the patient, and without undue influence from pharmaceutical industry interactions	• 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 • consider fertility and, where applicable, pregnancy in choice of medicines • choose suitable medicines only if medicines are considered necessary and will benefit patients	• recognise personal limitations and seek help in an appropriate way when required • consider the following factors for all medicines: » cost to patients, families, and the community » funding and regulatory considerations » generic versus brand medicines » interactions » precautions and contraindications » risk-benefit analysis

	• 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	
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 • advocate for patient access to medications that would be of benefit to their condition from evidence based clinical assessment and judgement when necessary	• prescribe in accordance with the organisational policy • prescribe in accordance with the Pharmaceutical Benefit Scheme

EPA 10: Procedures

Theme	Procedures	AT-EPA-10
Title	**Plan, prepare for, perform, and provide aftercare for important practical procedures**	
Description	This activity requires the ability to: • select appropriate procedures in partnership with patients, their families or carers • 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, and reports • communicate the outcome of procedures 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 The trainee will:	**Requires some supervision** Possible behaviours of a trainee who needs some supervision to perform this activity The trainee may:
Medical expertise	• select procedures by assessing patient-specific factors, risks, benefits, and alternatives • ensure team members are aware of all allergies/adverse reactions identified, and take precautions to avoid allergies/adverse reactions during procedures • ensure patients understand any pre-procedure changes to their usual treatment • confirm the correct position/site/side/level on patients for planned procedures (such as, hormone implants or injections) • recognise and effectively manage 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 procedural review of patients

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, families and carers, 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', families' or carers' 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, patients, families, and carers prior to, during, and after procedures • ensure team members are confident and competent in their assigned roles	• explain the process of procedures to help patients, families and carers to understand the risks and benefits of a procedure • communicate with members of procedural teams so all team members understand who each member is • discuss post-procedural care with patients, families and carers • 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 match procedures to be performed • identify, document, and appropriately notify of any adverse events or equipment malfunction	• provide information in a manner so that patients, families, and carers are fully informed when consenting to any procedures
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 to develop new skills • actively seek feedback 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	• 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 risk/benefit to prioritise patients on waiting lists • 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
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 organisational guidelines and policies

EPA 11: Investigations

Theme	Investigations	AT-EPA-11
Title	**Select, organise, and interpret investigations**	
Description	This activity requires the ability to: • select, plan, and use evidence-based clinically appropriate investigations • prioritise patients receiving investigations (if there is a waiting list) • evaluate the anticipated value of the investigation and only order investigations with appreciable benefit, e.g. to change management • work in partnership with patients and their families or carers to facilitate choices that are right for them • manage patients undergoing investigations to minimise risks and maximise diagnostic yield • interpret the results and outcomes of investigations • communicate the outcome of investigations to patients and discuss the next steps.	

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 in the context of comprehensive clinical assessments • understand the accuracy, limitations and indications of endocrine investigations and remain abreast of developments and local expertise in the various domains of endocrine testing, including imaging, biochemistry, dynamic testing and invasive investigations • provide appropriate care for patients undergoing dynamic and invasive endocrine investigations, to minimise risk and maximise diagnostic yield • assess patients' concerns, and determine the need for specific investigations 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	• provide rationale for investigations • understand the significance of abnormal test results and act on these • consider patient factors and comorbidities • consider age and gender specific reference ranges where relevant • identify contraindications for, and complications of, dynamic and invasive endocrine investigations

	• recognise investigation results that may be erroneous or misleading and understand the pathways for correcting these errors if required, • liaise with colleagues and multidisciplinary teams to interpret findings in the context of specific patients when necessary	
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 agree to proceed with proposed investigations • 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 the need for 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	• 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
Quality and safety	• identify adverse outcomes that may result from a proposed investigation, focusing on patients' individual situations • participate in clinical practice audits to ensure best available evidence-based practice is offered • where appropriate, collaborate with colleagues and multidisciplinary teams to ensure that investigations are accurate and of clinical value	• 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 knowledge of test sensitivity/specificity and relevance for diagnoses and screening • teach junior staff about evidence-based use of investigations	• 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 • understand 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, and that patients may withdraw consent at any time	• refer to evidence-based clinical guidelines • consult current research on investigations • demonstrate adherence to the principles of ethical research including consent • explain that routine care will continue if the participant decides not to participate in research
Cultural safety	• understand patients' views and preferences about any proposed investigation (including handling, storage, and disposal of test samples) 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 (except for emergencies) • when necessary, discuss with patients how decisions will be made once an investigation has started and the patient is not able to participate in decision making • respect patients' decisions to refuse investigations, even if their decisions may not be evidence-based or in their best interests medically or evidenced-based • advise patients of the potential costs of investigations, which patients 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 and obtain documented informed consent from patients prior to proceeding with such investigations • comply with consent processes, privacy law, and professional guidelines to maintain patient confidentiality	• 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 • 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 • liaise with colleagues and other members of multidisciplinary teams, providing clinical context to investigation outcomes, when necessary • adjust the investigative path depending on test results received • consider the clinical impact 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 of other members of the healthcare team, and what other sources of information and support are available • ensure results are checked in a timely manner, taking responsibility for following up results and progressing management as appropriate based on these results	• demonstrate understanding of what parts of an investigation are provided by different doctors or health professionals
Health policy, systems, and advocacy	• select and justify investigations regarding the pathological basis of disease, appropriateness, utility, safety, and cost effectiveness • consider resource utilisation through peer review of testing behaviours	

EPA 12: Clinic management

Theme	Clinic management	AT-EPA-12
Title	**Manage an outpatient clinic**	
Description	This activity requires the ability to: • manage medical procedures and treatments • manage clinic services • keep written documentation of all activity within the clinic • oversee quality improvement activities • communicate with patients, their families and/or carers • communicate with other care providers • liaise with other health professionals and team members • demonstrate problem-solving skills • responsibly use public resources.	
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	• effectively 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 an accurate and appropriately prioritised problem list in clinical notes • maintain up-to-date documentation on patients' presentation, intercurrent health conditions, management, and progress, including key points of diagnosis and decision making to inform coordination of care	• 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 general practitioners, community health centres, and consumer organisations • ensure patients understand the need for, and purpose of, a valid referral at each visit and the duration of referral validity • link patients to specific community-based health programs and group education programs • use telehealth and digitally integrated support services to enable patients' access to care	• wherever practical, meet patients' specific language and communication needs • facilitate appropriate use of interpreter services and translated materials • work in partnership with patients to develop an agreed care plan and optimise motivation for adherence

	• update referring doctors/teams on attendance outcomes and management plans in a timely manner, appropriate to the patients' clinical situation	
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 • identify aspects of service provision that may be a risk to patients' safety, and escalate appropriately • ensure that patients are informed about waiting times and any fees	• take reasonable steps to address issues if patients' safety may be compromised • understand the different ways to evaluate and improve the quality and safety of outpatient health care • 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 • obtain patient consent before involving students or other health professional observers in patient consultations • contribute to the generation of knowledge • provide supervision to junior colleagues to ensure the provision of quality patient care • 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 • ensure that usual care is not compromised if a patient decides to not participate in research	• allow patients to make informed and voluntary decisions to participate in research • explain that routine care will continue if the participant decides not to participate in research
Cultural safety	• apply knowledge of the cultural needs of the community being served, and how to shape service delivery to its' people • mitigate the influence of own culture and beliefs on interactions with patients and decision making • adapt practices which improve patient engagement and health outcomes and are underpinned by cultural safety	• acknowledge the social, economic, cultural, and behavioural factors influencing health, both at individual and population levels

	• refer to or engage culturally appropriate support services for those with chronic health conditions	
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	• understand 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 • ensure appropriate consent procedures and evaluate capacity/competence of patients to make decisions regarding their health care
Judgement and decision making	• triage referrals according to urgency of care required • 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 available resources • decide on effective use of telehealth, outreach, and liaison services when appropriate and available	• understand 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 • work effectively with patient's primary care provider • 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 and provide feedback • support colleagues who raise concerns about patients' safety • consider urgency of care and work effectively to maximise patient access to health services	• attend relevant clinical meetings regularly • ensure all members of the multidisciplinary team are respectful of colleagues and interact appropriately and professionally

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 • partner with organisations to address aspects of service provision that may be a risk to patients' safety such as overbookings, IT issues affecting efficiency, and clinic referral waitlists • 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 • identify tools required to improve quality of service provision and advocate for these within the health care organisation

Knowledge Guides

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

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

#	Title
1	Scientific foundations of endocrinology
2	Disorders of glucose metabolism
3	Disorders of body weight
4	Lipid disorders
5	Disorders of the pituitary, hypothalamus and of water balance
6	Thyroid disorders
7	Adrenal disorders
8	Parathyroid, calcium and bone disorders
9	Neuroendocrine and inherited tumour syndromes
10	Male reproductive endocrinology
11	Female reproductive endocrinology
12	Variations in sex characteristics and gender identity

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, histology, and physiology of the endocrine organs including:

- Adipose tissue
- Adrenal cortex
- Adrenal medulla
- Bone
- Female reproductive tract
- Male reproductive tract
- Pancreas
- Parathyroid
- Pituitary
- Thyroid

Classes of hormones

- Structure, function, and biosynthesis of hormones:
  - aminergic hormones
  - peptide hormones
  - steroid hormones
  - thyroid hormones

Mechanisms of hormone action

- Classes of peptide and aminergic hormone receptors
- Classes of nuclear hormone receptors
- Distinguish between endocrine, paracrine, and autocrine functions of hormones
- Principles of receptor signalling:
  - G-protein coupled
  - nuclear
  - tyrosine kinase

Regulation of hormonal systems

- Adrenal
  - adrenal androgens
  - aldosterone/renin-angiotensin axis
  - catecholamines
  - cortisol/HPA axis
- Calcium regulation and bone physiology
  - bone turnover markers
  - calcitonin
  - fibroblast growth factor 23 (FGF23)
  - parathyroid hormone (PTH)
  - parathyroid hormone-related protein (PTHrP)
  - vitamin D biosynthesis pathway
- Hypothalamus/anterior and posterior pituitary axes
  - anti-diuretic hormone
  - CRH, ACTH, cortisol
  - dopamine, prolactin
  - GHRH, GH, IGF-1
  - GnRH, FSH, LH, oestrogen, progesterone, testosterone
  - oxytocin
  - TRH, TSH, thyroid hormones
- Key biosynthetic pathways of hormones

- Lipid metabolism
- Major stimuli and inhibitors of individual hormones
- Negative and positive feedback regulation of endocrine systems
- Pancreatic and gastrointestinal hormones
  - gastrin
  - glucagon
  - glucagon-like peptide (GLP)/gastric inhibitory polypeptides (GIPs) and peptide YY
  - insulin
  - somatostatin
- Reproduction
  - AMH, inhibins and activins
  - HPG axes (GnRH, FSH, LH, oestrogen, progesterone, testosterone)

Principles of statistics and epidemiology

- Basic statistics:
  - absolute and relative risk
  - likelihood ratios and odds ratios
  - null hypothesis and P-values, confidence intervals
  - sensitivity, specificity, and predictive values
  - statistical tests – chi-square, t-tests, ANOVA, linear vs logistic regression analysis, parametric vs non-parametric
  - type I and II errors, power calculations
- Clinical research studies:
  - case reports
  - cohort or registry studies
  - ethical principles
  - observational studies
  - randomised control trials
  - study types, advantages and limitations:
  - systematic reviews and meta-analysis
- Levels of evidence and classes of recommendations
- Population risk determination of endocrine disease development:
  - biomarker development
  - community/policy prevention measures
  - principles of population screening
  - risk scoring systems

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

Non-invasive tests and clinical assessment tools

- Ambulatory blood pressure
- Clinical risk calculators (used with clinical judgment in the discussion of management with patients), such as:
  - cardiovascular risk calculators
  - breast cancer risk calculators
  - Dutch lipid score
  - fracture risk calculators
  - MODY calculator
- Diabetes management monitoring data
  - Manual or digital BGL diary
  - Continuous glucose monitoring output data
  - Insulin pump upload data
- Ferriman-Gallwey scoring
- Salivary testing
- Semen analysis
- Tanner staging
- Urine testing

explain procedural risk and obtain informed consent where applicable.	**Chemical pathology and laboratory testing of hormones** • Assay indications and limitations • Assay interference (endogenous and exogenous parameters) • General laboratory processes for sample collection, storage and processing • Physiological influences on hormone assay results » age » circadian rhythm » exercise » fasting » menstrual cycle » pregnancy • Reference ranges and how they are derived » indications for age-matched, sex-matched, gestational reference ranges • Sensitivity and specificity of testing choice • Types of assays, such as: » antibody chemiluminescence, » liquid chromatography » tandem mass spectrometry **Cytology and histopathology** • Adrenal cortical tumours • Adrenal medullary tumours and paragangliomas • Hormone-secreting gonadal tumours • Other neuro-endocrine tumours • Pancreatic neuro-endocrine tumours • Parathyroid • Pituitary • Thyroid nodule FNA interpretation and scoring **Dynamic endocrine testing*** • Adrenal vein sampling • Calcium stimulation testing • Clonidine suppression test • Fludrocortisone suppression test • Glucagon and arginine stimulation tests • Insulin tolerance test • Mixed meal test • OGTT for glucose and growth hormone • Overnight metyrapone test • Saline suppression test • Short synacthen test for cortisol and 17OHP • Stimulated copeptin testing • Water deprivation test • Workup for suspected Cushing's » dexamethasone suppression tests » inferior petrosal sinus sampling *suggest referencing Harmonisation of Endocrine Dynamic testing in Adults **Radiological Investigations** • CT scan: » adrenal » metastases from endocrine malignancies » ovary » pancreas » parathyroid

- pituitary
- thymus
- thyroid

- MRI:
  - adrenal
  - hypothalamus
  - ovary
  - pancreas
  - pituitary
- PET scan
- Ultrasound:
  - endometrium
  - ovary
  - parathyroid
  - testis
  - thyroid

Nuclear Medicine

- Diagnostic utility of nuclear isotopes in endocrine disease, including thyroid, parathyroid and bone investigations
- Therapeutic utility of nuclear isotopes in endocrine disease management, including radionuclide ablation

Bone density and structure

- Densitometry investigations and limitations
- Quantitative CT assessment of bone density

Genetic testing

- For conditions where genetic testing is indicated, appropriate counselling and consent is provided to the patient prior to testing

IMPORTANT SPECIFIC ISSUES

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

- Evidence for best practice and application of this, using clinical judgement for individual circumstances in partnership with patients
- Endocrine medical emergencies, and knowledge of how to manage appropriately
- Environmentally sustainable practices in clinical care
- Improving equitable access to comprehensive endocrine care for individuals, including:
  - appropriate multicultural resources
  - multidisciplinary involvement
  - use of telehealth and other digital health tools
- Seek multidisciplinary care/review wherever necessary

Knowledge guide 2 – Disorders of glucose metabolism

Advanced Training in Endocrinology (Adult Internal Medicine)

KEY PRESENTATIONS AND CONDITIONS

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

Presentations

- Asymptomatic with detection of hyperglycaemia on screening
- Autonomic disease
  - » cardiac
  - » gastroparesis
  - » postural hypotension
  - » sexual dysfunction
- Cognitive decline
- Diabetes foot disease
  - » Charcot arthropathy
  - » prevention/management of foot ulcers
- Hyperglycaemic metabolic emergencies
- Hypoglycaemia
  - » hypoglycaemia unawareness
  - » medication induced
  - » post prandial
- Infection, often recurrent or severe
- Macrovascular disease
  - » cerebrovascular disease
  - » ischaemic heart disease
  - » peripheral vascular disease
- Microvascular disease
  - » peripheral neuropathy
  - » renal nephropathy
- Diabetic amyotrophy
- Mood changes
- Polydipsia/Polyuria
- Post-prandial fatigue
- Retinopathy
- Visual disturbances
- Weight loss

Conditions

- Diabetes mellitus:
  - » gestational
  - » monogenic
  - » type 1
  - » type 2
- Diabetes secondary to other conditions
  - » cystic Fibrosis
  - » haemochromatosis
  - » post transplantation

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 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

	» pancreatic insufficiency o alcoholism o pancreatectomy o pancreatic cancer o recurrent pancreatitis • Drug induced diabetes, including steroid-induced and antipsychotic-induced • Hyperinsulinaemica • Hypoglycaemia • Latent autoimmune diabetes adult (LADA) • Mild age-related (MARD) • Mild obesity related (MOD) • pre-diabetes • Severe insulin deficiency (SIDD) • Severe insulin resistance (SIRD)
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** • Pancreatic transplant or islet cell transplant indications and management • Rare syndromes associated with increased diabetes risk
EPIDEMIOLOGY, PATHOPHYSIOLOGY, AND CLINICAL SCIENCES Advanced Trainees will have a comprehensive depth of knowledge of the principles of the foundational sciences.	**Diabetes** **Insulin dose adjustments (irrespective of insulin delivery method)** • Safe dose adjustment in response to: » alcohol and recreational drug use » blood glucose levels » concurrent treatments that impact blood glucose (e.g. glucocorticoids and parenteral nutrition etc.) » exercise » intravenous insulin regimens: o dosing o indications o initiation o transition to subcutaneous » nutrition and fasting » peri-operative and peri-procedures » pregnancy, lactation, labour, and post-partum » sick days » titration **Lifestyle management**

- Counselling and best evidence-based lifestyle advice for individuals to prevent the development of Type 2 diabetes or to manage all forms of established diabetes:
  - alcohol, recreational drugs, smoking, and vaping
  - carbohydrate counting
  - contraception and pre-conception planning, management during pregnancy and postpartum
  - education and employment
  - nutrition and diet
  - physical activity and reducing sedentariness
  - weight management

Pharmacological management

- Apply up to date, evidence-based best practice and clinical judgement to individualised medication management plans
- Action profiles of various insulins and combination regimens
  - effects of concurrent drug therapies on glycaemia
  - evidence-based use of pharmacotherapy for non-glycaemic benefits in diabetes populations, e.g. cardiovascular or renal benefits
- Knowledge of the pharmacological therapy indicated for:
  - gestational diabetes mellitus
  - MODY
  - pancreatectomy or endocrine pancreatic insufficiency
  - type 1 diabetes mellitus and LADA
  - type 2 diabetes mellitus
- Mechanism of action of major non-insulin drug classes in glycaemia
- Principles of pharmacology:
  - drug distribution, metabolism, and excretion
  - drug interactions, precautions, and contraindications

Screening

- Depression, accelerated cognitive decline, and dementia
- Diabetes complications screening (incorporating allied health and other health professionals wherever indicated) at appropriate intervals for microvascular and macrovascular disease burden
- Diabetes distress, particularly for people living with type 1 or LADA diabetes
- Diagnostic criteria
- Hypertension and dyslipidemia
- Individualised glycaemic targets determined by:
  - complications and comorbidities profile
  - duration of disease
  - goals
  - hypoglycaemia risk
  - patient preferences
- Metabolic syndrome and associated fatty liver disease (MAFLD)
- Monitoring glycaemia
- Obstructive sleep apnoea (OSA)
- Referral and use of allied health and multidisciplinary professionals in providing holistic team care.
- Screening and managing referrals for associated conditions
- Screening for other autoimmune conditions, such as:
  - Addisons disease
  - coeliac disease
  - pernicious anaemia
  - thyroid dysfunction

Hyperglycaemic emergencies

- diabetic ketoacidosis
- hyperglycaemic hyperosmolar state

Hypoglycaemia

- Acute and preventive management of hypoglycaemia
- Acute hypoglycaemic emergencies
- Investigations and work up of hypoglycaemia in non-diabetes cases
- Mechanisms and associated diseases, including insulinoma, dumping syndrome, nesidioblastosis, post bariatric surgery
- Recognition and management of hypoglycaemia unawareness

Euglycaemic ketoacidosis

- Pregnancy induced
- SGLT2i induced
- Starvation
- Type 1 diabetes

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

Diabetes

Advanced technology and devices

- Blood glucose monitoring systems
  - » benefits, limitations, and data interpretation (time in range, GMI)
  - » Bolus calculators for multiple daily injection (MDI)
  - » continuous glucose monitoring (CGM) systems
    - o used with \MDI therapy and insulin pumps
    - o principles, benefits, and limitations of closed loop technology
    - o glucose data interpretation (self-monitored blood glucose readings, continuous glucose monitoring)
  - » finger prick meters – glucose and ketones
- Calculation and adjustment of:
  - » basal insulin dose/ratios
  - » carbohydrate ratio
  - » insulin sensitivity factor
- Indications and suitability of CSII converting insulin doses from MDI to CSII
- Insulin delivery devices:
  - » insulin pen devices for MDI therapy
  - » insulin pumps and features/functions
- Interpretation of insulin pump data
- Principles of continuous subcutaneous insulin infusion (CSII, ‘insulin pump’) therapy, such as:
  - » basal infusion rates
  - » pump specific attributes including suspend and exercise

Cardiovascular risk mitigation

- Blood pressure
  - » individualised target setting
  - » investigation for underlying secondary causes of hypertension where appropriate
  - » monitoring including home, clinic, and 24-hour ambulatory monitoring
- Clinical assessment and comprehensive diabetes physical examination
- Impact of alcohol on diabetes monitoring and management
- Lipid management and targets in diabetes cohort
- Smoking cessation/avoidance

- Weight management

Investigations

- Gastric emptying study
- Genetic screening
  - » rare or suspected inherited forms of diabetes
- Endogenous insulin reserves (when indicated), e.g. paired C-peptide and glucose
- Limitations and interferences in pathology results, such as:
  - » fructosamine
  - » HBA1c
  - » lipid studies
- Pancreatic autoimmunity (when indicated or suspected)
- Nerve conduction studies
- Urine albumin/creatinine ratio
- Use of decision support tools to facilitate clinical decisions such as cardiovascular disease calculator

Hypoglycaemia

- Dynamic tests: indications, performing tests and interpretation
  - » mixed-meal test
  - » 72-hour fast

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.

Evidence based clinical practice

- Beta cell transplantation, including whole pancreas or islet cell transplantation
- Evidence for best practice (e.g., AnnADA guidelines supplement, diabetes care) and application of this using clinical judgement and individual circumstances in partnership with patients
- Fitness to drive according to guidelines

General management considerations

- Educate, support, and empower people to self-manage their diabetes
- Environmentally sustainable practices in clinical care
- Impact of:
  - » cultural, health literacy, social, geographic and financial barriers to accessing comprehensive diabetes care
  - » diagnosis of diabetes and of living with diabetes on an individual, their family, their life, and their life stages
  - » hypoglycaemia unawareness on patients, their family, and carers.
  - » socioeconomic determinants of health on health outcomes
- Equitable access to comprehensive diabetes care delivery for individuals, such as:
  - » appropriate multicultural resources
  - » including multidisciplinary involvement
  - » use of telehealth and other digital health tools
- Recognise the impact of management in the presence of comorbidities including:
  - » atherosclerotic
  - » cardiac failure
  - » chronic kidney disease
  - » cognitive decline
  - » obesity
  - » seizure disorders

Health needs of specific groups

- Diabetes in youth:
  - » common risk-taking behaviour in young people and its effects on diabetes
  - » impact of practitioner's behaviour on young people
  - » physiological, psychological and social factors affecting glycaemic levels in adolescence
  - » potentially negative effects of adolescent behaviour on diabetes and the impact it may have on family and personal relationships
  - » young people transitioning from paediatric to adult diabetes care
- Older people and people living with significant disability or life-limiting comorbid conditions
  - » adjust management and therapeutic targets based on individual needs and the principles of hypoglycaemia harm mitigation
  - » ensure careful utilisation of health service resources
  - » potential effects of these comorbidities on diabetes treatments and glycaemia
  - » specific social and medical needs of people with diabetes living in residential/nursing care, and those with neurological or cognitive disabilities including additional levels of supervision to ensure safety
  - » work with multidisciplinary teams and family members who can support people living in the community
- Management of glycaemia
  - » for people with type 1 or LADA diabetes, manage insulin delivery and insulin pump therapy in all stages of pregnancy, in labour and post-partum
  - » indications and safety of medication use prior to conception, in pregnancy and with lactation
  - » monitoring advice
  - » nutrition and exercise advice
- Pre-conception, pregnancy, and lactation
  - » recognise the need for pre-pregnancy assessment, counselling and family planning in women of reproductive age
    - gestational diabetes:
    - diagnostic criteria, screening strategies including progression of complications
    - glycaemic, blood pressure and weight management goals prior to and throughout pregnancy
    - impact of intercurrent illness and events, such as administration of glucocorticoids, on glycaemia and how to adjust insulin doses in these situations
    - monitor for risks, including progression of maternal complications on foetal development and growth
- Recognise concerns and anxieties of parents and carers

Knowledge guide 3 – Disorders of weight

Advanced Training in Endocrinology (Adult Internal Medicine)

KEY PRESENTATIONS AND CONDITIONS

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

Presentations

- ADHD (untreated and treated)
- Arthritis
- Arthropathy
- Autism (untreated and treated)
- Corticosteroid treated conditions
- Depression
- Disorders of glucose metabolism:
  - diabetes:
    - corticosteroid induced
    - type 1
    - type 2
- Eating disorders
- Exercise intolerance
- Fatigue
- Fatty liver disease
- Hyperandrogenism
- Hypoventilation syndrome
- Infertility
- Insulin resistance
- Kidney disease with proteinuria
- Male hypogonadism
- Menstrual disturbance
- Mood disorders (untreated and treated)
- Obstructive or central sleep apnoea
- Overweight/Obesity
- Severe mental illness
- Sexual dysfunction
- Sleep apnoea
- Weight gain
  - obesity
  - overweight
  - polycystic ovary syndrome (PCOS)
- Underweight:
  - electrolyte disturbances
  - functional hypothalamic amenorrhoea
  - nutritional deficiencies
  - osteopenia
  - osteoporosis
  - stress fractures
- Vascular disease
  - cardiovascular
  - peripheral

*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 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

Conditions

- Overweight/Obesity
  - » endocrine causes
    - adrenal
    - Cushing syndrome
    - iatrogenic
    - other
    - pituitary
  - » energy overconsumption:
    - anxiety
    - binge eating disorders
    - drug-induced:
      - » ADHD medications
      - » anticonvulsants and other neuroleptics
      - » antidepressants
      - » antipsychotics
      - » betablockers
      - » corticosteroids
      - » insulin
    - food and cooking literacy
    - food security
    - PTSD
  - » genetic causes:
    - monogenic
    - polygenic
    - Prader Willi syndrome
  - » GH excess
  - » hypogonadism
  - » hypothalamic disease
  - » hypothyroidism
  - » menopause
  - » PCOS
- Endocrine consequences of underweight syndromes:
  - » electrolytes disorders
  - » fatty liver disease
  - » hypothalamic amenorrhoea
  - » subfertility

EPIDEMIOLOGY, PATHOPHYSIOLOGY, AND CLINICAL SCIENCES

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

- Bidirectional relationship of the gastrointestinal tract and brain in appetite and intake control and satiety
- Epidemiology and prevalence of overweight/obesity:
- Evidence basis for weight management strategies
  - » physical, endocrine, and mental health consequences of overweight/obesity and similarly for the underweight syndromes
  - » psychosocial factors that contribute to obesity and to underweight syndromes
- Evidence basis for weight regain avoidance in obesity
- Neuroendocrine regulation of appetite
- Principles of body composition and energy balance

- Recommended nutritional, micronutrient, and energy intake according to life stage:
  - athletes
  - by age and in aging
  - developmental stage
  - menopause
  - post-bariatric nutrition:
    - immediate
    - long term
    - long term nutritional evaluation and management
  - preconception/pregnancy/lactation
  - sex

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

- Body composition, weight, height, and waist to hip ratio
- Counselling and best evidence-based lifestyle advice for individuals, as part of weight management strategy
- Edmonton obesity staging system
- History taking and physical examination
  - obesity-focused
  - underweight syndrome-focused
- Screening for endocrine causes and consequences of weight derangement

Disease risk mitigation

- Alcohol
- Blood pressure control
- Cancer, particularly:
  - breast
  - colon
  - endometrial
  - oesophageal
  - prostate
- Electrolyte derangement
- Hepatosteatosis (including cirrhosis)
- Hyperandrogenism
- Hypoventilation syndrome
- Infertility and hypogonadism
- Obstructive and central sleep apnoea
- Renal disease
- Screening for:
  - diabetes
  - lipid derangement
- Smoking and vaping

Lifestyle

- Counselling and best evidence-based lifestyle advice for individuals, as part of weight management strategy:
  - contraception and pre-conception planning
  - exercise
  - knowledge of dietary strategies for weight loss
    - effectiveness
    - evidence
    - maintenance
    - manage patient medications safely
    - precautions
  - normal growth and development

- nutrition
  - individualised counselling
  - psychological strategies
- nutritional and supplementation management to avoid micronutrient deficiencies and bone loss
- refer to multidispliniary team members as required, including:
  - exercise physiologists
  - dieticians
  - psychiatrists
  - psychologists

Pharmacological therapy

- Apply up to date, evidence-based best practice and clinical judgement to individualised medication management plans
- Principles of pharmacology:
  - drug distribution, metabolism, and excretion
  - drug interactions, precautions, and contraindications
- Pharmacological therapy available for overweight/obesity:
  - contraindications and precautions
  - expected effectiveness
  - indications
  - monitoring requirements – short, medium and long term

Procedures

- Bariatric surgery referrals
  - awareness of the evidence basis of various procedures
  - manage patient medication (specifically obesity and diabetes medications) and nutritional therapy perioperatively
  - manage pre and post dietary therapy, with knowledge in safe use of VLED
  - selective referral according to patient suitability
- Long term management of patients post bariatric surgery
  - complication monitoring
  - diuretic and antihypertensive medications
  - micronutrient supplementation, where indicated
  - weight regain mitigation with knowledge of effective nutritional, motivations and psychological strategies

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.

General management considerations

- Environmentally sustainable practices in clinical care
- Impact of culture, health literacy, social, geographic and financial barriers to accessing
  - comprehensive anorexia nervosa care
  - comprehensive obesity care
- Impact of living with obesity, anorexia and/or bulimia or other disordered eating on an individual, their family, their life and their life stages, and the long-term management considerations
- Impact of socioeconomic determinants of health on an individual's health outcomes
- Options for improving equitable access to comprehensive weight management care for individuals, such as:
  - appropriate multicultural resources
  - multidisciplinary involvement
  - use of telehealth and other digital health tools, and

Health needs of specific groups

- Older people
  - consequences of weight loss on musculoskeletal system

- weight loss in older persons to avoid sarcopenia and excess bone loss
- Pre-conception, pregnancy, and lactation:
  - knowledge of evidence for safe pre-conception weight
  - recommendations for timing of conception after rapid weight loss, including from bariatric surgery
  - safety of medications in pregnancy and breastfeeding
  - utilise medications safely and withdraw these in a timeframe that is safe for pregnancy
- People living with mental health disorders
  - evidence for early screening and intervention for improved cardiovascular outcomes
  - impact of medications for mental health disorders on appetite, body composition, and ability to comply with lifestyle advice

Knowledge guide 4 – Lipid disorders

Advanced Training in Endocrinology (Adult Internal Medicine)

KEY PRESENTATIONS AND CONDITIONS

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

Presentations

- Dyslipidaemia:
  - » elevated cholesterol
  - » elevated triglycerides
- Elevated lipoprotein (a)
- Hypercholesterolaemia
- Hypertriglyceridemia
- Opportunistic, cascade or universal screening
- Pancreatitis with elevated triglycerides
- Premature cardiovascular disease
- Xanthomas:
  - » cutaneous
  - » tendon

Conditions

- Genetic causes of hypertriglyceridemia
- Heterozygous familial hypercholesterolaemia
- Secondary hypercholesterolaemia due to:
  - » diabetes
  - » liver disease
  - » steroid treatment
- Secondary hypertriglyceridemia due to:
  - » diabetes
  - » hypothyroidism
  - » lifestyle factors
  - » oncology treatment:
    - ○ asparaginase
  - » side effect of medications

*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 and their quality of life when developing a management plan
» understand the role of genetic testing and provide adequate counselling to index cases and patients for cascade screening

Manage

» provide evidence-based management
» prescribe therapies tailored to patients' needs and conditions
» understand the role of monoclonal antibody and silencing RNA therapies be aware of the role of lipoprotein

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** • Pancreatitis • Premature cardiovascular disease **Conditions** • Dysbetalipoproteinaemia • Familial chylomicronaemia • Homozygous familial hypercholesterolaemia • Hypobetalipoproteinaemia and abetalipoproteinaemia • Lipodystrophies and the cross over with monogenic diabetes • Sitosterolaemia	apheresis 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 depth of knowledge of the principles of the foundational sciences.	• Incidence of familial hypercholesterolaemia and ethnic variations » early detection and multidisciplinary team management of severe lipid disorders » genetics of familial hypercholesterolaemia and other inherited lipid disorders » principles of opportunistic, cascade and universal screening	
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.	**Investigations** • Calculation of the Dutch Lipid Clinic Network Score • Cascade screening of family members • CT calcium score • Interpretation of genetic results • Interpretation of lipid and lipoprotein profiles • Screening and monitoring of lipid profiles • Screening for additional cardiac risk factors: » hypertension » obesity » smoking	

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.

General management considerations

- Access local guidelines regarding lipid screening, treatment options and treatment targets
- Cascade testing
- Genetic counselling
- Multidisciplinary team approach including:
  - cardiology
  - dietitian
  - genetic counsellor
  - primary care physician
- Recommendations for healthy lifestyle and cardiovascular risk mitigation, such as:
  - diabetes
  - hypertension
  - obesity
- Shared care with primary care and general paediatrics
- Tertiary team approach for severe lipid disorders including:
  - apheresis service
  - cardiology
  - genetics
  - liver transplant team

Non-pharmacological interventions

- Role of dietary measures, including plant sterols and omega-3 fatty acid supplements

Pharmacological interventions

- Acute management of severe hypertriglyceridemia with pancreatitis
  - indications for use of insulin, heparin and plasmapheresis
- Awareness and indications for agents:
  - ANGPTL3 monoclonal Ab
  - apheresis
  - gene silencing agents,
- Indications, dosing and side effects of:
  - cholesterol biosynthesis inhibitors (statins)
  - fibrates for hypertriglyceridemia
  - mixed dyslipidaemias
  - monoclonal antibody PCSK-9 inhibitors
  - sterol uptake inhibitors (ezetimibe)
  - use of combination therapies and risks

Knowledge guide 5 – Disorders of the pituitary, hypothalamus, and of water balance

Advanced Training in Endocrinology (Adult Internal Medicine)

KEY PRESENTATIONS AND CONDITIONS

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

Presentations

- Diabetes
- Failure to lactate
- Fatigue/Tiredness
- Fractures
- Galactorrhoea
- Headache
- Hypernatraemia
- Hyponatraemia
- Hypotension
- Loss of axillary/pubic hair
- Loss of libido
- Menstrual disturbance
- Polydipsia
- Polyuria/Nocturia
- Sleep disturbance
- Visual disturbance
- Weight gain
- Weight loss

Conditions

- Functioning pituitary adenomas:
  - acromegaly
  - Cushings syndrome
  - prolactinoma
- Hypopituitarism (1 or more axes):
  - adenomas
  - apoplexy
  - hormone deficiencies
    - ACTH deficiency
    - arginine vasopressin deficiency
    - GH deficiency
    - gonadotropin deficiency
    - prolactin deficiency
    - TSH deficiency
  - inherited pituitary disorders
  - late effects from past brain radiotherapy
  - lymphocytic hypophysitis
  - pituitary metastases
  - post-surgical
  - Sheehans syndrome
  - trauma
- Recognise acute hypopituitarism as a medical emergency

*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 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

	• Non-functioning pituitary tumours • Sellar lesions: » craniopharyngioma » empty sella » Rathke cleft cyst • Syndrome of inappropriate antidiuresis (SIAD)	
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** • Aggressive pituitary tumours • Familial syndromes associated with pituitary tumours • Gonadotropinoma • Infiltrative disease » haemochromatosis » histiocytosis X » Langherhan's cell histiocytosis » sarcoidosis • Pituitary carcinomas • Syndromes associated with hypopituitarism » CHARGE syndrome » Prader-Willi syndrome » septo-optic dysplasia » stalk interruption syndrome » pineal gland disorders • TSHoma » tuberculosis	
EPIDEMIOLOGY, PATHOPHYSIOLOGY, AND CLINICAL SCIENCES Advanced Trainees will have a comprehensive depth of knowledge of the principles of the foundational sciences.	**Clinical science** • Anatomy, physiology, and histopathology of the normal pituitary gland and of pituitary tumours • Epidemiology and natural history of pituitary tumour types • Functions and regulation of the hypothalamus and pituitary axes • Molecular pathways and epidemiology of genetic variants conferring predisposition to pituitary disease **Diagnostic work up** • Aetiology, pathology, and clinical manifestations of hypothalamic and pituitary disease • Complex diagnostic work up and pitfalls in Cushings syndrome • Genetic disorders affecting the pituitary as an underlying cause of pituitary disease, and the indications and limitations of genetic tests • Limitations, indications, and interpretation of biochemical assays in the diagnostic work up of pituitary disorders • Thorough history, physical examination and diagnostic work up of people suspected of presenting with pituitary disease	

Medical management considerations

- Emergency management of acute hypopituitarism
- Indications, precautions and contraindications, as well as prescribing and monitoring of pituitary hormone replacement:
  - » anti-diuretic hormone (Desmopressin)
  - » glucocorticoid
  - » gonadal steroids
  - » gonadotrophins
  - » growth Hormone
- Medical management of Cushing's syndrome
- Medical management of common pituitary disorders of excess hormone production:
  - » monitoring of treatment efficacy
  - » monitoring of underlying condition
- Principles of pharmacology
- Thyroid hormone

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

Investigations

- Dynamic endocrine testing
  - » specific understanding of indications and contraindications:
    - ○ suspected acromegaly (including glucose tolerance test)
    - ○ suspected ACTH deficiency, including:
      - » insulin tolerance test
      - » overnight metyrapone test
      - » Synacthen stimulation test where appropriate
    - ○ suspected arginine vasopressin deficiency, including:
      - » stimulated copeptin testing
      - » water deprivation test
    - ○ suspected Cushings syndrome, including:
      - » dexamethasone suppression tests
      - » salivary testing
      - » urine testing
    - ○ suspected growth hormone deficiency (including glucagon stimulation test)
- Imaging
  - » familiarity with pituitary MRI neuroanatomy
  - » indications for imaging of the hypothalamus and pituitary
- Laboratory biochemistry:
  - » interpretation of biochemical testing in the clinical context
  - » non-pathological causes for hyperprolactinaemia
  - » pituitary function testing in pregnancy
  - » properties, principles and indications for biochemical investigation of hypothalamic-pituitary disease:
    - ○ baseline testing
    - ○ dynamic testing
  - » specific understanding of the timing, patient preparation and assay platforms suited for pituitary hormone testing

Procedures

- Indications for inferior petrosal sinus sampling
- Indications for pituitary radiotherapy
- Indications for pituitary surgery
- Pre-, peri- and postoperative management of patient with pituitary disease, with particular emphasis on management of endocrine disturbances

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.

Evidence-based practice

- Remain abreast of evidence for best practice and apply this using clinical judgement and individual circumstances in partnership with patients
- Seek multidisciplinary care/review from centres of pituitary care expertise wherever necessary

General management considerations

- Impact of hypothalamic/pituitary and/or genetic diagnoses on the patient, their partner and, where applicable, their family/carers
- Incorporate environmentally sustainable practices in clinical care
- Longitudinal and multidisciplinary care needs of people with pituitary disease
- Mitigate clinical risk with intercurrent illness management planning, for example, use of medical alert bracelets and sick-day steroid plans when applicable
- Pre-, peri- and postoperative management of patients with pituitary disease, with particular emphasis on management of endocrine disturbances, including anticipatory management of patients before and after pituitary surgery
- Understand options for improving equitable access to comprehensive pituitary care for individuals, including multidisciplinary involvement, use of telehealth and other digital health tools, and appropriate multicultural resources

Health needs of specific patient groups

- Assessment, diagnosis, and management of women with pituitary disorders first presenting in pregnancy
- Endocrine care for women with pituitary disorders through pregnancy, labour, and post-partum
- Fertility preservation and treatment options in patients with congenital or acquired pituitary disease affecting the reproductive axis
- Screening and genetic counselling of patients with inherited pituitary or hypothalamic disease

Knowledge guide 6 – Thyroid Disorders

Advanced Training in Endocrinology (Adult Internal Medicine)

KEY PRESENTATIONS AND CONDITIONS

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

Presentations

- Asymptomatic biochemical findings
- Compressive symptoms
- Goitre
- Hoarse voice/stridor
- Neck lump
- Pretibial myxoedema
- Symptomatic hypothyroidism
- Symptomatic hyperthyroidism
- Thyroid eye disease

Conditions

- Benign thyroid nodule(s)
- Hyperthyroidism:
  - central (TSHoma)
  - Graves disease
  - medication induced (e.g. amiodarone)
  - thyroiditis
  - toxic multinodular goitre
  - toxic nodule
- Hypothyroidism
  - autoimmune (Hashimotos thyroiditis)
  - central (pituitary)
  - granulomatous thyroiditis
  - iodine deficiency
  - medication induced
  - painless thyroiditis
  - post-surgical
  - suppurative thyroiditis
- Perioperative management of patients with thyroid disease
- Syndromes of resistance to thyroid hormones (alpha, beta)
- Thyroid disorders in pregnancy and postpartum:
  - Graves disease
  - hypothyroidism
  - postpartum thyroiditis
  - thyroid cancer
  - transient hyperthyroidism of pregnancy
- Thyroid cancer:
  - anaplastic
  - follicular
  - Hurthle
  - lymphoma
  - medullary
  - metastases to thyroid
  - papillary
  - poorly differentiated/insular

*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 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

	• Thyroid eye 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.	• Advanced or recurrent thyroid cancer • Thyroid emergencies » complications from anti-thyroid medications o agranulocytosis o hepatitis » critically unwell patients presenting with concurrent thyroid derangement » patients presenting with myxoedema coma » patients presenting with or at risk of thyroid storm » suppurative thyroiditis	
EPIDEMIOLOGY, PATHOPHYSIOLOGY, AND CLINICAL SCIENCES Advanced Trainees will have a comprehensive depth of knowledge of the principles of the foundational sciences.	• Risk factors for thyroid disease: » concurrent autoimmune disorders » exposure to high iodine loads- dietary or medical » exposure to ionising radiation: o childhood malignancy o employment o environmental o head and neck cancer » family history » medications used to treat other conditions such as malignancy, such as: o amiodarone o biological agents (including immunotherapies) o lithium » smoking	
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	**Investigations** • Biochemical evaluation of the hypothalamic-pituitary-thyroid axis including: » thyroid autoantibodies » thyroid function (FT4 and FT3) » tumour markers • Differences between primary and secondary hypothyroidism and differences in thyroid function on replacement in primary and secondary hypothyroidism • Imaging » CT scans neck and thorax » nuclear medicine uptake scanning (Technetium 99, I123 and I131) » PET scans » thyroid ultrasound • Surveillance of thyroid cancer and appropriate dosing of thyroxine • TIRADS risk stratification of nodules , the risk of malignancy with each category and knowledge of surveillance/biopsy recommendations **Referrals for procedures** • Radioactive iodine code recommendations for: » ablative doses (including use of recombinant TSH or thyroid hormone withdrawal) » Graves disease	

procedural risk and obtain informed consent where applicable.	» low dose scans » thyroid cancer therapeutic » toxic nodule • Hemithyroidectomy versus total thyroidectomy • Hot nodule(s), MNG and thyroid cancer • Indications for surgery • Interpretation of cytology: » Bethesda scoring system » genetic testing • Risks, indications and contraindications, such as: » lactation » pregnancy » thyroid eye disease • Thyroid nodule FNA • Thyroid surgery **Procedures (optional)** • Thyroid ultrasound • Fine needle aspiration biopsy thyroid nodules
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.	• Apply the general principles of triage according to clinical presentation • Work with colleagues in nuclear medicine, thyroid surgery, obstetrics, pharmacy, chemical pathology, histopathology and other doctors to deliver multidisciplinary input to patient care, as applicable to each case and participates in multidisciplinary team meeting discussions for thyroid cancer **Management of common thyroid conditions** • Adjusts thyroid replacement medication and screens for other autoimmune disease annually • Adjusts anti-thyroid medication and awareness of complications of thionamides • Management following thyroid cancer including thyroid replacement and surveillance for thyroid cancer recurrence, and understands the indications and role of chemotherapy agents

Knowledge guide 7 – Adrenal disorders

Advanced Training in Endocrinology (Adult Internal Medicine)

KEY PRESENTATIONS AND CONDITIONS

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

Presentations

- Cardiac arrythmia
- Electrolyte disturbance
- Fatigue
- Fractures
- Headache
- Hirsutism
- Hypertension:
  - » constant
  - » paroxysmal
- Hypotension
- Incidental adenoma
- Menstrual disturbance
- Metabolic syndrome
- Pallor
- Palpitations
- Sweating
- Weight gain/Obesity
- Weight loss

Conditions

- Adrenal cancer
- Adrenal insufficiency/failure
  - » adrenoleukodystrophy
  - » autoimmune:
    - Addisons disease
    - immunotherapy related
    - polyglandular autoimmune syndrome
  - » haemorrhage
  - » idiopathic
  - » infarction
  - » infection
- Adrenal metastasis
- Adrenal nodular disease
  - » functional
    - Conns syndrome/ hyperaldosteronism
    - Cushings syndrome/ hypercortisolism
    - phaeochromocytoma/catecholamine-producing
  - » non-functional
- Congenital adrenal hyperplasia
- Macronodular adrenal hyperplasia
- Phaeochromocytoma
- Primary adrenocortical

*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 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

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** • Inherited adrenal disorders » congenital adrenal hypoplasia » MEN2A, MEN2B/3 VHL » micronodular adrenal disease/Carney complex • X-linked adrenal leukodystrophy	
EPIDEMIOLOGY, PATHOPHYSIOLOGY, AND CLINICAL SCIENCES Advanced Trainees will have a comprehensive depth of knowledge of the principles of the foundational sciences.	**Clinical science** • Anatomy, physiology, and histopathology of the normal and the abnormal adrenal gland (cortex and medulla), hypothalamic-pituitary-adrenal axis and sympathetic/parasympathetic ganglia • Epidemiology and natural history of adrenal hormone excess disorders • Epidemiology of genetic predisposition to adrenal disease • Function and regulation of the adrenal gland **Diagnostic work up** • Aetiology, pathology, and clinical manifestations of adreno-cortical hormone deficiency, primary and secondary • Aetiology, pathology, and clinical manifestations of adrenal hormone excess: » hyperaldosteronism » hypercortisolism » phaeochromocytoma » virilising tumours • History, physical examination, and diagnostic work up of patient suspected of presenting with adrenal disease • Limitations, indications, and interpretation of biochemical assays in the diagnostic work up of adrenal disorders » complex diagnostic work up and pitfalls in Cushings syndrome » diagnostic work up and pitfalls in hyperaldosteronism » different genetic disorders affecting the adrenal gland » impact of medications on the assessment of hormone excess and deficiency **Medical management considerations** • Emergency and long-term management of hypoadrenalism due to primary and secondary adrenal insufficiency: » prescribing and monitoring of glucocorticoid and/or mineralocorticoid » screening for associated disorders • Medical management of adrenal disorders of excess hormone production and monitoring of the underlying condition • Monitoring of treatment efficacy	

- Pharmacological principles of medications used in adrenal disorders:
  - alpha and beta-receptor antagonists
  - glucocorticoids
  - mineralocorticoid receptor antagonists
  - mineralocorticoids
  - steroid biosynthesis inhibitors, such as:
    - ketoconazole
    - metyrapone

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.

Investigations

- Biochemical investigation of adrenal disease, including the hypothalamic-pituitary-adrenal axis:
  - baseline testing
  - dynamic testing
- Imaging
  - CT adrenal protocol
  - MRI
  - PET scan
- Interpretation of biochemical testing in the clinical context:
  - dynamic endocrine testing
  - specific understanding of indications (and contraindications):
    - short synacthen test
    - investigation for suspected Cushings syndrome, such as:
      - dexamethasone suppression tests
      - salivary testing
      - urine testing
- Investigation for suspected Conns syndrome:
  - fludrocortisone suppression test
  - seated saline suppression test
- Laboratory biochemistry:
  - timing, patient preparation, and assay platforms suited for adrenal hormone testing

Procedures

- Indications for adrenal vein sampling
- Indications for adrenalectomy
- Indications for chemotherapy for malignant adrenal lesions
- Pre-, peri- and postoperative management of patients with adrenal disease, with particular emphasis on prevention of adrenal crisis and preoperative preparation and perioperative management of phaeochromocytoma

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.

Evidence based practice

- Remain abreast of evidence for best practice and apply this using clinical judgement and individual circumstances in partnership with patients
- Seek multidisciplinary care/review from centres of expertise wherever necessary

General management considerations

- Impact of adrenal disease and/or genetic diagnoses on the patient, their partner and, where applicable, their family/carers
- Longitudinal and multidisciplinary care needs of people with adrenal disease
- Mitigate clinical risk with sick day management plans when applicable, including use of a medical alert bracelets or similar

- Options for improving equitable access to comprehensive care for individuals, such as:
  - appropriate multicultural resources
  - multidisciplinary involvement
  - use of telehealth and other digital health tools
- Pre-, peri- and postoperative management of patients with adrenal disease
- Incorporate environmentally sustainable practices in clinical care
- Screening and genetic counselling of patients with inherited adrenal disease and referral of their family members if appropriate and with informed consent

Health needs of specific patient groups

- Preconception counselling and pregnancy management of women with congenital adrenal hyperplasia
- Multidisciplinary care of patients with adrenal cancer or malignant phaeochromocytoma/paraganglioma

Knowledge guide 8 – Parathyroid, calcium and bone disorders

Advanced Training in Endocrinology (Adult Internal Medicine)

KEY PRESENTATIONS AND CONDITIONS

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

Presentations

- Abdominal pain
- Altered cognition
- Asymptomatic with incidental findings
- Bone pain
- Cardiac arrythmias
- Constipation
- CKD-MBD
- Fractures
- Nausea or vomiting
- Numbness of hands, feet, mouth
- Preventative in hormone deprivation therapy for breast or prostate cancer
- Renal stones
- Tetany and/or cramping

Conditions

- Hormone deprivation therapy for breast or prostate cancer
- Hyperparathyroidism:
  - » medication-induced
  - » normocalcaemic
  - » primary
  - » secondary
  - » tertiary
- Hypocalcaemia
  - » hypoparathyroidism:
    - congenital
    - idiopathic
    - infiltrative
    - post-surgical
  - » vitamin D deficiency
- Hypophosphatasia
- Pseudohypoparathyroidism
  - » autosomal dominant hypocalcaemia (calcium -sensing receptor mutations)
  - » medication-induced
  - » vitamin D receptor mutations
- PTH-independent hypercalcaemia
  - » malignancy-associated
  - » milk-alkali syndrome
  - » sarcoidosis
- Osteomalacia
- Osteopenia
- Osteoporosis

*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 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

	• Paget's disease • Vitamin D deficiency	
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** • First presentation of hypercalcaemia in pregnancy **Conditions** • Disorder of high bone mass: » acquired » inherited • Hyperparathyroidism due to underlying genetic disorder: » familial hypocalciuric hypercalcaemia » familial isolated idiopathic hyperparathyroidism » hyperparathyroidism-jaw tumour syndrome » MEN1 » MEN2A • Hypophosphataemia » acquired » inherited, including x-linked • Inherited disorders of skeletal dysplasia » fibrous dysplasia » hyperostosis » osteogenesis imperfecta • Parathyroid cancer • Complications of osteoporosis therapies, atypical femur fractures and medication-related osteonecrosis of the jaw • Pregnancy-related conditions including transient osteoporosis of the hip and lactation-related osteoporosis	
EPIDEMIOLOGY, PATHOPHYSIOLOGY, AND CLINICAL SCIENCES Advanced Trainees will have a comprehensive depth of knowledge of the principles of the foundational sciences.	**Inherited disorders/Disorders with a genetic basis** • Incidence and prevalence of conditions in Australian population • Recognise and screen for the possibility of known genetic variants causing pathology • Referral for genetic counselling, wherever needed • Screening for associated pathology in known inherited disorders • Screening of family members, when indicated **Osteoporosis screening** • Counsel patients with up-to-date best practice guidelines for nutritional lifestyle and exercise recommendations • Identify risk factors for poor bone health • Perform a fracture risk assessment using a validated fracture risk calculator (e.g. FRAX or Garvan tool) • Population-based screening • Provision of preventative care against osteoporosis	

- Screening for secondary osteoporosis, such as:
  - hypogonadism, androgen deprivation
  - glucocorticoid treatment, Cushing's disease
  - premature menopause
  - malabsorption
  - systemic mastocytosis

Therapeutics

- Appropriate prescribing of nutritional therapy and physical activity
- Prescribe anti-resorptive and anabolic bone medications according to best practice, employing an individualised approach
- Hyperparathyroidism management with medical therapies
- Emergent management of severe or symptomatic hypercalcaemia
- Emergent management of severe or symptomatic hypocalcaemia:
  - assessment and management of concomitant magnesium deficiency
  - understand and interpret severity, including monitoring ECG changes
- Prescribing for rickets and osteomalacia
- Take preventative action to avoid or mitigate risk of adverse events from available pharmaceutical 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

- Assessment of nutrition and physical activity, screening for restrictive eating and overexercise, identifying and modifying risk factors for falls (where appropriate)
- FRAX
- Identify and refer patients for surgery where appropriate
  - triage patients with indications for surgical intervention according to condition severity
- Monitoring disease activity
- Monitoring response to therapy
- Review medications (including over-the-counter and non-prescription agents) for drug-drug and drug-disease interactions
- Provide perioperative care
  - long term management of post-surgical hypoparathyroidism and serum calcium management with calcitriol (to avoid nephrocalcinosis/hypercalciuria)
  - patients undergoing parathyroid surgery
  - patients with hypocalcaemia

Imaging

- Bone mineral density (and its limitations)
- Bone scintigraphy
- Localisation of parathyroid adenoma/cancer
  - neck U/S
  - nuclear medicine parathyroid scan
  - 4D CT
- Plain radiographs (e.g. identify and quantify vertebral fractures on thoracolumbar spine radiographs)
- Trabecular bone score, vertebral fracture assessment

Laboratory tests

- 24-hour or spot fasting urine collections for calcium, creatinine, and phosphate. Calculation of TmP/GFR and calcium/creatinine ratio
- Bone-specific ALP
- Bone turnover markers

- Calcium (corrected and ionised)
- Electrolytes
- FGF-23
- iPTH, PTHrp
- Kidney function
- LFT
- Magnesium
- Phosphate
- 25-hydroxyvitamin D
- 1,25-dihydroxyvitamin D
- Screening for:
  - » secondary causes of osteoporosis, including:
    - coeliac disease
    - hypogonadism
    - multiple myeloma
    - TFTs
  - » nutritional deficits, including:
    - albumin
    - electrolytes
    - serum protein
  - » Vitamin D deficiency
- Tmp/GFR

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.

Evidence based practice

- Remain abreast of evidence for best practice and apply this using clinical judgement and individual circumstances in partnership with patients

Management considerations

- Conception counselling
- Conservative management where able and individualised care
- Genetic counselling
- Incorporate environmentally sustainable practices in clinical care
- Pregnancy management:
  - » first presentation of hypercalcaemia in pregnancy
  - » pre-existing hyperparathyroidism
  - » pre-existing hypocalcaemia
  - » pre-existing osteoporosis, including discussion of the duration of lactation
- Osteoporosis considerations:
  - » intermittent secondary amenorrhoea
  - » malabsorption and lactose intolerance symptoms
  - » over exercise
  - » restrictive eating, including meat/protein and dairy avoidance
  - » underweight

Knowledge guide 9 – Neuroendocrine and inherited tumour syndromes

Advanced Training in Endocrinology (Adult Internal Medicine)

KEY PRESENTATIONS AND CONDITIONS

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

Presentations

- Diarrhoea
- Flushing/Sweating
- Hypoglycaemia
- Incidental findings or screening due to associated or familial disease
- Loss of consciousness
- Paroxysmal hypertension
- Rash
- Weight loss

Conditions

- Carcinoid tumours
- Germ cell secretory tumours
- Pancreatic neuroendocrine tumours
  - gastrinoma
  - glucagonoma
  - insulinoma
  - VIPoma
- Paraganglioma/ phaeochromocytoma
- Paraneoplastic humoral syndromes
  - ectopic Cushings syndrome
  - hypercalcaemia
  - SIADH
- MEN syndrome

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.

- Carney complex
- McCune Albright syndrome
- Von Hippel Lindau

*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 and their quality of life when developing a management plan

Manage

- provide evidence-based management
- Identify patients for whom surgery is appropriate, and provide peri-operative medical management as part of multidisciplinary team care
- prescribe therapies tailored to patients' needs and conditions
- recognise potential complications of disease and its management, and initiate preventative strategies

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 depth of knowledge of the principles of the foundational sciences.

Clinical science

- Epidemiology, natural history, prognosis, and genetic predisposition of neuroendocrine disease

Diagnostic work up

- Thorough history, physical examination, and diagnostic work up of people suspected of presenting with neuroendocrine disease or with a predisposition to a neuroendocrine syndrome
- Limitations, indications and interpretation of biochemical assays, imaging, and genetic tests in the diagnostic work up and surveillance of neuroendocrine disorders

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.

Investigations

- Dynamic and invasive endocrine testing
  - » specific understanding of indications and contraindications
    - 72-hour fasting
    - calcium stimulation testing
    - clonidine suppression
    - workup for suspected ectopic Cushings syndrome
- Imaging
  - » indications for localisation and surveillance imaging for specific tumour syndromes
  - » limitations of imaging modalities for specific tumour syndromes:
    - CT
    - endoscopic ultrasound
    - functional PET scan
    - MRI
    - ultrasound
- Laboratory biochemistry
  - » interpretation of biochemical testing in the clinical context with consideration of limitations and interfering medications
  - » properties, principles, and indications for biochemical investigation
    - baseline testing
    - dynamic testing
  - » specific understanding of the timing, patient preparation and assay platforms suited for hormone testing
- Referral for surgical management, including preventative if appropriate

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.

Evidence-based practice

- Remain abreast of evidence for best practice and apply this using clinical judgement and individual circumstances in partnership with patients
- Seek multidisciplinary care/review from centres of neuroendocrine care expertise, such as:
  - » genetics
  - » nuclear medicine
  - » oncology
  - » radiotherapy services
  - » surgical service

General management considerations

- Impact of neuroendocrine tumour/cancer and/or genetic diagnoses on the patient, their partner and, where applicable, their family and carers
- Incorporate environmentally sustainable practices in clinical care

- Longitudinal and multidisciplinary care needs of people with neuroendocrine disease or cancer
- Options for improving equitable access to comprehensive care for individuals, such as:
  - appropriate multicultural resources
  - multidisciplinary involvement
  - use of telehealth and other digital health tools
- Referral for pre-conception counselling, if applicable
-
- Screening and genetic counselling of patients with inherited endocrine disease and referral of their family members if appropriate and with informed consent

Knowledge guide 10 – Male reproductive endocrinology

Advanced Training in Endocrinology (Adult Internal Medicine)

KEY PRESENTATIONS AND CONDITIONS

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

Presentations

- Delayed/incomplete puberty
- Erectile dysfunction
- Gynaecomastia
- Infertility
- Lack/loss of virilisation
- Loss of libido
- Low bone density and/or fractures
- Vasomotor symptoms

Conditions

- Primary testicular failure
  - » chemotherapy
  - » cryptorchidism
  - » genetic conditions
    - congenital anorchia
    - Klinefelter syndrome
  - » infection
  - » radiation
  - » surgical
- Hypogonadotropic hypogonadism
  - » structural:
    - autoimmune endocrinopathies
    - immunotherapy -related hypophysis (IRAEs)
    - infiltrative disorders
      - » histiocytosis (Langerhans)
      - » iron overload syndromes
      - » lymphocytic hypophysis
      - » sarcoidosis
    - isolated GnRH deficiency
    - pituitary or hypothalamic
      - » radiation
      - » trauma
      - » tumours
  - » functional/impact from other conditions (with potential for reversibility)
    - androgen steroid abuse or recovery
    - intercurrent illness
    - medications (e.g. opiates)
    - obesity

*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 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

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** • Congenital adrenal disorders • Hypogonadotropic hypogonadism: » developmental defects and genetic syndromes » infiltrative disorders o iron overload syndromes o lymphoma » Kallmann's syndrome • Infertility » azoospermia/oligospermia: o non-obstructive o obstructive versus » fertility preservation prior to chemoradiation • Primary testicular failure » myotonic dystrophy • Malignancy » germ cell tumours » testicular tumours
EPIDEMIOLOGY, PATHOPHYSIOLOGY, AND CLINICAL SCIENCES Advanced Trainees will have a comprehensive depth of knowledge of the principles of the foundational sciences.	**Diagnostic work up** • Aetiology, pathology, and clinical manifestations of hypogonadism • Impact of environmental, psychological, and comorbid conditions on the HPT axis » determine when hormonal replacement is and when it is not indicated • Thorough history, physical examination and diagnostic work up of men presenting with hypogonadism and/or infertility **Treatment** • Androgen deprivation therapy (e.g., treatment of prostate cancer) • Approach to treatment according to fertility aspirations » indications, contraindications and appropriate prescribing of testosterone replacement therapy, understanding that this is lifelong therapy » monitoring of testosterone therapy and its' potential complications with dose adjustment as needed » utilisation of gonadotrophin therapy for spermatogenesis induction when indicated • Preventative screening as needed: » bone health » cardiovascular » prostate • Androgenic steroid use and abuse » drug types and regimens » suppression and recovery of the HPT axis » side effects, both short- and long-term » strategies to deal with cessation and mental health challenges

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

- Appropriate testicular examination including use of orchidometer

Investigations

- Karyotype
  - » Y chromosome microdeletion analysis when indicated
- Laboratory biochemistry:
  - » specific understanding of the timing, patient preparation and assay platforms suited for sex steroid analysis
- Semen analysis
- Radiology
  - » Bone mineral density
  - » MRI
  - » Ultrasound

Procedures

- Referrals for:
  - » assisted reproduction services
  - » fertility preservation, when appropriate
  - » microscopic testicular sperm extraction to experienced specialist surgeon

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.

Evidence based practice

- Remain abreast of evidence for best practice and apply this using clinical judgement and individual circumstances in partnership with patients

General management considerations

- Cardiovascular risk mitigation
- Impact of sexual dysfunction, infertility and/or genetic diagnoses on the patient, their partner and, where applicable, their family and carers:
  - » consider the sociocultural impact of infertility
- Impact of socioeconomic factors on equitable access to fertility preservation and treatment services
- Incorporate environmentally sustainable practices in clinical care
- Interaction of androgen deficiency as a potential cause and consequence of mental health disorders
- Referrals and access to genetic, sexual, and relationship counselling
- Symptom management
- Side effects of testosterone therapy

Health needs of specific patient groups

- Ethical considerations in discussing fertility preservation procedures with adolescents and their family
- Longitudinal care of men with genetic conditions such as Klinefelter syndrome:
  - » cardiovascular risk screening and mitigation
  - » collaboration with:
    - counselling services
    - education services
    - primary care providers
- Screening in cancer survivorship

Knowledge guide 11 – Female reproductive endocrinology

Advanced Training in Endocrinology (Adult Internal Medicine)

KEY PRESENTATIONS AND CONDITIONS

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

Presentations

- Altered mood
- Delayed or incomplete puberty
- Depression
- Fatigue
- Genito-urinary symptoms
- Hirsutism
- Infertility
- Loss of libido
- Menstrual disturbance
- Sexual dysfunction
- Vasomotor symptoms
- Virilisation

Conditions

- Hyperandrogenism:
  - » adrenal
  - » ovarian
- Menopause
  - » premature menopause
- Polycystic Ovarian Syndrome (PCOS)
- Premenstrual syndrome
  - » Premenstrual dysphoric disorder
- Primary amenorrhea
  - » central
    - isolated GnRH deficiency
    - Kallmanns syndrome
    - pituitary dysfunction
  - » outflow tract disorders
  - » cancer survivorship
  - » functional
- Secondary amenorrhea
  - » functional hypothalamic amenorrhoea
    - eating disorders
    - exercise
    - weight fluctuations
  - » ovarian dysfunction:
    - autoimmune polyendocrinopathy
    - chemotherapy
    - ovarian tumours
    - premature ovarian insufficiency:
      - » fragile X

*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 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

	» gonadal dysgenesis » Turners syndrome ○ radiation » pituitary dysfunction: ○ hyperprolactinaemia ○ immunotherapy-related hypophysis ○ infiltrative disease: » histiocytosis » Langerhans » lymphoma » malignancy » sarcoidosis ○ other endocrinopathies ○ other tumours	
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** • Congenital adrenal hyperplasia (non-classic) • Infertility • Malignancy: » germ cell tumours » ovarian tumours	
EPIDEMIOLOGY, PATHOPHYSIOLOGY, AND CLINICAL SCIENCES Advanced Trainees will have a comprehensive depth of knowledge of the principles of the foundational sciences.	**Pathophysiology** • Normal stages of pubertal development • Regulation of the hypothalamic-pituitary-gonadal axis and hormonal variations in the menstrual cycle and menopause **Diagnostic work up** • Aetiology, pathology, and clinical manifestations of hypogonadism: » evaluation of oestrogen-dependent and oestrogen-independent amenorrhoea • Evaluation of delayed puberty, constitutional and pathological • Evaluation of menopausal symptoms • Impact of environmental, psychological, and comorbid conditions on the HPG axis: » determine when hormonal replacement is and when it is not indicated • Principles of assessing ovarian reserve and fertility preservation in elective and oncology cases • Thorough history, physical examination and diagnostic work up of patient presenting with disorders of sexual development (e.g., delayed puberty), anovulation and/or infertility	

Treatment

- Consideration of contraceptive needs
- Hormone deprivation therapy (often treatment of breast or ovarian cancer)
  - bone preservation
  - cardiovascular risk mitigation
  - endocrine disruptors of the reproductive axis
  - symptom management
- Hormone replacement therapy, including menopausal hormonal therapy (MHT) and monitoring
- Non-hormonal management of menopause
- Indications, contraindications and appropriate prescribing of hormone replacement therapy for patients in different life stages including, knowledge of pubertal induction
- Monitoring of hormone replacement therapy and its potential complications with dose and route of administration adjustment as needed
- Preventative screening as needed:
  - bone health
  - breast
  - cardiovascular
- Treatment options for PCOS including ovulation induction and basic principles of artificial reproduction therapies (ART)

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.

Investigations

- Laboratory biochemistry
  - dynamic testing (e.g., short Synacthen in non-classic-CAH)
  - specific understanding of the timing, patient preparation and assay platforms suited for sex steroid analysis and interfering factors
- Knowledge of timed measurement of reproductive hormones in relation to the menstrual cycle
- Karyotype and genetic testing as applicable
- Radiology
  - bone mineral density
  - MRI
  - ultrasound

Procedures

- When indicated, facilitate referrals for:
  - assisted reproduction services
  - fertility preservation services
  - peri-implantation genetic testing

IMPORTANT SPECIFIC ISSUES

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

Evidence-based practice

- Remain abreast of evidence for best practice and apply this using clinical judgement and individual circumstances in partnership with patients

these on diagnosis and management and integrate these into care.	**General management considerations** • Impact of sexual dysfunction, infertility and/or genetic diagnoses on the patient, their partner and, where applicable, their family/carers » consider the sociocultural impact of infertility • Impact of socioeconomic factors on equitable access to fertility preservation and treatment services • Incorporate environmentally sustainable practices in clinical care • Menopause management in the complex patient: » prothrombotic co-morbidities: o deep vein thrombosis o pulmonary embolism » previous breast cancer » premature ovarian insufficiency • Referrals and access to genetic, sexual, and relationship counselling • Referral for oocyte preservation prior to planned treatment potentially resulting in premature ovarian insufficiency (POI) or at diagnosis of POI with low AMH with residual oocytes **Health needs of specific patient groups** • Care of hormone deprivation therapy recipients • Endocrine care of women with pituitary or adrenal dysfunction through pregnancy, labour, and post-partum • Ethical considerations in discussing fertility preservation procedures with adolescents and their family • Longitudinal and multidisciplinary care needs of women with genetic conditions such as Turner syndrome, such as: » cardiovascular risk screening and mitigation » collaboration with: o counselling services o education services o primary care providers • Screening in cancer survivorship

Knowledge guide 12 – Variations of sex characteristics and gender identity

Advanced Training in Endocrinology (Adult Internal Medicine)

KEY PRESENTATIONS AND CONDITIONS

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

Presentations

- Delayed puberty
- Gender incongruence and/or dysphoria
- Gynaecomastia in male
- Labial fusion in female
- Primary amenorrhoea
- Short stature
- Tall stature
- Subfertility
- Undervirilisation in male
- Virilisation in female

Conditions

- Gender incongruence and/or dysphoria
- Congenital adrenal hyperplasia
- Turners syndrome
- Klinefelter syndrome

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

Differences of sex development (DSD)

- 46-,XX DSD
- 46-,XY DSD:
  - complete gonadal dysgenesis
  - defects in androgen action (CAIS,PAIS)
  - defects in androgen biosynthesis
  - disorders of AMH and AMH receptor
  - gonadal regression
  - LH receptor defects
  - ovotesticular DSD
  - partial gonadal dysgenesis
- Ovotesticular DSD
  - androgen excess (CAH, aromatase deficiency, maternal/exogenous
  - gonadal dysgenesis
  - testicular DSD
  - other, such as:
    - cloacal exstrophy
    - MRKH
    - vaginal atresia

*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 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 depth of knowledge of the principles of the foundational sciences.

Assessment

- Assessment of capacity to consent to gender affirming hormone therapy, psychological/cognitive comorbidities and referral to mental health professionals for formal assessment of capacity when indicated
- Assessment of secondary sexual characteristics and genitals (when indicated for suspected variations of sex characteristics)
- Biological, cultural, and environmental contributions to gender identity
- Factors which may contribute to gender discomfort including:
  - puberty
  - sexuality
  - other psychological co-occurring conditions
- History, including gender development, treatment goals, and co-occurring conditions that may interact with gender affirming hormone therapy
- Understand the range of gender diversity

Treatment

- Consideration of contraceptive needs
- Discussion and appropriate referral for fertility preservation
- Discussion regarding benefits and side effects of treatment
- Indications, contraindications, and appropriate prescribing of masculinising and feminising hormone therapy.
- Management of complications associated with hormone therapy
- Monitoring of hormone therapy and its' potential complications with dose and route of administration adjustment as needed
- Preventative screening and treatment as needed:
  - bone health
  - breast
  - cardiovascular
  - cervical screening and associated difficulties
- Recognise the importance of multi-disciplinary care

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Investigations

- Biochemistry:
  - interpretation of biochemical tests, including factors that affect results such as timing, interaction with medications, patient preparation and different assay platforms
  - endocrine dynamic testing:
    - Synacthen stimulation test for diagnosis of congenital adrenal hyperplasia
    - treatment monitoring and targets
- Karyotype
- Radiology:
  - bone mineral density
  - CT scan
  - MRI
  - ultrasound

Procedures

- Hormone implants (optional)

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.

- Creation of a culturally safe clinical environment for trans and gender diverse people (e.g. preferred names, pronouns, gender identity)
- Gender dysphoria – the distress associated with a conflict between gender identity and anatomy or sex
- Marginalisation faced by the trans and gender diverse community, including barriers to accessing healthcare
- National and state-specific legislation regarding the prescription of gender affirming hormone therapy
- Spectrum of gender identities, including non-binary genders
- Transgender – gender identity differs from sex designated at birth