Advanced Training Curricula Renewal

Curriculum Standards

Advanced Training in Respiratory Medicine

(Adult Medicine)

May 2024

RACP Specialists. Together

About this document

The new Advanced Training in Respiratory Medicine (Adult Medicine) curriculum consists of curriculum standards and learning, teaching, and assessment (LTA) programs.

This document outlines the curriculum standards for Advanced Training in Respiratory Medicine (Adult Medicine) for trainees and supervisors. The curriculum standards should be used in conjunction with the Advanced Training in Respiratory Medicine (Adult Medicine) 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.

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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

Respiratory medicine is a subspecialty of internal medicine that encompasses diseases of the respiratory system, including the upper airway, lungs, pleura, chest wall, and ventilatory control system. It incorporates knowledge of normal and disordered respiratory structure and function, clinical respiratory diseases, and the specialised diagnostic techniques, tests, and procedures employed in clinical assessment. It involves an understanding of the interaction of the respiratory system with the external environment.

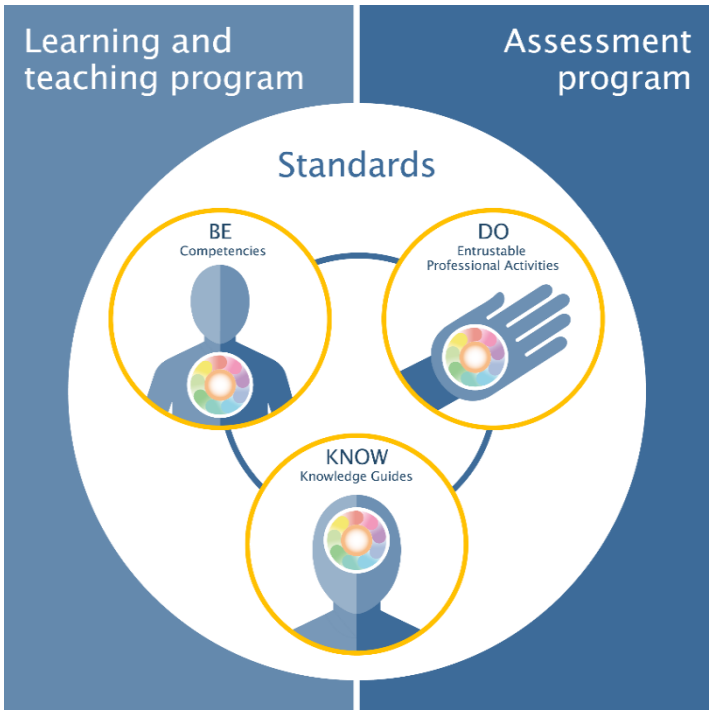
Respiratory diseases are one of the most common diseases in the community and include conditions such as asthma, COPD, pneumonia, sleep-disordered breathing, and lung cancer. Respiratory medicine involves the promotion of hygiene and health practices to reduce the transmission and severity of respiratory infections and manage communicable diseases. This includes occupational and environmental causes (including smoking and vaping) of lung disease. Respiratory medicine involves research, education, early detection, and screening for respiratory conditions and sleep-disordered breathing, holistic care for people with heritable / chronic conditions (including cystic fibrosis) and the management of acute and chronic respiratory failure, both at home and in the acute setting.

Respiratory physicians:

- **Diagnose and manage patients in a variety of settings.** Respiratory physicians see patients with a wide range of respiratory and sleep conditions while working across several environments including academic, public hospital, private, metropolitan, and regional.

- **Conduct and interpret clinical, radiological and laboratory investigations** for patients presenting with a variety of respiratory and sleep symptoms, with reference to underlying physiology.
- **Perform interventions** including oxygen therapy, assisted ventilation, aerosol therapy, pleural procedures, and bronchoscopy.
- **Provide acute, longitudinal, and end-of-life care.** Respiratory physicians establish long-term therapeutic relationships with patients and their families, using a multidisciplinary approach. They work to manage and ease patient discomfort both acutely and in the practice of end-of-life care.
- **Apply a multidisciplinary approach.** Respiratory physicians are required to work effectively as part of a multidisciplinary team. They may be called upon to be the team leader and have a collaborative approach focused on building relationships.
- **Work sensitively with a variety of patients.** Respiratory physicians work with patients to address determinants of health that affect them and their access to needed health services or resources, providing culturally safe education and support in a professional, empathic, and non-judgemental manner.
- **Demonstrate strong communication skills.** Respiratory physicians must develop an effective interviewing technique and an ability to relate to patients from all walks of life. They appreciate when referral to a more appropriate or more qualified practitioner in a particular subspecialty is necessary.
- **Manage resources for the benefit of patients and communities.** Respiratory physicians apply a biopsychosocial approach to ensure the delivery of efficient, cost-effective, and safe care for the benefit of their patients and communities.
- **Apply a scholarly approach.** Respiratory physicians apply and, at times, conduct research to discover better ways of understanding, diagnosing, treating, and preventing disease.
- **Advocate for improved respiratory health in the community.** Respiratory physicians advocate on both an individual patient and broader community level on issues including occupational lung diseases, lung cancer screening, smoking, and vaping.

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 10 domains of practice for all physicians.

Learning, teaching, and assessment structure

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

Advanced Training learning, teaching, and assessment structure

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

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

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

[1] References to patients in the remainder of this document may include their families 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, supsupervising, and teaching[2].

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

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

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

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

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

Research

Professional standard: Physicians support creation, dissemination and translation of knowledge and practices applicable to health.[2] They do this by engaging with and critically appraising research, and applying it in policy and practice to improve the health outcomes of patients and populations.

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

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

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

Cultural safety

Professional standard:

Physicians engage in iterative and critical self-reflection of their own cultural identity, power, biases, prejudices, and practising behaviours. Together with the requirement of understanding the cultural rights of the community they serve; this brings awareness and accountability for the impact of the physician's own culture on decision making and health care 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].

This is a placeholder for the competencies in the cultural safety domain, which are in development and will be added at a later date.

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

- 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 health professionals and health care 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.

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 and their families 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 New Zealand.

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

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

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

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

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

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

Entrustable Professional Activities

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

#	Theme	Title
1	Team leadership	Lead a team of health professionals
2	Supervision and teaching	Supervise and teach professional colleagues
3	Quality improvement	Identify and address failures in health care delivery
4	Clinical assessment and management	Clinically assess and manage the ongoing care of patients
5	Management of transitions in care	Manage transition of patient care between health professionals, providers, and contexts
6	Acute care	Manage the early care of acutely unwell patients
7	Longitudinal care	Manage and coordinate longitudinal care of patients with chronic illness, disability, and/or long-term health issues
8	Communication with patients	Discuss diagnoses and management plans with patients
9	Prescribing	Prescribe 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
13	Palliative care	Manage the care of patients at the end of their lives

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 with other disciplines to develop optimal, goal-centred plans for patients • use evidence-based care to meet the needs of patients or populations • assess and effectively manage clinical risk in various scenarios • demonstrate clinical competence and skills by effectively supporting team members	• demonstrate adequate knowledge of health care issues by interpreting complex information • assess the spectrum of problems to be addressed • apply medical knowledge to assess the impact and clinical outcomes of management decisions • provide coordinated and quality health care for populations or patients as a member of a multidisciplinary team
Communication	• provide support and motivate patients or populations and health professionals by effective communication • demonstrate a transparent, consultative style by engaging patients, families, carers, relevant professionals, and/or the public in shared decision making • work with patients, families, carers, and other health professionals to resolve conflict that may arise when planning and aligning goals • demonstrate rapport with people at all levels by tailoring messages to different stakeholders	• communicate adequately with colleagues • communicate adequately with patients, families, carers, and/or the public • respect the roles of team members

	• recognise the cognitive, mental and social impact of illness on patients and their family members and carers and demonstrate appropriate empathy in all aspects of communication.	
Quality and safety	• identify opportunities to improve care by participating in surveillance and monitoring of adverse events and 'near misses' • identify and participate in activities within systems to reduce errors, improve patient and population safety, and cost-effectiveness • place safety and quality of care first in all decision making	• participate in audits and other activities that affect the quality and safety of patients' care • participate in interdisciplinary collaboration to provide effective health services and operational change • use information resources and electronic medical record technology where available
Teaching and learning	• regularly self-evaluate personal professional practice, and implement changes based on the results • 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
Cultural safety	• demonstrate culturally competent relationships with professional colleagues and patients • demonstrate respect for diversity and difference • take steps to minimise unconscious bias, including the impact of gender, religion, cultural beliefs, and socioeconomic background on decision making	• demonstrate awareness of cultural diversity and unconscious bias • work effectively and respectfully with people from different cultural backgrounds
Ethics and professional behaviour	• promote a team culture of shared accountability for decisions and outcomes • encourage open discussion of ethical and clinical concerns • respect differences of multidisciplinary team members • understand the ethics of resource allocation by aligning optimal patients and organisational care	• support ethical principles in clinical decision making • maintain standards of medical practice by recognising the health interests of patients or populations as primary responsibilities • respect the roles and expertise of other health professionals • work effectively as a member of a team

	• 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	• 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 health care 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 • empower self and promote culture among colleagues to maintain psychological wellbeing, efficient workload management and distribution, and healthy work-life balance • identify struggling junior medical officers, and take appropriate steps to resolve issues and escalate as appropriate	• understand the range of personal and other team members' skills, expertise, and roles • acknowledge and respect the contribution of all health professionals involved in patients' care • participate effectively and appropriately in multidisciplinary teams • seek out and respect the perspectives of multidisciplinary team members when making decisions
Health policy, systems, and advocacy	• engage in appropriate consultation with stakeholders on the delivery of health care • advocate for the resources and support for health care teams to achieve organisational priorities • remove self-interest from solutions to health advocacy issues • influence the development of organisational policies and	• communicate with stakeholders within the organisation about health care delivery • understand methods used to allocate resources to provide high-quality care • promote the development and use of organisational policies and procedures

	procedures to optimise health outcomes • identify the determinants of health of the population, and mitigate barriers to access to care	

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	• 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

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

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

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

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 • adhere to best practice guidelines • audit clinical guidelines and outcomes • contribute to the development of policies and protocols designed to protect patients and enhance health care • monitor one's own practice and develop individual improvement plans.	
Behaviours		
Professional practice framework domain	**Ready to perform without supervision** Expected behaviours of a trainee who can routinely perform this activity without needing supervision The trainee will:	**Requires some supervision** Possible behaviours of a trainee who needs some supervision to perform this activity The trainee may:
Medical expertise	• use population health outcomes to identify opportunities for improvement in delivering appropriate care • regularly review patients' or population health outcomes to identify opportunities for improvement in delivering appropriate care • evaluate environmental and lifestyle health risks, and advocate for healthy lifestyle choices • use standardised protocols to adhere to best practice and prevent the occurrence of wrong-site, wrong-patient procedures • regularly monitor personal professional performance	• contribute to processes on identified opportunities for improvement • recognise the importance of prevention and early detection in clinical practice • use local guidelines to assist patient care decision making
Communication	• support patients to have access to, and use, easy-to-understand, high-quality information about health care • support patients to share decision making about their own health care, to the extent they choose • assist patients' access to their health information, as well as complaint and feedback systems • discuss with patients any safety and quality concerns they have relating to their care • implement the organisation's open disclosure policy	• demonstrate awareness of the evidence for consumer engagement and its contribution to quality improvement in health care • 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 preventive action plans • participate in systems for surveillance and monitoring of adverse events and 'near misses', including reporting such events • ensure that identified opportunities for improvement are raised and reported appropriately • use clinical audits and registries of data on patients' experiences and outcomes, learnings from incidents, and complaints to improve health care	• demonstrate understanding of a systematic approach to improving the quality and safety of health care
Teaching and learning	• translate quality improvement approaches and methods into practice • participate in professional training in quality and safety to ensure a contemporary approach to safety system strategies • supervise and manage the performance of junior colleagues in the delivery of high-quality, safe care	• work within organisational quality and safety systems for the delivery of clinical care • use opportunities to learn about safety and quality theory and systems
Research	• ensure that any protocol for human research is approved by a human research ethics committee, in accordance with the national statement on ethical conduct in human research	• understand that patients' participation in research is voluntary and based on an appropriate understanding about the purpose, methods, demands, risks, and potential benefits of the research
Cultural safety	• undertake professional development opportunities that address the impact of cultural bias on health outcomes	• communicate in a manner that is appropriate to patients' language and cultural needs
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 health care quality	• comply with professional regulatory requirements and codes of conduct
Judgement and decision making	• use decision-making support tools, such as guidelines, protocols, pathways, and reminders • analyse and evaluate current care processes to improve health care	• access information and advice from other health practitioners to identify, evaluate, and improve patients' care management

Leadership, management, and teamwork	• formulate and implement quality improvement strategies as a collaborative effort involving all key health professionals • support multidisciplinary team activities to lower patients' risk of harm, and promote interdisciplinary programs of education • 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 the development, implementation, evaluation, and monitoring of governance processes • participate regularly in multidisciplinary meetings where quality and safety issues are standing agenda items, and where innovative ideas and projects for improving care are actively encouraged • measure, analyse, and report a set of specialty-specific process of care and outcome clinical indicators, and a set of generic safety indicators • take part in the design and implementation of the organisational systems for: » defining the scope of clinical practice » performance monitoring and management » clinical, and safety and quality education and training	• 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

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 a 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	• elicit an accurate, 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 via reasonable differential diagnoses • assess the severity of problems, the likelihood of complications, and clinical outcomes • develop management plans based on relevant guidelines, and consider the balance of benefit and harm by taking patients' personal set of circumstances into account	• take patient-centred histories, considering psychosocial factors • perform accurate physical examinations • recognise and correctly interpret abnormal findings • synthesise pertinent information to direct the clinical encounter and diagnostic categories • develop appropriate management plans
Communication	• communicate openly, listen, and take patients' concerns seriously, giving them adequate opportunity to ask questions • provide information to patients and their family or carers to enable them to make fully informed decisions from various diagnostic, therapeutic, and management options • communicate clearly, effectively, respectfully, and promptly with	• anticipate, read, and respond to verbal and nonverbal cues • demonstrate active listening skills • communicate patients' situations to colleagues, including senior clinicians

	other health professionals involved in patients' care	
Quality and safety	• demonstrate safety skills, including infection control, adverse event reporting, and effective clinical handover • recognise and effectively deal with aggressive and violent patient behaviours through appropriate training • obtain informed consent before undertaking any investigation or providing treatment (except in an emergency) • ensure patients are informed of the material risks associated with any part of proposed management plans	• perform hand hygiene, and take infection control precautions at appropriate moments • take precaution against assaults from confused or agitated patients, ensuring appropriate care of patients • document history and physical examination findings, and synthesise with clarity and completeness
Teaching and learning	• set defined objectives for clinical teaching encounters, and solicit feedback on mutually agreed goals • regularly reflect upon and self-evaluate professional development • obtain informed consent before involving patients in teaching activities • turn clinical activities into an opportunity to teach, appropriate to the setting	• deliver teaching considering learners' level of training
Research	• search for, find, compile, analyse, interpret, and evaluate information relevant to the research subject	• refer to guidelines and medical literature to assist in clinical assessments when required • demonstrate an understanding of the limitations of evidence and the challenges of applying research in daily practice
Cultural safety	• use plain-language patient education materials, and demonstrate cultural and linguistical sensitivity • demonstrate effective and culturally competent communication and care for Aboriginal and Torres Strait Islander and Māori 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	• display respect for patients' cultures, and attentiveness to social determinants of health • display an understanding of at least the most prevalent cultures in society, and an appreciation of their sensitivities • appropriately access interpretive or culturally focused services

	• acknowledge patients' beliefs and values, and how these might impact on health	
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 proxy decision makers appropriately	• demonstrate professional conduct, honesty, and integrity • consider patients' decision-making capacity • identify patients' preferences regarding management and the role of families in decision making • not advance personal interest or professional agendas at the expense of patient or social welfare
Judgement and decision making	• apply knowledge and experience to identify patients' problems, making logical, rational decisions, and acting to achieve positive outcomes for patients • use a holistic approach to health considering comorbidity, uncertainty, and risk • use the best available evidence for the most effective therapies and interventions to ensure quality care	• demonstrate clinical reasoning by gathering focused information relevant to patients' care • recognise personal limitations, and seek help in an appropriate way when required
Leadership, management, and teamwork	• work effectively as a member of multidisciplinary teams to achieve the best health 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 the 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 a 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 • incorporate an understanding of public and private funding, the benefits and drawbacks of both models, and local resource availability into optimal management of patients in multiple settings, 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 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	• understand the details of patients' conditions, illness severity, and potential emerging issues with appropriate actions • provide accurate summaries of patients' information, with accurate identification of problems or issues
Communication	• write relevant and detailed medical record entries, including clinical assessments and management plans • write comprehensive and accurate summaries of care, including discharge summaries, clinic letters, and transfer documentation • initiate and maintain verbal communication with other health professionals, when required • communicate with patients, families, and/or carers about transition of care, and engage and support these parties in decision making	• 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 a poor transition of care, and mitigate this risk	• ensure that handover is complete, or work to mitigate risks if the handover was incomplete

	• 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 an understanding of the medicolegal context of written communications	• ensure all outstanding results or procedures are followed up by receiving units and clinicians • keep patients' information secure, adhering to relevant legislation regarding personal information and privacy
Teaching and learning	• integrate clinical education in handover sessions and other transition of care meetings • tailor clinical education to the level of the professional parties involved	• take opportunities to teach junior colleagues during handover, as necessary
Cultural safety	• communicate with careful consideration to health literacy, language barriers, and culture 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
Ethics and professional behaviour	• disclose and share only contextually appropriate medical and personal information • demonstrate an 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 an understanding of the additional complexity related to some types of information, such as genetic information and blood-borne-virus status, and seek appropriate advice about disclosure of such information • interact in a collegiate and collaborative way with professional colleagues during transitions of care	• maintain respect for patients, 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	• 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	• recognise factors that impact on the transfer of care, and help subsequent health professionals

	• demonstrate an understanding of the medical governance of patient care, and the differing roles of team members • show respect for the roles and expertise of other health professionals, and work effectively as a member of professional teams • ensure that multidisciplinary teams provide the opportunity for patients' engagement and participation when appropriate	to understand the issues to continue care • work to overcome the potential barriers to continuity of care, appreciating the role of handover in overcoming these barriers
Health policy, systems, and advocacy	• contribute to processes for managing risks, and identify strategies for improvement in transition of care • engage in organisational processes to improve transitions of care, such as formal surveys or follow-up phone calls after hospital discharge	• factor transport issues and costs to patients into arrangements for transferring patients to other settings

EPA 6: Acute care

Theme	Acute care	AT-EPA-06
Title	**Manage the early care of acutely unwell patients**	
Description	This activity requires the ability to: • assess seriously unwell or injured patients, and initiate management • recognise clinical deterioration, and respond by following the local process for escalation of care • recognise and manage acutely unwell patients who require resuscitation • lead the resuscitation team initially, and involve other necessary services • liaise with transport services and medical teams • perform this activity primarily in inpatient settings.	
Behaviours		
Professional practice framework domain	**Ready to perform without supervision** Expected behaviours of a trainee who can routinely perform this activity without needing supervision	**Requires some supervision** Possible behaviours of a trainee who needs some supervision to perform this activity
	The trainee will:	The trainee may:
Medical expertise	• recognise immediate life-threatening conditions and deteriorating and critically unwell patients, and respond appropriately • perform advanced life support, according to resuscitation council guidelines, to a high level of advanced resuscitation skills • demonstrate knowledge of potential risks and complications of resuscitation • effectively assess, diagnose, and manage acute undifferentiated clinical presentations • select investigations that ensure maximum patient safety through excluding or diagnosing critical patient issues • systematically identify causes of acute deterioration in health status and levels of physical and cognitive functioning • manage escalations or transitions of care in a proactive and timely manner • develop plans of multidisciplinary treatment, rehabilitation, and secondary prevention following acute events • provide clear and effective discharge summaries with recommendations for ongoing care	• 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

	• optimise medical management before, during, and after operations	
Communication	• communicate clearly with other team members, and coordinate efforts of multidisciplinary team members • use closed-loop and clear communication with other health care team members during resuscitation • facilitate early communication with patients, families, carers, and health care team members to allow shared decision making • negotiate realistic treatment goals, and determine and explain 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 individual patients' level of health literacy and understanding of agreed care decisions	• 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 • 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	• evaluate the quality of processes through well-designed audits • recognise the risks and benefits of operative interventions • raise appropriate issues for review at morbidity and mortality meetings • evaluate the quality and safety processes implemented within the workplace, and identify gaps in their structure
Teaching and learning	• demonstrate effective supervision skills and teaching methods which	• mentor and train others to enhance team effectiveness

	are adapted to the context of the training • encourage questioning among junior colleagues and students in response to unanswered clinical questions • seek guidance and feedback from health care teams to reflect on encounters and improve future patients' care	• 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 • evaluate the value of treatments in terms of relative and absolute benefits, cost, potential patient harm, and feasibility • evaluate the applicability of the results of clinical studies to the circumstances of individual patients, especially those with multiple comorbidities • specify research evidence to the needs of individual patients	• demonstrate efficient searching of literature databases to retrieve evidence • use information from credible sources to aid in decision making • refer to evidence-based clinical guidelines and protocols on acutely unwell patients • demonstrate an understanding of the limitations of the evidence and the challenges of applying research in daily practice
Cultural safety	• negotiate health care decisions in a culturally appropriate way by considering variation in family structures, cultures, religion, or belief systems • integrate culturally appropriate care of Aboriginal and Torres Strait Islander and Māori 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 health care
Ethics and professional behaviour	• develop management plans that are based on medical assessments of the clinical conditions and multidisciplinary assessments of functional capacity • advise patients of their rights to refuse medical therapy, including life-sustaining treatment • consider the consequences of delivering treatment that is deemed futile, directing to other care as appropriate • 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	• 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

Judgement and decision making	• recognise the need for escalation of care, escalating to appropriate staff or services • integrate evidence related to questions of diagnosis, therapy, prognosis, risks, and causes into clinical decision making • reconcile conflicting advice from other specialties, applying judgement in making clinical decisions in the presence of uncertainty • use care pathways effectively, including identifying reasons for variations in care	• involve additional staff to assist in a timely fashion when required • recognise personal limitations, and seek help in an appropriate way when required
Leadership, management, and teamwork	• work collaboratively with staff in the emergency department, intensive care, and other subspecialty inpatient units • manage the transition of acute medical patients through their hospital journey • lead a team by providing engagement while maintaining a focus on outcomes	• collaborate with and engage other team members, based on their roles and skills • ensure appropriate multidisciplinary assessments 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 patients' care based on need, and consider available health care 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, families, and/or carers • 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	• enable patients to more meaningfully engage in management plans by enhancing health literacy and encouraging positive health related behaviours • encourage patients' access to self-monitoring devices and assistive technologies • communicate with multidisciplinary team members, and involve patients in that dialogue	• provide healthy lifestyle advice and information to patients on the importance of self-management • work in partnership with patients to develop and refine management plans
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

	• 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 • participate in quality improvement processes impacting on patients' abilities to undertake normal activities of daily living	• identify activities that may improve patients' quality of life
Teaching and learning	• contribute to the development of clinical pathways for chronic diseases management based on current clinical guidelines • educate patients to recognise and monitor their symptoms, and undertake strategies to assist their recovery	• use clinical practice guidelines for chronic diseases management
Research	• prepare reviews of literature on patients' encounters to present at journal club meetings • search for and critically appraise evidence to resolve clinical areas of uncertainty	• search literature using Problem / Intervention / Comparison / Outcome (PICO) format • recognise appropriate use of review articles
Cultural safety	• encourage patients from culturally and linguistically diverse backgrounds to join local networks to receive the support needed for long-term self-management	• 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, and appropriately identify and use alternative decision makers	• share information between relevant service providers • acknowledge and respect the contribution of health professionals involved in patients' care
Judgement and decision making	• implement stepped care pathways in the management of chronic diseases and disabilities • recognise patients' needs in terms of both internal resources and external support on a long-term health care journey	• 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	• participate in multidisciplinary care for patients with chronic diseases and disabilities, including organisational and community care on a continuing basis, appropriate to patients' context

	• develop collaborative relationships with patients, families, carers, and a range of health professionals	
Health policy, systems, and advocacy	• use health screening for early intervention and chronic diseases management • assess alternative models of health care delivery to patients with chronic diseases and disabilities • participate in government initiatives for chronic diseases management to reduce hospital admissions and improve patients' quality of life • help patients access initiatives and services for patients with chronic diseases and disabilities	• demonstrate awareness of government initiatives and services available for patients with chronic diseases and disabilities, and display knowledge of how to access them

EPA 8: Communication with patients

Theme	Communication with patients	AT-EPA-08
Title	**Discuss 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 and investigations, and give them adequate opportunity to question or refuse interventions and treatments • seek to understand the concerns and goals of patients, and plan management in partnership with them • provide information to patients to enable them to make informed decisions about diagnostic, therapeutic, and management options	• apply knowledge of the scientific basis of health and disease to the management of patients • demonstrate an understanding of the clinical problem being discussed • formulate management plans in partnership with patients
Communication	• use an appropriate communication strategy and modalities for communication, such as emails, face-to-face, or phone calls • elicit patients' views, concerns, and preferences, promoting rapport • provide information to patients in plain language, avoiding jargon,	• select appropriate modes of communication • engage patients in discussions, avoiding the use of jargon • check patients' understanding of information • adapt communication style in response to patients' age, developmental level, and cognitive,

	acronyms, and complex medical terms • encourage questions, and answer them thoroughly • ask patients to share their thoughts or explain their management plan in their own words, to verify understanding • convey information considerately and sensitively to patients, seeking clarification if unsure of how best to proceed • treat children and young people respectfully, and listen to their views • recognise the role of family or carers and, when appropriate, encourage patients to involve their family or carers in decisions about their care	physical, cultural, socioeconomic, and situational factors • collaborate with patient liaison officers as required
Quality and safety	• discuss with patients their condition and the available management options, including potential benefits and harms • provide information to patients in a way they can understand before asking for their consent • consider capacity for decision making and consent, including young people or patients with cognitive disability • recognise and take precautions where patients may be vulnerable, such as issues of child protection, self-harm, or elder abuse • participate in processes to manage patient complaints	• inform patients of the material risks associated with proposed management plans • treat information about patients as confidential
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	• respond appropriately to information sourced by patients, and to patients' knowledge regarding their condition
Research	• provide information to patients that is based on guidelines issued by the National Health and Medical 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

Cultural safety	• demonstrate effective and culturally competent communication with Aboriginal and Torres Strait Islander and Māori 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	• 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 • develop a high standard of personal conduct, consistent with professional and community expectations • support patients' rights to seek second opinions	• respect the preferences of patients • communicate appropriately, consistent with the context, and respect patients' needs and preferences • maximise patient autonomy, and support their decision making • avoid sexual, intimate, and/or financial relationships with patients • demonstrate a caring attitude towards patients • respect patients, including protecting their rights to privacy and confidentiality • behave equitably towards all, irrespective of gender, age, culture, socioeconomic status, sexual preferences, beliefs, contribution to society, illness-related behaviours, or the illness itself • use social media ethically and according to legal obligations to protect patients' confidentiality and privacy
Leadership, management, and teamwork	• communicate effectively with team members involved in patients' care, and with patients, 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 health care team members to align them with the appropriate resources • facilitate an environment where all team members feel they can	• answer questions from team members • summarise, clarify, and communicate responsibilities of health care team members • keep health care team members focused on patient outcomes

	contribute and their opinion is valued • communicate accurately and succinctly, and motivate others on the health care team	
Health policy, systems, and advocacy	• collaborate with other services, such as community health centres and consumer organisations, to help patients navigate the healthcare system	• communicate with and involve other health professionals as appropriate

EPA 9: Prescribing

Theme	Prescribing	AT-EPA-09
Title	**Prescribe 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, families, and/or carers about the benefits and risks of proposed therapies • provide instructions on medication administration effects and side effects • monitor medicines for efficacy and safety • review medicines and interactions, and cease where appropriate • collaborate with pharmacists.	
Behaviours		
Professional practice framework domain	**Ready to perform without supervision** Expected behaviours of a trainee who can routinely perform this activity without needing supervision 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' conditions 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 • plan for follow up and monitoring • consider individualised prescribing and education regarding device / method to optimise drug delivery based on patient factors	• be aware of potential side-effects and practical prescription points, such as medication compatibility and monitoring in response to therapies • select medicines for common conditions appropriately, safely, and accurately • demonstrate an understanding of the rationale, risks, benefits, side effects, contraindications, dosage, and drug interactions • identify and manage adverse events
Communication	• discuss and evaluate the risks, benefits, and rationale of treatment options, making decisions in partnership with patients • write clear and legible prescriptions in plain language, and include specific indications for the anticipated duration of therapy • 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	• 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 • seek further advice from experienced clinicians or pharmacists when appropriate

	• describe how the medication should and should not be administered, including any important relationships to food, time of day, and other medicines being taken, including use of spacers and review of inhaler technique • 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	
Quality and safety	• review medicines regularly to reduce non-adherence, and monitor treatment effectiveness, possible side effects, and drug interactions, ceasing unnecessary medicines • use electronic prescribing tools where available, and access electronic drug references to prevent errors caused by drug interactions and poor handwriting • prescribe new medicines only when they have been demonstrated to be safer or more effective at improving patient-oriented outcomes than existing medicines • participate in clinical audits to improve prescribing behaviour, including an approach to polypharmacy and prescribing cascade • report suspected adverse events to the Advisory Committee on Medicines, and record it in patients' medical records • use national real-time prescription monitoring services as required when prescribing drugs of dependence	• check the dose before prescribing • monitor side effects of medicines prescribed • identify medication errors, and institute appropriate measures • use electronic prescribing systems safely • rationalise medicines to avoid polypharmacy
Teaching and learning	• use continuously updated software for computers and electronic prescribing programs • ensure patients understand management plans, including addressing adherence issues • use appropriate guidelines and evidence-based medicine resources to maintain a working knowledge of current medicines,	• undertake continuing professional development to maintain currency with prescribing guidelines • reflect on prescribing, and seek feedback from a supervisor

	keeping up to date on new medicines	
Research	• critically appraise research material to ensure any new medicine improves patient-oriented outcomes more than older medicines, and not just more than placebo • use sources of independent information about medicines that provide accurate summaries of the available evidence on new medicines	• make therapeutic decisions according to the best evidence • recognise where evidence is limited, compromised, or subject to bias or conflict of interest
Cultural safety	• explore patients' understanding of and preferences for non-pharmacological and pharmacological management • offer patients effective choices based on their expectations of treatment, health beliefs, and cost • interpret and explain information to patients at the appropriate level of their health literacy • anticipate queries to help enhance the likelihood of medicines being taken as advised • ensure appropriate information is available at all steps of the medicine management pathway	• appreciate patients' cultural and religious backgrounds, attitudes, and beliefs, and how these might influence the acceptability of pharmacological and non-pharmacological management approaches
Ethics and professional behaviour	• provide information to patients about: » action of medications » administration advice » cessation plans » indications » potential side effects • make prescribing decisions based on good safety data when the benefits outweigh the risks involved • demonstrate understanding of the ethical implications of pharmaceutical industry-funded research and marketing	• consider the efficacy of medicines in treating illnesses, including the relative merits of different non-pharmacological and pharmacological approaches • follow regulatory and legal requirements and limitations regarding prescribing • follow organisational policies regarding pharmaceutical representative visits and drug marketing
Judgement and decision making	• use a systematic approach to select treatment options • use medicines safely and effectively to get the best possible results • choose suitable medicines only if medicines are considered necessary and of benefit to patients • prescribe medicines appropriately to patients' clinical needs, in doses that meet their individual	• recognise personal limitations, and seek help in an appropriate way when required • consider the following factors for all medicines: » contraindications » cost to patients, families, and the community » funding and regulatory considerations » generic versus brand medicines » interactions

	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	» risk-benefit analysis
Leadership, management, and teamwork	• interact with medical, pharmacy, and nursing staff to ensure safe and effective medicine use	• work collaboratively with pharmacists • participate in medication safety and morbidity and mortality meetings
Health policy, systems, and advocacy	• choose medicines in relation to comparative efficacy, safety, and cost-effectiveness against medicines already on the market • prescribe for individual patients, considering history, current medicines, allergies, and preferences, ensuring that resources are used wisely for the benefit of patients	• prescribe in accordance with the organisational policy

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 • maintain logbook of procedures, and participate in continuing education • perform open disclosure and reporting of incidents when required • interpret the results and outcomes of procedures, including imaging and reports, and communicate these to patients and referring doctors.	
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 • confidently and consistently perform a range of common procedures • ensure team members are aware of all allergies / adverse reactions identified, and take precautions to avoid allergies / adverse reactions during procedures • ensure patients have complied with procedure preparation • confirm the correct position / site / side / level on patients for planned procedures • recognise and effectively manage complications arising during or after procedures • recognise and correctly interpret normal and abnormal findings of diagnostic procedures • demonstrate a level of procedural proficiency in flexible bronchoscopy / intercostal catheter insertion prior to focusing on more advanced procedures (e.g., radial	• assess patients and identify indications for procedures • check for allergies and adverse reactions • consider risks and complications of procedures • interpret results of common diagnostic procedures • organise and document post-procedure review of patients

	endobronchial ultrasound, rigid bronchoscopy, cryotherapy) or pleural procedures (tunnelled pleural catheter, thoracoscopy), and understand their role in respiratory scope of practice	
Communication	• accurately document procedures in 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 patients without providing a broader context • help patients, families, and carers choose the 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 an appropriate clinical handover
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 • maintain procedural logbooks with incorporation of procedure details, outcomes, and adverse events • engage in regular self-audit processes, and implement quality improvement changes when required	• provide information in a manner so that patients, families, and carers are fully informed when consenting to any procedures • demonstrate an inconsistent application of aseptic technique • identify patients using approved patients' identifiers before any treatment or intervention is initiated • attempt to perform a procedure in an unsafe environment
Teaching and learning	• refer to and/or be familiar with relevant published procedural	• participate in continued professional development

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

Health policy, systems, and advocacy	• discuss serious incidents at appropriate clinical review meetings • initiate local improvement strategies in response to serious incidents • use resources efficiently when performing procedures	• perform procedures in accordance with organisational guidelines and policies

Procedure / investigation	Select and evaluate the anticipated value of the procedure	Obtain informed consent	#Procedural proficiency & competence	Manage / discuss complications	Provide after-care for patients	Interpret results	Communicate with patients and other health care providers	Maintenance of procedural logbook and continuing education
Advanced therapeutic modality usage: APC, cryotherapy, endobronchial valve insertion, Nd-YAG laser	✓	✓	O	✓	✓	✓	✓	✓
Arterial blood gas	✓	✓	M	✓	✓	✓	✓	
Autologous blood patch pleurodesis	✓	✓	D	✓	✓	✓	✓	✓
Bronchial thermoplasty	✓	✓	O	✓	✓	✓	✓	✓
Bronchoscopy	✓	✓	M	✓	✓	✓	✓	✓
Central airway debulking or stent placement	✓	✓	O	✓	✓	✓	✓	✓
Closed pleural biopsy	✓	✓	O	✓	✓	✓	✓	✓
Cryobiopsy	✓	✓	O	✓	✓	✓	✓	✓
Fine bore intercostal catheter insertion	✓	✓	M	✓	✓	✓	✓	✓
Intrapleural fibrinolysis	✓	✓	D	✓	✓	✓	✓	✓
Large bore drain insertion	✓	✓	O	✓	✓	✓	✓	✓
Linear endobronchial ultrasound	✓	✓	D	✓	✓	✓	✓	✓
Navigational bronchoscopic techniques	✓	✓	O	✓	✓	✓	✓	✓
Needle thoracentesis	✓	✓	M	✓	✓	✓	✓	✓
Oesophageal ultrasound with ultrasound bronchoscope (EUS-B)	✓	✓	O	✓	✓	✓	✓	✓
Radial endobronchial ultrasound	✓	✓	D	✓	✓	✓	✓	✓
Rigid bronchoscopy	✓	✓	O	✓	✓	✓	✓	✓
Talc pleurodesis	✓	✓	M	✓	✓	✓	✓	✓

Procedure / investigation	Select and evaluate the anticipated value of the procedure	Obtain informed consent	#Procedural proficiency & competence	Manage / discuss complications	Provide after-care for patients	Interpret results	Communicate with patients and other health care providers	Maintenance of procedural logbook and continuing education
Thoracic and pleural ultrasound	✓	✓	M	✓	✓	✓	✓	✓
Transbronchial forceps lung biopsy	✓	✓	D	✓	✓	✓	✓	✓
Tunnelled indwelling pleural catheter insertion and removal	✓	✓	D	✓	✓	✓	✓	✓

These procedures may be considered within scope of practice in Respiratory Medicine, however additional training and demonstration of competence is suggested: M – Mandatory, D – Desired, O – Optional (depending on exposure). Procedural competence includes procedure set up.

EPA 11: Investigations

Theme	Investigations	AT-EPA-11
Title	**Select, organise, and interpret investigations**	
Description	This activity requires the ability to: • select, plan, and arrange evidence-based clinically appropriate investigations • prioritise patients receiving investigations (if there is a waiting list) • evaluate the anticipated value of the investigation • work in partnership with patients and their families or carers to facilitate choices that are right for them • provide aftercare for patients (if needed) • interpret the results and outcomes of investigations • communicate the outcome of investigations to patients and referring doctors.	
Behaviours		
Professional practice framework Domain	**Ready to perform without supervision** Expected behaviours of a trainee who can routinely perform this activity without needing supervision	**Requires some supervision** Possible behaviours of a trainee who needs some supervision to perform this activity
	The trainee will:	The trainee may:
Medical expertise	• choose evidence-based investigations and frame them as an adjunct to comprehensive clinical assessments • assess patients' concerns, and determine the need for specific tests that are likely to result in overall benefit • develop plans for investigations, identifying their roles and timing • recognise and correctly interpret abnormal findings, considering patients' specific circumstances, and act accordingly	• provide rationale for investigations • understand the significance of abnormal test results, and act on these • consider patient factors and comorbidities • consider age-specific reference ranges
Communication	• explain to patients the potential benefits, risks, costs, burdens, and side effects of each option, including the option to have no investigations • use clear and simple language, and check that patients understand the terms used and 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	• 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

	• 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, families, and carers • give information that patients may find distressing in a considerate way	
Quality and safety	• identify adverse outcomes that may result from a proposed investigation, focusing on patients' individual situations	• consider safety aspects of investigations when planning them • seek help with interpretation of test results for less common tests or indications or unexpected results
Teaching and learning	• use appropriate guidelines, evidence sources, and decision support tools • participate in clinical audits to improve test ordering strategies for diagnoses and screening • undertake continuing professional development to maintain currency with investigation guidelines	• undertake professional development to maintain currency with investigation guidelines
Research	• provide patients with relevant information if a proposed investigation is part of a research program • obtain written consent from patients if the investigation is part of a research program	• refer to evidence-based clinical guidelines • consult current research on investigations
Cultural safety	• understand patients' views, preferences, and the adverse outcomes they are most concerned about in regards to any proposed investigations	• 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) • discuss with patients how decisions will be made once the 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 appropriate or evidence based • advise patients there may be additional costs, 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	• 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, and obtaining the appropriate informed consent, including financial consent, if necessary

	• demonstrate awareness of complex issues related to genetic information obtained from investigations, and subsequent disclosure of such information	
Judgement and decision making	• evaluate the costs, benefits, and potential risks of each investigation in a clinical situation • adjust the investigative path depending on test results received • consider whether patients' conditions may get worse or better if no tests are selected	• choose the most appropriate investigation for the clinical scenario in discussion with patients • recognise personal limitations, and seek help in an appropriate way when required
Leadership, management, and teamwork	• consider the role other members of the health care team might play, and what other sources of information and support are available • ensure results are checked in a timely manner, taking responsibility for following up results	• demonstrate an 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 • oversee quality improvement activities • communicate with patients, their families, and/or carers • 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 The trainee will:	**Requires some supervision** Possible behaviours of a trainee who needs some supervision to perform this activity 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 the clinical notes or as part of an ambulatory care review • update documentation in a time frame appropriate to the clinical situation of patients • know when to refer patients on for specialist review in another specialty, or to another member of the multidisciplinary team	• demonstrate an understanding of the importance of prevention, early detection, health maintenance, and chronic condition management
Communication	• help patients navigate the healthcare system to improve access to care by collaboration with other services, such as community health centres and consumer organisations • link patients to specific community-based health programs and group education programs	• wherever practical, meet patients' specific language and communication needs • facilitate appropriate use of interpreter services and translated materials
Quality and safety	• practice health care that maximises patient safety • adopt a systematic approach to the review and improvement of professional practice in the outpatient clinic setting	• take reasonable steps to address issues if patients' safety may be compromised • understand a systematic approach to improving the quality and safety of health care

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

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

EPA 13: Palliative care

Theme	End-of-life care	AT-EPA-13
Title	**Manage the care of patients with severe or intractable symptoms or at the end of their lives**	
Description	This activity requires the ability to: • manage severe or intractable symptoms • recognise the dying phase • support patients to plan for their advance care, and document their own wishes • manage end-of-life care plans.	
Behaviours		
Professional practice framework domain	**Ready to perform without supervision** Expected behaviours of a trainee who can routinely perform this activity without needing supervision The trainee will:	**Requires some supervision** Possible behaviours of a trainee who needs some supervision to perform this activity The trainee may:
Medical expertise	• accurately assess patients' physical and psychological symptoms • estimate prognosis and communicate this appropriately, if requested, including the uncertainties around such estimates • develop and clearly document individualised end-of-life care plans, including patients' preferences for treatment options, resuscitation plans, preferred place of care, and preferred place of death • provide holistic symptom management, and incorporate multidisciplinary care focusing on psychological and physical distress, according to patients' wishes • avoid unnecessary investigations or treatments, ensuring physical and psychosocial support • review the goals of care and treatment plans with patients, families, or carers if significant changes in patients' conditions or circumstances occur • recognise and manage the terminal phase in a timely way	• demonstrate an understanding of the principles of care for patients at the end of their lives • provide timely assessments and document patients' care plans • manage physical symptoms in alignment with patients' wishes • take steps to alleviate patients' symptoms and distress • correctly identify patients approaching the end of life, and provide symptomatic treatment • adequately manage patients in their terminal phase
Communication	• establish supportive relationships with patients, families, or carers based on understanding, trust, empathy, and confidentiality	• discuss with patients, family, or carers the goals of care and treatment, and document this in patients' clinical records

	• explore patients' concerns across physical, spiritual, cultural, and psychological domains thoughtfully • identify opportunities to discuss end-of-life care, aligning it with patients' values and preferences • identify proxy decision makers patients' wish to be involved in discussions about their end-of-life care • identify and document lists of close family members or carers, and develop support plans with and for them • provide bereaved families or carers with written information about access to bereavement support • communicate effectively and in a timely manner with other health professionals involved in patients' care	• ensure consistent messages are given to patients, families, or carers about treatment options, their likelihood of success, risks, and prognosis • provide honest and clear clinical assessment summaries of situations, using plain language and avoiding medical jargon • discuss with family or carers appropriate support and bereavement care
Quality and safety	• conduct medication chart safety audits, and multidisciplinary mortality and morbidity meetings, and provide feedback to colleagues • develop monitoring and evaluation strategies to capture feedback about the quality of care from multidisciplinary team members, patients, families, and carers • review all deaths to determine the safety and quality of patients' end-of-life care and how it could be improved • review technological systems and processes that support safe and high-quality end-of-life care	• collect and review data on the safety and effectiveness of end-of-life care delivery • communicate the content of discussions about prognosis and advance care planning to multidisciplinary teams • ensure that actual care is aligned with patients' documented wishes
Teaching and learning	• provide supervision, support, and teaching to develop the skills of junior colleagues on end-of-life care • reflect on personal practice, and use this process to guide continuing professional development • ensure all members of multidisciplinary teams receive education on their roles and responsibilities for managing end-of-life care • promote education covering: » competencies for providing culturally responsive end-of-life care to Aboriginal	• participate in education on disease-specific symptom assessment and evidence-based symptom management • participate in upskilling in best practice of end-of-life care management • encourage junior colleagues to participate in multidisciplinary case reviews, mortality and morbidity meetings, and adverse event reviews

	and Torres Strait Islander and Māori peoples, and to people from other cultural backgrounds » ethical and medicolegal issues » relevant legislation in the state, territory, or region	
Research	• ensure that quality end-of-life care or symptom management processes are evidence based and outcome focused • use systematic reviews or personal reviews and appraisal of the literature as evidence for appropriate management • support clinical trials to build the end-of-life care evidence base	• recognise that the evidence may be insufficient to resolve uncertainty and make definitive decisions
Cultural safety	• practise culturally safe medicine based on understanding the personal, historical, and cultural influences on patients, families, and carers • develop strategies for identifying culturally appropriate decision makers, and obtain their input in discussions of patients' end-of-life care • offer support to patients, families, and carers to include cultural or religious practices in their care	• understand, respect, and respond to individual preferences and needs of patients, regardless of their culture and religious beliefs • support patients, families, and carers with communication difficulties associated with cultural and linguistic diversity
Ethics and professional behaviour	• ensure all team members discuss end-of-life care with patients, and act on expressed patient preferences • ensure focus of care is on quality of life for patients before death, and minimise pain and suffering caused by ineffective treatments • recognise the complexity of ethical issues related to human life and death, when considering the allocation of scarce resources • recognise feelings of moral distress and burnout in themselves and colleagues	• ensure that information on advance care plans, treatment plans, goals of care, and patients' treatment preferences is available to all involved in patients' care • ensure patients' dignity is preserved • respond appropriately to distress or concerns of colleagues, patients, families, and carers
Judgement and decision making	• maximise patients' autonomy and their best interests when making treatment decisions • liaise with other relevant services, providing referrals as necessary	• define and document patients', families', or carers' goals and agreed outcomes
Leadership, management, and teamwork	• ensure care plans are communicated to all teams involved in patients' care, including relevant community care providers • define the responsibilities and roles of team members involved in patients' care	• coordinate end-of-life care to minimise fragmentation of care • document multidisciplinary care plans, including the terminal phase

	• achieve agreement between multidisciplinary teams about patients' treatment options • coordinate care and support to be provided in patients' preferred place of care • effectively manage personal challenges of dealing with death and grief	
Health policy, systems, and advocacy	• participate in developing frameworks for organisational advance care planning • allocate resources according to the organisational strategic plan to support systems for effective delivery of end-of-life care and improvement of quality of life for patients with distressing symptoms • advocate for the needs of individual patients, social groups, and cultures within the community who have specific palliative care needs or inequitable access to palliative care services	• allocate scarce health care resources effectively • support community-based service providers to build capacity for people to be cared for in their preferred place of death

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 respiratory medicine
2	Acute respiratory care
3	Chronic respiratory care
4	Thoracic tumours, including mediastinal diseases
5	Pleural disorders
6	Respiratory failure, including sleep-disordered breathing

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.

- Environmental factors:
  - air pollution
  - effect of altitude and diving on lung disease
  - occupational and environmental toxins, including silica dust and asbestos:
    - medicolegal implications of occupational dust exposure
    - methods for screening for occupational dust exposure and related disease
  - smoking (tobacco and marijuana) and vaping:
    - the adverse effects on health
    - the specific effects on respiratory health
    - methods for screening for exposure to environmental tobacco smoke, including urinary / salivary cotinine
- Pharmacology:
  - aerosol drug delivery:
    - aerosol delivery through different interfaces, such as spacers, facemasks, high flow circuits, invasive and non-invasive positive pressure ventilation
    - mechanisms and adverse effects of aerosol treatments
    - principles of aerosol delivery to the lungs
    - principles of infection control in aerosol therapy
    - principles of pressurised metered dose inhalers, dry powder inhalers, and nebulisers
  - biologics in respiratory disease
  - dosing and side effects
  - drug interactions and contraindications of medications
  - effects of non-respiratory medications on the respiratory system
  - formulations of medications
  - mechanism of action
  - monitoring of drug levels
  - pharmacodynamics
  - screening for adverse effects
- Principles of statistics and epidemiology:
  - basic statistics
  - critical appraisal of published research and appropriate application towards clinical care
  - levels of evidence and classes of recommendations
  - population risk determinants of respiratory disease
- Structure and function of the respiratory system:
  - immunology and host defence mechanisms:
    - acquired immunity
    - antibody classes and function
    - atopy and hypersensitivity reactions
    - autoimmunity
    - cell mediated immunity
    - effects of systemic and localised immunodeficiency (e.g., GM-CSF antibody syndrome) on lung health
    - humoral immunity
    - innate immunity
    - lung microbiome

- pulmonary defence mechanisms, particularly the role, makeup, and function of mucus, cilia, and cough
- transplant immunology
- vaccines and vaccine responses

» lung development:
- normal development
- surfactant physiology
- the effects of early life lung disease on long-term health

» pulmonary physiology:
- acid-base balance
- alveolar gas equation
- control of ventilatory drive
- diffusion
- mechanics of breathing
- metabolic functions of the lung
- peripheral blood flow, gas transport, and oxygen-haemoglobin dissociation
- physiological changes and compensations under altered states
- pulmonary blood flow, vascular resistance, and heart-lung circulatory relationships
- ventilation and gas exchange, including ventilation perfusion relationships:
  - ageing
  - diving physiology
  - exercise
  - high altitude physiology
  - pregnancy

» the normal and abnormal structural components of the respiratory system:
- alveoli (including type 2, Clara, and goblet cells)
- chemoreceptors
- chest wall
- interstitium
- lower airway segments (1-19)
- mediastinal lymph node stations
- pulmonary vasculature
- respiratory control centres
- respiratory muscles
- smooth muscle and receptors
- upper airway anatomy

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

Investigations

- Blood gas analysis, including interpretation of arterial, venous, and capillary samples
- Capnography, including exhaled and transcutaneous samples
- Lung function tests:
  - » bronchial provocation testing, including direct and indirect methods
  - » bronchodilator response
  - » calculations of shunt fraction
  - » cardiopulmonary exercise testing
  - » diffusion assessment
  - » forced oscillometry testing
  - » fraction of exhaled nitric oxide
  - » high altitude simulation tests
  - » lung volume assessment techniques
  - » respiratory muscle testing, including maximal inspiratory and expiratory pressures, sniff nasal inspiratory pressures, supine spirometry, and cough peak flow
  - » six-minute walk test
  - » spirometry, including office / bedside testing

carers, and be able to explain procedural risk and obtain informed consent where applicable.	• Oximetry, including continuous / overnight studies • Oesophageal manometry and pH monitoring • Positive airway pressure device downloads • Polysomnography: » address the benefits and limitations of different levels of polysomnography testing • Radiological investigations: » chest x-ray » contrast swallow tests » CT scan of the chest » fluoroscopy » magnetic resonance imaging of the chest » scintigraphy / nuclear medicine tests: ○ PET with / without integrated CT ○ ventilation / perfusion scans » ultrasonography: ○ doppler ultrasound imaging and flow studies ○ thoracic and pleural ultrasound ○ trans-thoracic echocardiography • Radiological, serological, cytological, histological, and ancillary testing for primary lung disease and systemic disorders with pulmonary overlap: » allergy and delayed hypersensitivity tests » cilia studies: ○ cilial function testing ○ electron microscopy for cilial ultrastructure ○ nasal nitric oxide testing » sweat test and genotyping for cystic fibrosis • Technical aspects of lung function testing: » clinical interpretation of test results, and appreciation of clinically meaningful change » clinical versus research role of the above investigations » margins of error, and operator-dependant and patient-related factors and their implications » methods of performing tests » reference values and their limitations **Procedures** • Bronchoscopy: » anatomy: ○ airway anatomy ○ normal anatomical variants of airways ○ visual appearance of upper and lower airway pathology (e.g., subglottic lesions, tumours) » applications and use of single-use / disposable bronchoscopes » investigations: ○ assessment and quantification of dynamic airway collapse ○ collateral ventilation assessment ○ cytology and/or microbiology from brushings ○ cytology and/or microbiology from fine needle aspiration and transbronchial core needle biopsies ○ cytology and/or microbiology from washings / bronchoalveolar lavage fluid ○ histology and/or microbiology from cryobiopsy ○ histology and/or microbiology from forceps bronchial and transbronchial biopsies

- management of intra- and postoperative complications
- techniques:
  - anaesthesia, airway protection, and ventilation strategies for bronchoscopic procedures
  - methods of introduction of bronchoscopes, including nasal intubation, oral intubation with mouth / bite guard, laryngeal mask airway (LMA), endotracheal tube (ETT), and direct tracheostomy approaches
  - navigational techniques, such as bronchial branch tracing (Kurimoto technique), electromagnetic navigation, robotic navigation, navigational software, fluoroscopy, cone beam CT
  - rigid and flexible bronchoscopy, including single-use instrumentation, and linear and radial endobronchial ultrasound
- the processes for sterilisation and maintenance of bronchoscopic equipment
- therapeutic techniques:
  - advanced therapeutic modalities, such as APC, cryotherapy, and Nd-YAG laser
  - bronchoscopic drug delivery
  - endobronchial lung volume reduction
  - foreign body removal
  - large airway debulking or stent placement
  - management of persistent air leak
  - therapeutics under investigation, including thermal vapour and microwave ablation

- Pleural:
  - diagnostic and therapeutic indications for pleural procedures
  - normal and abnormal anatomy of the pleura
  - physiology and biochemistry of pleural fluid
  - procedure techniques:
    - anaesthesia (local, regional, and general approaches)
    - closed pleural biopsy (Abrams and image-guided techniques)
    - indwelling tunnelled pleural catheter insertion and removal
    - large bore intercostal catheter insertion
    - needle thoracentesis
    - small bore intercostal catheter insertion
    - thoracoscopy
    - underwater seal drainage systems, including digital ambulatory systems
  - risks and benefits of each of the diagnostic / therapeutic interventions
  - sedation, topical anaesthesia, and analgesia
  - selection and assessment of patients for procedural intervention
  - therapeutic interventions:
    - pleural fluid drainage
    - pleural infection management using intrapleural fibrinolytic, plus mucolytic therapy, saline irrigation, and basic knowledge of surgical options
    - pleurodesis (slurry and poudrage)
    - pneumothorax management
    - advanced management of persistent air leak, including talc insufflation, blood patch pleurodesis, endobronchial interventions, and basic knowledge of surgical options
  - utility of ultrasonography in assessment and management of pleural disorders

IMPORTANT SPECIFIC ISSUES

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

The following issues apply to all knowledge guides

- Advanced certification or training (generally beyond scope of advanced training) for advanced procedural interventions, including:
  - advanced bronchoscopic therapeutic interventions
  - endobronchial lung volume reduction
  - indwelling tunnelled pleural catheter insertion and removal
  - large airway management
  - navigational techniques
  - radial endobronchial ultrasound
- Engage in preventive and adjunctive care for patients with respiratory disease, including a focus on smoking cessation, vaccinations, and pulmonary rehabilitation
- Incorporate principles of entrustable professional activities into clinical management of respiratory disease
- Patient care considerations for specific patient groups and those with culturally diverse backgrounds, including:
  - Aboriginal and Torres Strait Islander background, ethnic minorities, religious ideologies (e.g., Jehovah's Witness), refugees, overseas travellers, low socioeconomic background, non-English speaking background
  - adolescent, elderly, pregnant, and peripartum states
- Procedural competence for respiratory interventions:
  - flexible bronchoscopy
  - intercostal catheter insertion
  - linear endobronchial ultrasound
  - thoracic and pleural ultrasound
- Recognise the inter-relationship and impact of comorbidities and respiratory conditions on each other, with respect to clinical presentation, diagnostics, management, prognostics and impact of illness

Knowledge guide 2 – Acute respiratory care

Adult Training in Respiratory Medicine (Adult Medicine)

KEY PRESENTATIONS AND CONDITIONS

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

Presentations

- Abnormal chest radiology (including chest x-ray or CT scan)
- Chest pain
- Chest tightness
- Cough
- Dyspnoea
- Fatigue
- Fever
- Haemoptysis
- Hypercapnia
- Night sweats
- Orthopnoea
- Respiratory failure, including hypoxaemia
- Sleep disruption
- Snoring
- Somnolence
- Sputum production
- Stertor
- Stridor
- Symptoms related to occupational or environmental exposure
- Tachypnoea
- Weight loss
- Wheeze

Conditions

Airways disorders

- Acute exacerbation of obstructive airways disease, including:
  - allergic bronchopulmonary aspergillosis
  - asthma
  - bronchiectasis (cystic fibrosis and non-cystic fibrosis related), bronchiolitis
  - chronic obstructive pulmonary disease

Diffuse parenchymal lung disorders

- Acute eosinophilic pneumonia
- Acute exacerbation of connective tissue

*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

disease-related and other interstitial lung disease
- Acute exacerbation of idiopathic pulmonary fibrosis
- Acute hypersensitivity pneumonitis
- Acute interstitial pneumonia
- Acute pulmonary oedema
- Acute rejection post lung transplantation
- Acute respiratory distress syndrome
- Drug-induced pneumonitis
- Organising pneumonia
- Radiation pneumonitis

Large airways disorders

- Acute / Subacute or critical upper airway obstruction, including:
  - foreign body aspiration
  - malignant central airway obstruction
  - subglottic stenosis
  - tracheal stenosis
  - tracheo- and broncho-oesophageal fistula

Pleural disorders

- Chylothorax
- Empyema
- Haemothorax
- Persistent air leak, including bronchopleural fistula formation
- Pleural effusions
- Pneumothorax

Pulmonary infections

- Aspiration pneumonitis
- Community or healthcare-acquired pneumonia
- Fungal infections, including aspergillus, cryptococcus, and pneumocystis jirovecii
- Infections in patients who are immunocompromised
- Infections in patients with underlying structural lung disease and airways disease
- Infections related to inserted devices
- Non-tuberculous mycobacterial infections
- Parapneumonic effusions, pleural infections, and empyema

- Respiratory viral infections, including influenza and SARS-CoV-2
- Tuberculosis with pulmonary and extrapulmonary manifestations

Pulmonary vascular disorders

- Acute or massive haemoptysis
- Acute right ventricular failure secondary to lung disease / pulmonary arterial hypertension
- Diffuse alveolar haemorrhage
- Pulmonary arterial hypertension
- Pulmonary embolism
- Pulmonary vasculitis

Respiratory failure

- Acute and acute-on-chronic hypercapnic respiratory failure in chronic respiratory conditions, including:
  - airways diseases
  - kyphoscoliosis
  - neuromuscular diseases
  - obesity hypoventilation
- Acute hypercapnic respiratory failure secondary to exacerbation of airways diseases, especially chronic obstructive pulmonary disease
- Acute hypoxaemic respiratory failure
- Acute pulmonary oedema
- Drug-induced or over-sedation related respiratory failure
- Post-extubation respiratory failure

Thoracic malignancy and mediastinal disorders

- Complications relating to thoracic malignancies
- Large airway obstruction or endobronchial disease with associated symptoms
- Mediastinal mass effect
- Superior vena cava obstruction

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

Diffuse parenchymal lung disorders

- Alveolar proteinosis
- Barotrauma
- High altitude and diving-related lung injury, including drowning
- Post-haematopoietic bone marrow transplant syndromes:
  - engraftment syndrome
  - graft versus host disease
- Traumatic lung injury, including contusions
- Vaping and inhalation-related acute lung injury

Pulmonary infections

- Parasitic lung infections, including:
  - hydatid
  - strongyloides
- Pulmonary infections endemic only to certain geographical locations in Australia, New Zealand, or globally:
  - burkholderia mellioid
  - histoplasmosis
  - strongyloidiasis
  - toxoplasmosis

Thoracic malignancy and mediastinal disorder

- Extra-pulmonary complications of thoracic malignancy, including:
  - oesophageal obstruction
  - pericardial tamponade
  - spinal cord compression

EPIDEMIOLOGY, PATHOPHYSIOLOGY, AND CLINICAL SCIENCES

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

Airways disorders

- Apply knowledge of epidemiology and pathophysiology of airways disease in the appropriate diagnosis and personalised management for patients

Diffuse parenchymal lung disorders

- Apply knowledge of epidemiological factors, diagnostic sensitivity / specificity of investigations (serology, bronchoscopic, and surgical specimens), and pathophysiology of autoantibody syndromes (e.g., MDA-5, Jo-1), in determining appropriate diagnosis and treatment options for undifferentiated or new presentations of acute interstitial pneumonia

Pleural disorders

- Apply epidemiology and pathophysiology in determining appropriate diagnosis, requirement for intervention, and management options for undifferentiated unilateral and bilateral pleural effusion

Pulmonary infections

- Apply local epidemiology of prevalence of microbes and drug susceptibility patterns in aiding appropriate diagnosis and management avenues

- apply local epidemiology and risk factors for diagnosis of legionella infections
- empirical antimicrobial choice in treatment of latent tuberculous infection or culture-negative tuberculosis

- Apply knowledge of timings of opportunistic infections and radiological patterns in guiding appropriate diagnosis and management, especially if empiric therapy is utilised
  - empirical antimicrobial choice in treatment of suspected fungal disease in post-HSCT lung infections

Respiratory failure

- Apply knowledge of epidemiology and various pathophysiological mechanisms contributing towards respiratory failure in determining appropriate positive airway pressures, additional non-invasive ventilation settings, and adjunct treatment modalities (e.g., cough assist device)

Thoracic malignancy and mediastinal disorders

- Apply epidemiological risk factors in determining asymptomatic individuals suitable for lung cancer screening with low dose chest CT scan
- Apply epidemiological risk factors in determining individuals at high risk of harbouring driver or targetable mutations, and therefore most suitable for advanced testing, including molecular analysis, next generation sequencing and/or liquid biopsy

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

- Blood gas analysis, including interpretation of arterial, venous, capillary, exhaled, and transcutaneous samples
- Capnography
- Lung function tests:
  - calculation of shunt fraction
  - cough peak flow and sniff nasal inspiratory pressures
  - gas transfer assessment
  - peak flow monitoring and assessment
  - plethysmography
  - spirometry, including pre- and post-bronchodilator, and in erect and supine positions
- Oximetry, including continuous / overnight studies
- Positive airway pressure device downloads
- Radiological investigations:
  - chest x-ray
  - CT, including pulmonary angiogram and high-resolution protocols
  - right heart catheterisation and haemodynamic measurements (basic knowledge and interpretation)
  - scintigraphy / nuclear medicine tests (e.g., PET and ventilation / perfusion scans)
  - ultrasonography
    - doppler ultrasound imaging and flow studies
    - thoracic and pleural ultrasound
    - trans-thoracic echocardiography
- Serological, cytological, and histological biomarkers (e.g., utility of serology, cultures, PCR techniques, and histology for diagnosis of pulmonary infections)

Procedures

- Bronchoscopy, including endobronchial ultrasound (linear and radial modalities), flexible bronchoscopy (including single use), and rigid bronchoscopy:

- advanced therapeutic modalities, such as APC, cryotherapy, endoscopic lung volume reduction, and Nd-YAG laser
- bronchial brushings
- bronchoscopic drug delivery
- collateral ventilation assessment
- cryobiopsy
- cytology and microbiology from washings / bronchoalveolar lavage fluid
- differential cell counts from bronchoalveolar lavage fluid
- fine needle aspiration
- forceps endobronchial and transbronchial biopsy
- foreign body removal
- large airway debulking or stent placement
- management of persistent air leak

- Pleural procedures:
  - Procedure techniques:
    - ambulatory and underwater seal drainage
    - indwelling tunnelled pleural catheter
    - large bore drain insertion
    - needle thoracentesis
    - pleural ultrasound
    - small bore intercostal catheter insertion
    - thoracoscopy
  - Therapeutic interventions:
    - advanced management of persistent air leak, including blood patch pleurodesis, endobronchial interventions, talc insufflation, and basic knowledge of surgical options
    - intrapleural fibrinolysis and irrigation
    - pleural fluid drainage
    - pleurodesis
    - pneumothorax management

IMPORTANT SPECIFIC ISSUES

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

- Appreciation for multidisciplinary team management (including allied health, medical, surgical, and critical care specialties) of severe or life-threatening presentations, particularly with:
  - acute interstitial pneumonias
  - decompensated respiratory failure
  - haemoptysis
  - large airway compromise
  - pneumothorax
  - pulmonary emboli
  - respiratory tract infections
  - severe asthma
- Investigation and management of undifferentiated hypercapnia with understanding of pathophysiological mechanisms, various modalities of management and positive airway pressure delivery, and subsequent monitoring methods
- Investigation and management of undifferentiated hypoxaemia, with understanding of utility of various diagnostic modalities, different oxygen delivery modalities, and use of controlled oxygen therapy
- Knowledge of appropriate timings and methods for investigations, as well as their diagnostic yield, in management of patients with pulmonary infections, especially those that are severe or associated with underlying lung disease or concurrent immunocompromise
- Principles of mandatory reporting, contact tracing, treatment observation, and other public measures in management of communicable diseases, particularly tuberculosis

- Understanding of the interplay between various acute concurrent pathologies and comorbidities in contributing towards a patient's clinical presentation, as well as treatment implications

Knowledge guide 3 – Chronic respiratory care

Adult Training in Respiratory Medicine (Adult Medicine)

KEY PRESENTATIONS AND CONDITIONS

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

Presentations

- Allergy
- Chest pain
- Chest tightness
- Cough (acute and chronic)
- Dysfunctional breathing
- Dyspnoea
- Fatigue
- Fever
- Haemoptysis
- Hypercapnia
- Hypoxia
- Night sweats
- Orthopnoea
- Recurrent infections
- Sleep disruption
- Snoring
- Somnolence
- Sputum production
- Stridor
- Symptoms related to environment or occupation exposures
- Tachypnoea
- Weight loss
- Wheeze

Conditions

Airways disorders

- Asthma
- Bronchiectasis
- Bronchiolitis
- Bronchitis
- Chronic obstructive pulmonary disease
- Cystic fibrosis
- Primary ciliary dyskinesia

Diffuse parenchymal lung disorders

- Granulomatous disorders (e.g., sarcoidosis)
- Diffuse disorders of a known cause:
  - connective tissue disease-related lung disease
  - drug-induced (medications and drugs of abuse) pneumonitis

*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

- inflammatory bowel disease-related lung disease
- inflammatory myopathy-related lung disease
- organising pneumonia

- Hypersensitivity pneumonitis
- Idiopathic interstitial pneumonias:
  - acute interstitial pneumonia
  - cryptogenic organising pneumonia
  - desquamative interstitial pneumonia
  - idiopathic nonspecific interstitial pneumonia
  - idiopathic pulmonary fibrosis
  - respiratory bronchiolitis interstitial lung disease
- Interstitial pneumonia with autoimmune features

End-stage lung disease and transplantation

- Chronic hypoxic and/or hypercapnic respiratory failure
- Lung transplantation
- Severe pulmonary hypertension with right heart failure / core pulmonale

Environmental and occupational lung disorders

- Pneumoconiosis:
  - asbestos-related lung disease
  - coal workers' pneumoconiosis
  - farmer's lung
  - silicosis

Pulmonary infections

- Latent tuberculous infection
- Non-tuberculous mycobacterial infections
- Recurrent infections or pathogen colonisation in persons with underlying structural lung or airways disease or underlying immunocompromise

Pulmonary vascular disorders

- Pulmonary embolic disease
- Pulmonary hypertension (as per WHO classification)
- Pulmonary vasculitides

Smoking-related lung disorder

- Lung disease related to:
  - marijuana

	» tobacco » vaping	
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.	**Diffuse parenchymal lung disorders** • Alpha-1 antitrypsin disease • Eosinophilic lung diseases • Lymphangioleiomyomatosis • Lymphocytic interstitial pneumonia • Pulmonary alveolar proteinosis and granulocyte-macrophage colony-stimulating factor auto-antibody disease • Pulmonary amyloidosis • Pulmonary Langerhans cell histiocytosis **Environmental and occupational lung disorders** • Indoor and outdoor pollution-related lung injuries • Other exposure-related lung disease **Large airways disorders** • Subglottic stenosis • Tracheal stenosis • Tracheobronchomalacia, including excessive dynamic airway collapse • Tracheo- and broncho-oesophageal fistula **Pulmonary vascular disorders** • Diffuse alveolar haemorrhage syndromes • Pulmonary vascular anomalies, including arteriovenous malformations **Systemic disorders with pulmonary overlap** • Chronic liver disease • Histiocytic disorders • Nonspecific airway changes, including lymphocytic bronchiolitis, lymphoid hyperplasia, and mild constrictive changes • Ovarian hyperstimulation syndrome • Telomere disorders • Trafficking and lysosomal storage disorders	

EPIDEMIOLOGY, PATHOPHYSIOLOGY, AND CLINICAL SCIENCES

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

Diffuse parenchymal lung disorders

- Understanding of epidemiology, knowledge of heterogeneity in clinical, radiological, and histological presentations, and appreciation of multimodality assessment and multidisciplinary discussion in appropriate diagnosis and management of interstitial pneumonias

Environmental and occupational lung disorders

- Application of epidemiological risk factors in assessment and screening of persons suspected of having exposure-related or occupational lung disease

Pulmonary infections

- Apply local epidemiology of prevalence of microbes and drug susceptibility patterns in aiding appropriate diagnosis and management avenues, e.g., appropriate antimicrobial treatment for latent tuberculous infections

Small airways disorders

- Epidemiology of airways disorders, and causative risk factors
- Pathophysiology and genetics of cystic fibrosis, including knowledge of systemic manifestations, assessments of severity, and management approaches, including use of CFTR modulators
- Principles of pathophysiological mechanisms and pharmacological management of airways 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

- Blood gas analysis, including interpretation of arterial, venous, and capillary samples
- Capnography, including exhaled and transcutaneous samples
- Lung function tests:
  - bronchial provocation testing, including direct and indirect methods
  - bronchodilator response
  - calculations of shunt fraction
  - cardiopulmonary exercise testing
  - diffusion assessment
  - forced oscillometry testing
  - fraction of exhaled nitric oxide
  - high altitude simulation tests
  - lung volume assessment techniques
  - respiratory muscle testing, including maximal inspiratory and expiratory pressures, sniff nasal inspiratory pressures, supine spirometry, and cough peak flow
  - six-minute walk test
  - spirometry, including office / bedside testing
- Oximetry, including continuous / overnight studies
- Polysomnography:
  - address the benefits and limitations of different levels of polysomnography testing
- Positive airway pressure device downloads
- Radiological investigations:
  - chest CT scan
  - chest MRI
  - chest x-ray
  - contrast swallow tests
  - fluoroscopy
  - oesophageal manometry and pH monitoring
  - right heart catheterisation and haemodynamic measurements (basic knowledge and interpretation)
  - scintigraphy / nuclear medicine tests, such as:

- PET with / without integrated CT
- ventilation / perfusion scans

» ultrasonography:
- doppler ultrasound imaging and flow studies
- thoracic and pleural ultrasound
- trans-thoracic echocardiography

- Serological, cytological, histological, and ancillary testing for primary lung disease and systemic disorders with pulmonary overlap

Procedures

- Bronchoscopy, including endobronchial ultrasound (linear and radial modalities), flexible bronchoscopy (including single use), rigid bronchoscopy:
  - » advanced therapeutic modalities, such as APC, cryotherapy, and Nd-YAG laser
  - » bronchoscopic drug delivery
  - » brushings
  - » collateral ventilation assessment
  - » cryobiopsy
  - » cytology and microbiology from washings / bronchoalveolar lavage fluid
  - » fine needle aspiration
  - » forceps bronchial and transbronchial biopsy
  - » large airway debulking or stent placement
- Pleural:
  - » procedure techniques:
    - ambulatory and underwater seal drainage
    - indwelling tunnelled pleural catheter
    - large bore drain insertion
    - needle thoracentesis
    - small bore intercostal catheter insertion
    - thoracoscopy
  - » therapeutic interventions:
    - intrapleural fibrinolysis and irrigation
    - pleural fluid drainage
    - pleurodesis

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 knowledge of genetics and pathophysiology of cystic fibrosis, and of evidence-based and guideline recommendations in the treatment and management of and in the prescription of CFTR modulator therapy for persons with cystic fibrosis
- Apply national and international evidence-based guidelines towards achieving optimal patient care
- Australian / Aotearoa New Zealand and local context and resource availability for delivering inpatient and outpatient personalised care
- Inter-relationships between systemic disorders, comorbidities, and pulmonary diseases and their impacts on presentation and treatment options
- Provide appropriate evidence-based prescription of preventive inhaler therapy for management of chronic airways disease
- Pulmonary rehabilitation:
  - » apply knowledge of components of a successful pulmonary rehabilitation program
  - » apply knowledge of evidence base supporting pulmonary rehabilitation in COPD and other lung diseases
  - » select patients most likely to benefit from pulmonary rehabilitation
- Role of advanced care planning, multidisciplinary care, pharmacotherapy, supplemental oxygen and positive airway

pressure, and transplantation in management of severe or end-stage chronic respiratory disorders

- Role of chest physiotherapy techniques in management of sputum clearance
- Role of community and integrated care pathways in providing integrated care of chronic respiratory disease
- Role of multidisciplinary teams and various subspecialty practitioners in diagnostic and therapeutic elements of patient care
- Role of shared decision making in management of chronic respiratory disorders
- Role of various bronchoscopic techniques and lung biopsies in achieving diagnostic and therapeutic outcomes for undifferentiated and established diagnoses
- Understand the evidence base and provide appropriate prescription of domiciliary oxygen with use of appropriate interface and delivery devices
- Understand the importance of timing, forward planning, and principals of treatments for patients with respiratory disease in relation to palliative care referral. Further understand the indications and importance of patient selection of who will benefit from palliative care involvement.

Knowledge guide 4 – Thoracic tumours, including mediastinal diseases

Advanced Training in Respiratory Medicine (Adult Medicine)

KEY PRESENTATIONS AND CONDITIONS

Advanced Trainees will have a comprehensive depth of knowledge of common and atypical presentations of thoracic malignancy.

Presentations

- Cough
- Dyspnoea
- Extrapulmonary complications of malignancy:
  - acute neurological change
  - acute spinal cord compression
  - central airway obstruction
  - oesophageal obstruction / tracheo-oesophageal fistula
  - paraneoplastic phenomenon
  - pathological fracture
  - SVC obstruction
  - venous thromboembolism
- Haemoptysis
- Incidental pulmonary nodule or mass
- Pleural effusion
- Weight loss
- Wheeze / Stridor

Conditions

- Epithelial tumours:
  - adenocarcinomas
  - adenomas
  - adenosquamous carcinomas
  - large cell carcinomas
  - other epithelial tumours
  - papillomas
  - precursor glandular lesions
  - salivary gland-type tumours
  - sarcomatoid tumours
  - squamous cell carcinomas
  - squamous precursor lesions
- Haematolymphoid tumours, (e.g., diffuse large B cell lymphoma, Langerhans cell histiocytosis)
- Lung neuroendocrine neoplasms:
  - neuroendocrine carcinomas
  - neuroendocrine tumours
  - precursor lesion
- Mediastinal tumours:

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

Synthesise

- recognise the common and atypical 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

	» chest wall tumours (e.g., neurofibromas) » mediastinal germ cell tumours » mesenchymal neoplasms » thymic carcinomas, thymic neuroendocrine tumours, and thymomas • Mesenchymal tumours specific to the lung • Metastatic pulmonary tumours • Pleural malignancy: » mesothelioma » metastatic disease » primary lung malignancy • Tumours of ectopic tissues (e.g., melanoma, meningioma)	
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** • Extrapulmonary complications of malignancy: » acute cord compression » acute neurological change » oesophageal obstruction » paraneoplastic phenomenon, including: ○ hyponatraemia ○ neurological change (e.g., Lambert–Eaton syndrome, seizure activity) » pathological fracture » SVC obstruction	
EPIDEMIOLOGY, PATHOPHYSIOLOGY, AND CLINICAL SCIENCES Advanced Trainees will have a comprehensive depth of knowledge of the principles of the foundational sciences.	• Cause and classification of lung tumours according to WHO criteria • Compare and contrast investigations for staging of lung cancer, including the role of PET-CT and mediastinal lymph node sampling (EUS, EBUS and surgical techniques) • Principles of screening for lung cancer, and assess suitable patients for low dose CT screen based on evidence-base and local funding: » incorporate the role of smoking and vaping cessation counselling, management of concurrent respiratory disease, vaccinations, and pulmonary rehabilitation in management of patients identified for screening • Role of diagnostic procedures including bronchoscopy, endobronchial ultrasound, pleural fluid cytology and thoracoscopy, surgical biopsy, as well as emerging modalities including liquid biopsy • Staging and prognosis of lung cancer, including the role of genetic factors, according to IASLC criteria	
INVESTIGATIONS, PROCEDURES, AND CLINICAL ASSESSMENT TOOLS Advanced Trainees will know the scientific foundation of each investigation and	**Investigations** • Advanced testing for serological, cytological, and histological samples: » basic staining, slide preparation and interpretation of cytological (e.g., EBUS) samples » flow cytometry » immunohistochemistry, fluorescent in situ hybridisation, PCR, and next generation sequencing techniques » liquid biopsy	

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.	• Lung function tests for peri-operative assessment • Radiological investigations: » chest CT scan » chest MRI » chest x-ray » fluoroscopy » PET with / without integrated computer tomography » ultrasonography **Procedures** • Bronchoscopy including endobronchial ultrasound (linear and radial modalities), flexible bronchoscopy (including single use), and rigid bronchoscopy: » advanced therapeutic modalities, such as APC, cryotherapy, and Nd-YAG laser » bronchoscopic drug delivery » brushings » cryobiopsy » cytology and microbiology from washings / bronchoalveolar lavage fluid » fine needle aspiration » forceps bronchial and transbronchial biopsy » large airway debulking or stent placement • Pleural: » procedure techniques: ○ ambulatory and underwater seal drainage ○ anaesthesia (local, regional, and general approaches) ○ closed pleural biopsy ○ indwelling tunnelled pleural catheter ○ large bore drain insertion ○ needle thoracentesis ○ small bore intercostal catheter insertion ○ thoracoscopy ○ therapeutic interventions: ▪ intrapleural fibrinolysis and irrigation ▪ pleural fluid drainage ▪ pleurodesis
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.	• Define performance status, clinical frailty scores, operability, and respectability, and apply appropriately towards patient care • Identify and engage community supports and services • Role of multidisciplinary care, palliative care, and psychological support for holistic management of patients with thoracic malignancy • Understand the function and have first-hand experience attending and presenting patients at lung cancer multidisciplinary team meetings • Understand the indications, benefits, risks, and diagnostic yield of various diagnostic modalities, and utilise appropriately for investigation and management of peripheral pulmonary lesions

Knowledge guide 5 – Pleural disorders

Advanced Training in Respiratory Medicine (Adult Medicine)

KEY PRESENTATIONS AND CONDITIONS

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

Presentations

- Chest pain / Pleurisy
- Cough
- Dyspnoea
- Fever
- Hypoxia
- Pleural effusion
- Pleural plaque
- Pleural thickening
- Pneumothorax
- Tachypnoea

Conditions

Conditions with risk of pleural effusion

- Predominantly exudative processes:
  - benign asbestos-related pleural effusion
  - chyle leak
  - connective tissue disease-related pleural effusion
  - infections
  - malignancy – primary lung, metastatic disease, pleural mesothelioma
  - oesophageal rupture
  - pancreatitis
  - post-pulmonary embolism with infarction
  - yellow nail syndrome
- Predominantly transudative processes:
  - congestive cardiac failure
  - hypoalbuminemia
  - liver cirrhosis hypothyroidism
  - renal disease (nephrotic syndrome, peritoneal dialysis)

Conditions with risk of pneumothorax

- Cystic lung disease:
  - Burt–Hogg–Dube syndrome
  - Langerhans cell histiocytosis
  - Lymphangioleiomyo-matosis
  - lymphocytic interstitial pneumonia
- Emphysema / Bullous disease

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

Synthesise

- recognise the clinical presentation
- identify relevant epidemiology, prevalence, pathophysiology, and clinical science
- take a comprehensive clinical history
- conduct an appropriate examination
- establish a differential diagnosis
- plan and arrange appropriate investigations
- consider the impact of illness and disease on patients 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

	• Iatrogenic pneumothorax: » procedure-related » barotrauma • Interstitial lung disease • Marfan syndrome and other connective tissue disorders	
COMPLEX ISSUES WITH THE MANAGEMENT OF PLEURAL DISEASE Advanced Trainees will understand these presentations and conditions.	**Presentations** • Non-expanding / Trapped lung • Persistent air leak • Recurrent undifferentiated effusion	
EPIDEMIOLOGY, PATHOPHYSIOLOGY, AND CLINICAL SCIENCES Advanced Trainees will have a comprehensive depth of knowledge of the principles of the foundational sciences.	• Diagnostic and therapeutic indications for pleural procedures • Investigations to differentiate between transudates and exudates • Normal anatomy and physiology of the pleura and pleural space • Normal biochemistry of pleural fluid	
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** • Assessment of severity of air-leak using analogue meters or digital drainage systems • Chest X-Ray • CT of the chest, including pleural phase CT • PET • Pleural biopsy for culture and histopathology specimens, including closed pleural biopsy, image-guided and thoracoscopic approaches • Pleural fluid analysis, including biochemistry, cultures, cytology, PCR, and investigational approaches, including liquid biopsy • Serological testing for primary pleural pathology and systemic disorders of interest • Thoracic and pleural ultrasound **Procedures** • Procedure techniques: » anaesthesia (local, regional, and general approaches) » closed pleural biopsy (Abrams and image-guided) » indwelling tunnelled pleural catheter insertion and removal » large bore intercostal catheter insertion » management of rare but life-threatening complications of pleural procedures (e.g., intercostal artery laceration and visceral injuries) » needle thoracentesis » small bore intercostal catheter insertion » thoracoscopy » underwater seal drainage systems (including digital ambulatory systems)	

	• Therapeutic interventions: » advanced management of persistent air leak, including blood patch pleurodesis, endobronchial interventions, and talc insufflation » indications and knowledge of surgical options in the management of pleural infection (washout +/- decortication) » indications and knowledge of surgical options in the management of pneumothorax » one-way valve systems, such as Heimlich valve » pleural fluid drainage » pleural infection management, including intrapleural fibrinolytic plus mucolytic (tPA + DNase) therapy and saline irrigation » pneumothorax management, including pleurodesis (talc slurry and poudrage)
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.	• Ability to identify, manage and troubleshoot chest drains • Appropriately diagnose complicated pleural effusions and empyema based on clinical, radiological, and biochemical markers, and manage with pleural interventions, including intercostal catheter insertion, irrigation, fibrinolytic +/- mucolytic therapy or surgical options, as guided by evidence base and guidelines • Demonstrate competence in thoracic / pleural ultrasound and pleural interventions prior to independently performing procedures • Incorporate knowledge of pleural fluid physiology, and benefits and drawbacks of Light's criteria and Heffner's rules, in classifying pleural effusions and providing differential diagnoses for aetiology • Interpret evidence-base and manage various presentations of pneumothorax, including primary spontaneous pneumothorax, secondary spontaneous pneumothorax, iatrogenic pneumothorax, persistent air-leak, and non-expanding / trapped lung • Knowledge of digital drainage systems • Risks and benefits of each of the diagnostic and therapeutic interventions • Role and limitations of pleural fluid biochemistry, cultures, and cytology in diagnosing aetiology of pleural effusions, and appropriately consider advanced testing (e.g., biopsy, PCR) for further investigations as required • Understand limitations of cytology in diagnosis of pleural mesothelioma, and incorporate evidence-base for novel biomarkers as well as knowledge of imaging and biopsy techniques in diagnosis

Knowledge guide 6 – Respiratory failure, including sleep-disordered breathing

Advanced Training in Respiratory Medicine (Adult Medicine)

KEY PRESENTATIONS AND CONDITIONS

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

Presentations

- Acute hypercapnia
- Acute-on-chronic and chronic hypercapnia
- Chest pain
- Chest tightness
- Dyspnoea
- Hypoxaemia
- Nocturnal hypoventilation
- Orthopnoea
- Sleep-disordered breathing
- Snoring
- Somnolence
- Sputum production
- Tachypnoea
- Wheeze

Conditions

- Acute pulmonary oedema and left-heart failure
- Central sleep apnoea syndromes
- Chest wall disorders, including kyphoscoliosis
- Chronic obstructive pulmonary disease
- Decompensation
- High spinal cord injuries
- Neuromuscular diseases, including motor neurone disease
- Obesity hypoventilation syndrome
- Obstructive sleep apnoea
- Sedative / Drug-induced hypoventilation

*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** • Central disorders of ventilation: » brainstem disease » cerebral palsy » congenital central alveolar hypoventilation, and other disorders of ventilatory control » encephalitis » hypothyroidism » paraneoplastic phenomena » stroke • Respiratory muscle disorders: » cervical spine injury » Guillain–Barré syndrome » muscular dystrophy » myasthenia gravis » myotonic dystrophy » phrenic nerve or diaphragmatic palsy » poliomyelitis » polymyositis • Thoracic cage disorders: » ankylosing spondylitis » chest trauma, flail chest » pectus excavatum » thoracoplasty	
EPIDEMIOLOGY, PATHOPHYSIOLOGY, AND CLINICAL SCIENCES Advanced Trainees will have a comprehensive depth of knowledge of the principles of the foundational sciences.	• Pathophysiological mechanisms of hypercapnic respiratory failure, and apply these towards obtaining diagnoses, and tailoring personalised treatment options and prescriptions: » comorbid role of left heart failure in contributing towards acute hypercapnia » differentials for normal versus high A-a gradient in workup of undifferentiated hypercapnia • Recognise the often-multifactorial contributors towards acute hypercapnic respiratory failure, and the significant morbidity and mortality associated with this presentation	
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	**Core investigations** • Blood gas analysis, including interpretation of arterial, venous, and capillary samples • Capnography, including exhaled and transcutaneous samples • Chest x-ray • CT scan, including high resolution protocols • Diagnostic sleep studies (level 1–3 sleep studies) • Fluoroscopy for diaphragmatic assessment • Lung function tests: » cough peak flow » gas transfer assessment » plethysmography » respiratory muscle testing, such as maximal inspiratory and expiratory pressures, sniff nasal inspiratory pressures » spirometry (erect and supine) • Oximetry, including continuous / overnight studies (level 4 sleep study) • Positive airway pressure device downloads	

carers, and be able to explain procedural risk and obtain informed consent where applicable.	• Relevant serological biomarkers **Investigations (understand basics for interpretation)** • Electrocardiography and Holter monitoring • Lumbar puncture • Maintenance of wakefulness tests and mean sleep latency tests • MRI • Nerve conduction studies / electromyography • Pleural / Diaphragmatic ultrasound • Polysomnography, including positive airway titration studies • Relevant histological biomarkers (e.g., muscle biopsy) • Trans-thoracic echocardiogram
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.	• Appreciate novel therapies in the area of motor neurone disease and muscular dystrophies • Appreciate the circuitry for acute and chronic non-invasive ventilation (NIV), with appreciation of the role of correct mask interface and controlled leak in delivering effective therapy • Appreciate the role of multidisciplinary teams (e.g., respiratory failure service, MND team, sleep trained physicians) and additional subspecialties (e.g., neurology, palliative care) in providing comprehensive care to patients with hypercapnic respiratory failure • Be able to identify the significant factors contributing towards undifferentiated or first presentation of acute hypercapnia, and integrate all into the management approach • Differentiate the need for acute only versus chronic NIV, based on evidence base (e.g., chronic obstructive pulmonary disease, obesity hypoventilation) • Identify bulbar involvement in motor neurone disease, and approach management accordingly • Identify patients suitable for invasive ventilation, non-invasive ventilation and supportive care • Identify poor NIV tolerance or suboptimal comfort, and troubleshoot to improve patient experience and usage • Referral to sleep trained physicians for patients with complex respiratory failure and non-respiratory sleep disorders • Utilise blood gas analysis, oximetry, capnography, polysomnography, and lung function tests in determining suitability of commencing NIV for a spectrum of respiratory failure disorders