NEW CURRICULA

Curriculum standards

Advanced Training in Infectious Diseases

March 2025

RACP Specialists. Together

About this document

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

This document outlines the curriculum standards for Advanced Training in Infectious Diseases for trainees and supervisors. The curriculum standards should be used in conjunction with the Advanced Training in Infectious Diseases LTA program.

The new curriculum was approved by the College Education Committee in March 2025. Please refer to the College website for details on its implementation.

Contents

Program overview

Purpose of Advanced Training

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

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

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

Specialty overview

Infectious diseases physicians specialise in the diagnosis, management, and control of illnesses caused by existing and emerging pathogens, including bacteria, fungi, parasites, and viruses. Their work is cross-disciplinary and spans aspects of clinical, laboratory, and public health medicine.

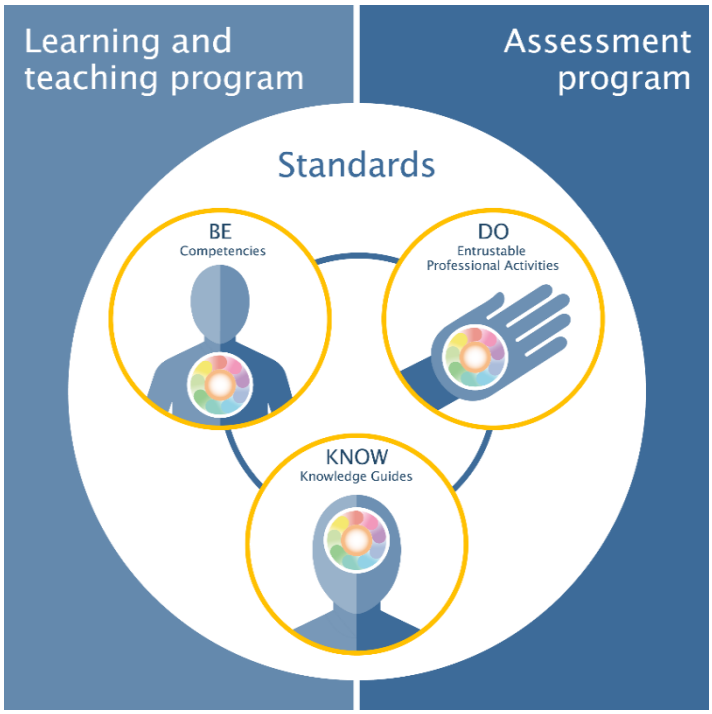
Infectious diseases physicians provide holistic care, considering impacts of their management strategies on patients, families, whānau, and/or carers, and the wider community. Their work includes:

- **investigating and treating infectious diseases, ranging from common infections to rare and emerging pathogens.** Infectious diseases physicians use their expertise in microbiology, epidemiology, and clinical medicine to identify specific infectious agents and prescribe appropriate treatment tailored to the patient's condition.
- **providing leadership and education for others in antimicrobial use and stewardship.**
- **understanding and assisting with infection control, working together with hospital infection control and public health teams.**
- **preventing and controlling the spread of infectious diseases.** Infectious diseases physicians manage infection prevention and control by involving a comprehensive approach aimed at minimising the transmission of pathogens, protecting individuals and communities, and managing outbreaks effectively. They also play a key role in developing and implementing policies and procedures related to infections, diagnostics, and antimicrobial stewardship.
- **using innovative laboratory technologies.** Infectious diseases physicians embrace and leverage laboratory technologies to enhance diagnostic accuracy, track disease outbreaks, and monitor antimicrobial resistance patterns.
- **using a holistic patient care approach.** Infectious diseases physicians take a holistic approach to diagnose, treat, and support patients affected by a wide range of infections.

Infectious diseases physicians require expertise in clinical diagnosis and treatment, epidemiology, antimicrobial stewardship, laboratory diagnostics, interdisciplinary collaboration, research, and effective communication. They have skills in:

- **application of a scholarly approach.** Infectious diseases physicians' expertise contributes to shaping policies, promoting public health initiatives, and ensuring effective management of infectious disease challenges at local, national, and global levels. In addition, infectious diseases physicians must consider the importance of antimicrobial stewardship, the costs associated with newer antimicrobial agents, and the influence of the pharmaceutical industry on clinical practice, research priorities, and healthcare advocacy efforts.
- **assessment of outbreaks.** Infectious diseases physicians continually assess outbreaks of emerging and reemerging infectious diseases, monitoring the significant national and global consequences. Infectious diseases physicians play a vital role in safeguarding not only the health of their individual patients but also the overall wellbeing of the community.
- **coordination and management with microbiology laboratories.** Infectious diseases physicians rely on strong communication and collaborative relationships with microbiology laboratories and microbiologists.
- **demonstrating leadership.** Leadership is shown in the clinical management of infections, response to outbreaks and infection control, antimicrobial use, guideline development, and quality improvement.
- **global developments.** Infectious diseases physicians need to stay up to date with global developments in infectious diseases and their local implications, enabling them to provide expert consultation and guidance to other specialist practitioners on infection-related matters.
- **advocacy within the community.** Infectious diseases physicians play a crucial role in promoting informed discussions and raising political and community awareness through evidence-based advocacy on critical issues.
- **working as an integral part of a multidisciplinary team.** Infectious diseases physicians must interpret clinical test results, collaborate effectively with other hospital subspecialties, and coordinate care with external healthcare providers.

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.

Professional Practice Framework

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

Learning, teaching, and assessment structure

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

Advanced Training learning, teaching, and assessment structure

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

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

Curriculum standards

Competencies

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

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

Competencies will be common across training programs.

Medical expertise

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

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

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

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

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

Communication

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

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

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

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

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

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

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

Quality and safety

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

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

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

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

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

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

Teaching and learning

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

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

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

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

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

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

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

Research

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

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

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

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

Cultural safety

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

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

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

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

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

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

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

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

Cultural safety can be defined as[1].

- The need for doctors to examine themselves and the potential impact of their own culture on clinical interactions and healthcare service delivery.
- The commitment by individual doctors to acknowledge and address any of their own biases, attitudes, assumptions, stereotypes, prejudices, structures, and characteristics that may affect the quality of care provided.
- The awareness that cultural safety encompasses a critical consciousness where healthcare professionals and healthcare organisations engage in ongoing self-reflection and self-awareness and hold themselves accountable for providing culturally safe care, as defined by the patient and their communities.

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

Ethics and professional behaviour

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

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

Physicians demonstrate high standards of personal behaviour.

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

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

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

Accountability: Be personally and socially accountable.

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

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

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

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

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

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

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

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

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

Judgement and decision making

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

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

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

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

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

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

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

Leadership, management, and teamwork

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

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

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

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

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

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

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

Health policy, systems, and advocacy

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

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

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

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

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

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

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

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

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

Entrustable Professional Activities

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

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

EPA 1: Team leadership

Theme	Team leadership	AT-EPA-01
Title	**Lead a team of health professionals**	
Description	This activity requires the ability to: • prioritise workload • manage multiple concurrent tasks • articulate individual responsibilities, expertise, and accountability of team members • understand the range of team members' skills, expertise, and roles • acquire and apply leadership techniques in daily practice • collaborate with and motivate team members • encourage and adopt insights from team members • act as a role model.	
Behaviours		
Professional practice framework domain	**Ready to perform without supervision** Expected behaviours of a trainee who can routinely perform this activity without needing supervision The trainee will:	**Requires some supervision** Possible behaviours of a trainee who needs some supervision to perform this activity The trainee may:
Medical expertise	• synthesise information with other disciplines to develop optimal, goal-centred plans for patients[4] • use evidence-based care to meet the needs of patients or populations • assess and effectively manage clinical risk in various scenarios • demonstrate clinical competence and skills by effectively supporting team members	• demonstrate adequate knowledge of healthcare issues by interpreting complex information • assess the spectrum of problems to be addressed • apply medical knowledge to assess the impact and clinical outcomes of management decisions • provide coordinated and quality health care for populations or patients as a member of a multidisciplinary team
Communication	• provide support and motivate patients or populations and health professionals by effective communication • demonstrate a transparent, consultative style by engaging patients, families, carers, relevant professionals, and/or the public in shared decision making • work with patients, families, carers, and other health professionals to resolve conflict that may arise when planning and aligning goals	• communicate adequately with colleagues • communicate adequately with patients, families, carers, and/or the public • respect the roles of team members

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

	• demonstrate rapport with people at all levels by tailoring messages to different stakeholders	
Quality and safety	• identify opportunities to improve care by participating in surveillance and monitoring of adverse events and 'near misses' • identify activities within systems to reduce errors, improve patient and population safety, and implement cost-effective change • place safety and quality of care first in all decision making	• participate in audits and other activities that affect the quality and safety of patients' care • participate in interdisciplinary collaboration to provide effective health services and operational change • use information resources and electronic medical record technology where available
Teaching and learning	• regularly self-evaluate personal professional practice, and implement changes based on the results • 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	• understand the range of personal and other team members' skills, expertise, and roles • acknowledge and respect the contribution of all health professionals involved in patients' care • participate effectively and appropriately in multidisciplinary teams • seek out and respect the perspectives of multidisciplinary team members when making decisions
Health policy, systems, and advocacy	• engage in appropriate consultation with stakeholders on the delivery of health care • advocate for the resources and support for healthcare teams to achieve organisational priorities • influence the development of organisational policies and procedures to optimise health outcomes • identify the determinants of health of the population, and mitigate barriers to access to care • remove self-interest from solutions to health advocacy issues	• communicate with stakeholders within the organisation about health care delivery • understand methods used to allocate resources to provide high-quality care • promote the development and use of organisational policies and procedures

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[5], such as younger or older people, and different populations	• demonstrate accessible, supportive, and compassionate behaviour

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

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

	• monitor the progress of learners' research projects regularly, and may review research projects prior to submission • support learners to find forums to present research projects • encourage and guide learners to seek out relevant research to support practice	
Cultural safety	• role model a culturally appropriate approach to teaching • encourage learners to seek out opportunities to develop and improve their own cultural safety • encourage learners to consider culturally appropriate care of Aboriginal and Torres Strait Islander peoples and Māori into patients' management • consider cultural, ethical, and religious values and beliefs in teaching and learning	• function effectively and respectfully when working with and teaching with people from different cultural backgrounds
Ethics and professional behaviour	• apply principles of ethical practice to teaching scenarios • act as a role model to promote professional responsibility and ethics among learners • respond appropriately to learners seeking professional guidance	• demonstrate professional values, including commitment to high-quality clinical standards, compassion, empathy, and respect • provide learners with feedback to improve their experiences
Judgement and decision making	• prioritise workloads and manage learners with different levels of professional knowledge or experience • link theory and practice when explaining professional decisions • promote joint problem solving • support a learning environment that allows for independent decision making • use sound and evidence-based judgement during assessments and when giving feedback to learners • escalate concerns about learners appropriately • recognise own limitations and seek help, when required, in an appropriate way	• 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	• demonstrate the principles and practice of professionalism and leadership in health care • participate in mentor programs, career advice, and general counselling

	• create an inclusive environment whereby the learner feels part of the team • help shape organisational culture to prioritise quality and work safety through openness, honesty, shared learning, and continued improvement	
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	**Improve safety, effectiveness, and experience of care for patients and staff**	
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[6] and enhance health care • monitor one's own practice and develop individual improvement plans.	
Behaviours		
Professional practice framework domain	**Ready to perform without supervision** Expected behaviours of a trainee who can routinely perform this activity without needing supervision	**Requires some supervision** Possible behaviours of a trainee who needs some supervision to perform this activity
	The trainee will:	The trainee may:
Medical expertise	• use evidence, population health outcomes, and current consensus 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 • collaborate with other healthcare professionals to collectively inform and develop local guidelines • advise on limiting the spread of multi-resistant organisms according to available evidence and clinical practice guidelines • recognise presentation of reactions to common agents that could be used in bioterrorism, and contact appropriate public health officials for advice and notification	• 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 • use guideline-based care to meet the needs of patients or populations, and to demonstrate an understanding of circumstances in which patients require management that deviates from guidelines • manage an incident of notifiable disease containment, including contact tracing and counselling of patients, in collaboration with the hospital infection control team and/or public health officials

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

Communication	• 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 in consultation with relevant supervisors / consultants or appropriate hospital delegate	• 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 • participate in effective health promotion and media communication of public health issues
Quality and safety	• demonstrate safety skills, including infection control, adverse event reporting, and effective clinical handover • participate in organisational quality and safety activities, including morbidity and mortality reviews, clinical incident reviews, root cause analyses, and corrective action preventative action plans • participate in systems for surveillance and monitoring of adverse events and 'near misses', including reporting such events • ensure that identified opportunities for improvement are raised and reported appropriately • use clinical audits and registries of data on patients' experiences and outcomes, learnings from incidents, and complaints to improve care • recognise the need for notification, and contact appropriate public health officers • apply basic health economic concepts to health promotion, including the rational use of resources and set priorities to improve health equity • recognise the process of licensure, recommendation, and funding of new vaccines in Australia and Aotearoa New Zealand	• demonstrate understanding of a systematic approach to improving the quality and safety of health care • identify notifiable infectious diseases, and know how to access reporting requirements
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	• work within organisational quality and safety systems for the delivery of clinical care • use opportunities to learn about safety and quality theory and systems

	• supervise and manage the performance of junior colleagues in the delivery of high-quality, safe care • educate hospital staff regarding, and promote, the principles of antimicrobial stewardship and infection control	
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 • use statistics appropriately in analysing health data, and make relevant inferences • remain current with new vaccine development and release • appraise and apply new knowledge to modify clinical practice • incorporate new material rapidly into clinical response to, and assessment of, returned travellers and pre-travel advice	• recognise that patient participation in research is voluntary and based on an appropriate understanding about the purpose, methods, demands, risks, and potential benefits of the research • identify and appraise resources used to keep up to date on current disease outbreaks and new diseases and syndromes
Cultural safety	• undertake professional development opportunities that address the impact of cultural bias on health outcomes	• communicate effectively with patients from culturally and linguistically diverse backgrounds
Ethics and professional behaviour	• align improvement goals with the priorities of the organisation • contribute to developing an organisational culture that enables and prioritises patients' safety and quality care • comply with local and national infection control guidelines • recognise the Security Sensitive Biological Agents (SSBA) Regulatory Scheme and associated legislations • practice with due regard to legislation and processes pertaining to public health measures • follow current guidelines for assessment and management of returned travellers from transmission regions	• comply with professional regulatory requirements and codes of conduct • follow standard immunisation procedures
Judgement and decision making	• use decision-making support tools, such as guidelines, protocols, pathways, and reminders • analyse and evaluate current care processes to improve 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 • implement local and national antimicrobial prophylaxis guidelines through consultation with relevant disciplines • cooperate with various health sectors, such as public health and community services • enlist cooperation from hospital staff to ensure adherence to infection control interventions	• demonstrate attitudes of respect and cooperation among members of different professional teams • partner with clinicians and managers to ensure patients receive appropriate care and information on their care
Health policy, systems, and advocacy	• participate in all aspects of the development, implementation, evaluation, and monitoring of governance processes • participate regularly in multidisciplinary meetings where quality and safety issues are standing agenda items, and where innovative ideas and projects for improving care are actively encouraged • measure, analyse, and report a set of infectious diseases process of care and outcome clinical indicators, and a set of generic safety indicators • take part in the design and implementation of the organisational systems for: » clinical education and training » defining the scope of clinical practice » performance monitoring and management » safety and quality education and training • discuss key aspects of state and national policies, including gaps and limitations • contribute to local infection control practices and public health interventions	• 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[7] • obtain patient histories • examine patients • synthesise findings to develop provisional and differential diagnoses • discuss findings with patients, families, and/or carers • generate management plans • present findings to other health professionals.	
Behaviours		
Professional practice framework domain	**Ready to perform without supervision** Expected behaviours of a trainee who can routinely perform this activity without needing supervision The trainee will:	**Requires some supervision** Possible behaviours of a trainee who needs some supervision to perform this activity The trainee may:
Medical expertise	• synthesise and interpret findings from histories and examinations to devise the most likely provisional diagnoses via reasonable differential diagnoses • perform relevant physical examinations to establish the nature and extent of problems, including immune compromise • recognise and correctly interpret abnormal findings • request appropriate diagnostic investigations, considering patients' history and examination • assess the severity of problems, the likelihood of complications, and clinical outcomes • develop management plans based on relevant guidelines and priority of treatment • consider target empiric therapy towards expected pathogens and local sensitivity patterns • determine need for prophylaxis following exposure to communicable disease or potential exposure to blood-borne viruses	• synthesise pertinent information to direct clinical encounters and diagnostic categories • develop appropriate management plans

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

Communication	• communicate openly, listen, and take patients' concerns seriously, giving them adequate opportunity to ask questions • provide information to patients to enable them to make fully informed decisions from various diagnostic, therapeutic, and management options • communicate clearly, effectively, respectfully, and promptly with other health professionals involved in patients' care • incorporate appropriate LGBTQIA+ safe language, including gender affirming language	• anticipate, read, and respond to verbal and nonverbal cues • demonstrate active listening skills • communicate patients' situations to colleagues, including senior clinicians
Quality and safety	• demonstrate safety skills, including infection control, adverse event reporting, and effective clinical handover • recognise and effectively deal with aggressive and violent patient behaviours through appropriate training • obtain informed consent before undertaking any investigation or providing treatment (except in an emergency) • ensure patients are informed of any risks and/or side effects associated with any part of proposed management plans	• perform hand hygiene, and take infection control precautions at appropriate moments
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 • recognise advancements in both scientific and managerial fields that could impact the provision of diagnostic microbiology services • practice and teach the principles of diagnostic stewardship, including selecting investigations and interventions that will minimise the number of invasive procedures patients require	• set unclear goals and objectives for self-learning • self-reflect infrequently • deliver teaching considering learners' level of training

Research	• search for, find, compile, analyse, interpret, and evaluate research for evidence for informing best clinical practice • appraise existing and new literature critically • appraise new interventions, chemotherapeutic agents, and devices critically	• refer to guidelines and medical literature to assist in clinical assessments when required • recognise the limitations of evidence and the challenges of applying research in daily practice
Cultural safety	• conduct a culturally appropriate and holistic consultation for patients of all ethnic backgrounds, particularly Aboriginal and Torres Strait Islander peoples and Māori	• display respect for patients' cultures, and attentiveness to social determinants of health • be cognisant of at least the most prevalent cultures in society, and display an appreciation of their sensitivities • appropriately access interpretive or culturally focused services
Ethics and professional behaviour	• demonstrate professional values, including compassion, empathy, respect for diversity, integrity, honesty, and partnership to all patients • hold information about patients in confidence, unless the release of information is required by law or public interest • assess patients' capacity for decision making, involving a proxy decision maker appropriately	• demonstrate professional conduct, honesty, and integrity • consider patients' decision-making capacity • identify patients' preferences regarding management and the role of families in decision making
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 • consider cost-effectiveness of therapeutic methods when planning and executing treatment plans	• demonstrate clinical reasoning by gathering focused information relevant to patients' care • recognise personal limitations and seek help in an appropriate way when required
Leadership, management, and teamwork	• work effectively as a member of multidisciplinary teams to achieve the best health outcomes for patients • demonstrate awareness of colleagues in difficulty, and work within the appropriate structural systems to support them while maintaining patient safety	• share relevant information with members of the healthcare team

	• liaise effectively with other health care providers and non-clinicians, including administrators, diagnostic service providers, and public health officials	
Health policy, systems, and advocacy	• participate in health promotion, disease prevention and control, screening, and reporting notifiable diseases • aim to achieve the optimal cost-effective patient care to allow maximum benefit from the available resources	• identify and navigate components of the healthcare system relevant to patients' care • identify and access relevant community resources to support patients' care

EPA 5: Management of transitions in care

Theme	Management of transitions in care	AT-EPA-05
Title	**Manage the transition of patient care between health professionals, providers, and contexts**	
Description	This activity requires the ability to: • manage transitions of patients'[8] care to ensure the optimal continuation of care between providers • identify appropriate 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, including ambulatory, critical care, inpatient, and outpatient settings (such as hospital in the home and outpatient antimicrobial therapy), and sexual health and tuberculosis clinics.	
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 • identify patients who can receive antimicrobials safely in the community rather than in hospital, and those who can safely be transferred from tertiary care to a hospital closer to home • identify and evaluate the role of patient support groups	• interpret the details of patients' conditions, illness severity, and potential emerging issues, with appropriate actions • provide accurate summaries of patients' information with accurate identification of problems or issues
Communication	• write relevant and detailed medical record entries, including clinical assessments and management plans • write comprehensive and accurate summaries of care, including discharge summaries, clinic letters, and transfer documentation • initiate and maintain verbal communication with other health professionals, when required	• communicate clearly with clinicians and other caregivers • use standardised verbal and written templates to improve the reliability of information transfer and prevent errors and omissions • communicate accurately and in a timely manner to ensure effective transitions between settings, and continuity and quality of care

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

	• provide clinic letters and accurate medication lists on discharge, along with plans for cessation or review • communicate with patients, families, and carers about transition of care, and engage and support these parties in decision making • arrange outpatient follow-up if required • incorporate appropriate LGBTQIA+ safe language, including gender affirming language	
Quality and safety	• identify patients at risk of poor transitions of care, and mitigate this risk • use electronic tools (where available) to securely store and transfer patient information • use consent processes, including written consent if required, for the release and exchange of information • be cognisant of the medicolegal context of written communications	• ensure that handover is complete, or work to mitigate risks if incomplete • ensure all outstanding results or procedures are followed up by receiving units and clinicians • keep patients' information secure, adhering to relevant legislation regarding personal information and privacy
Teaching and learning	• integrate clinical education in handover sessions and other transition of care meetings • tailor clinical education to the level of the professional parties involved	• take opportunities to teach junior colleagues during handover, as necessary
Cultural safety	• communicate with careful consideration to health literacy, language barriers, and culture regarding patients' preferences, and whether they are realistic and possible, respecting patients' choices • recognise the timing, location, privacy, and appropriateness of sharing information with patients	• include relevant information regarding patients' cultural or ethnic background in handovers, and whether an interpreter is required
Ethics and professional behaviour	• disclose and share only contextually appropriate medical and personal information • explain the clinical, ethical, and legal rationale for information disclosure • share information about patients' care in a manner consistent with privacy law and professional guidelines on confidentiality	• maintain respect for patients and other health professionals, including respecting privacy and confidentiality

	• explain 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	
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 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 • collaborate with diagnostic service providers, providing expert elicitation of clinical conditions and information that assists test interpretation	• recognise factors that impact on the transfer of care, and help subsequent health professionals understand the issues to continue care • work to overcome the potential barriers to continuity of care, appreciating the role of handover in overcoming these barriers
Health policy, systems, and advocacy	• contribute to processes for managing risks, and identify strategies for improvement in transition of care • engage in organisational processes to improve transitions of care, such as formal surveys or follow-up phone calls after hospital discharge	• 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[9], and initiate management • recognise clinical deterioration, and respond by following the local process for escalation of care • recognise and manage acutely unwell patients who require resuscitation • lead the resuscitation team initially, and involve other necessary services • liaise with transport services and medical teams • perform this activity primarily in inpatient settings.	
Behaviours		
Professional practice framework domain	**Ready to perform without supervision** Expected behaviours of a trainee who can routinely perform this activity without needing supervision The trainee will:	**Requires some supervision** Possible behaviours of a trainee who needs some supervision to perform this activity The trainee may:
Medical expertise	• recognise immediately life-threatening conditions and deteriorating and critically unwell patients, and respond appropriately • apply basic life support as indicated • demonstrate knowledge of potential risks and complications of resuscitation • initiate preliminary management of acute undifferentiated clinical presentations • select investigations that ensure maximum patient safety through excluding or diagnosing critical patient conditions • 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	• recognise seriously unwell patients requiring immediate care • recognise 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

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

	• provide clear and effective discharge summaries with recommendations for ongoing care	
Communication	• communicate clearly with other team members, and coordinate efforts of multidisciplinary team members • use closed-loop and clear communication with other healthcare team members during resuscitation • facilitate early communication with patients, families, and healthcare team members to allow shared decision making • negotiate realistic treatment goals, and determine and explain the expected prognoses and outcomes • employ communication strategies appropriate for younger patients or those with cognitive difficulties • explain the situation to patients in a sensitive and supportive manner, avoiding jargon and confirming their understanding • determine the level of health literacy of individual patients, and their level of understanding of agreed care decisions • incorporate appropriate LGBTQIA+ safe language, including gender affirming language	• 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 clinical audits • evaluate and explain the benefits and risks of clinical interventions based on individual patients' contexts • evaluate the quality and safety processes implemented within the workplace, and identify gaps in their structure • analyse adverse incidents and sentinel events to identify system issues that require optimisation • identify evidence-based practice gaps using clinical indicators, and implement changes to improve patients' outcomes • recognise the risks and benefits of operative interventions	• evaluate the quality of processes through well-designed audits • raise appropriate issues for review at morbidity and mortality meetings • evaluate the quality and safety processes implemented within the workplace, and identify gaps in their structure

	• coordinate and encourage innovation, and objectively evaluate improvement initiatives	
Teaching and learning	• demonstrate effective supervision skills and teaching methods adapted to the context of the training • encourage clinical inquiry among peers, junior colleagues, and students • seek guidance and feedback from healthcare teams to reflect on encounters and improve future patients' care	• mentor and train others to enhance team effectiveness • provide constructive feedback to junior colleagues to contribute to improvements in individuals' skills • coordinate and supervise junior colleagues from the emergency department and wards
Research	• select studies based on optimal trial design, freedom from bias, and precision of measurement • 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 • recognise 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, gender identity, sexual orientation, or belief systems • integrate culturally safe care of Aboriginal and Torres Strait Islander peoples and Māori into patients' management • consider cultural, ethical, and religious values and beliefs in leading multidisciplinary teams	• practise cultural competency appropriate for the community serviced • proactively identify barriers to healthcare access
Ethics and professional behaviour	• develop management plans 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 • obtain informed consent as required for investigations and treatment (except in an emergency)	• 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

	• consider the consequences of delivering treatment that is deemed futile, directing to palliative care as appropriate • facilitate interactions within multidisciplinary teams that respect values, encourage involvement, and engage all participants in decision making • demonstrate critical reflection on personal beliefs and attitudes, including how these may affect patient care and healthcare policy	
Judgement and decision making	• recognise the need for escalation of care, and escalate to appropriate staff or services • integrate evidence related to questions of diagnosis, therapy, prognosis, risks, and cause into clinical decision making • reconcile conflicting advice from other specialties, applying judgement in making clinical decisions in the presence of uncertainty • use care pathways effectively, including identifying reasons for variations in care	• involve additional staff to assist in a timely fashion when required • recognise personal limitations and seek help in an appropriate way when required
Leadership, management, and teamwork	• work collaboratively with staff and other subspecialty inpatient units • manage the transition of acute medical patients through their hospital journeys • lead a team by providing engagement while maintaining a focus on outcomes	• collaborate with and engage other team members, based on their roles and skills • ensure appropriate multidisciplinary assessment and management • 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 healthcare resources • collaborate with colleagues from other specialties to develop policies and protocols for the investigation and management of common acute medical problems	• recognise the systems for the escalation of care for deteriorating patients • recognise 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[10] • manage chronic and advanced conditions, comorbidities, complications, and disabilities • collaborate with other care providers • ensure continuity of care • facilitate patients' self-management and self-monitoring • engage with the broader health policy context.	
Behaviours		
Professional practice framework domain	**Ready to perform without supervision** Expected behaviours of a trainee who can routinely perform this activity without needing supervision	**Requires some supervision** Possible behaviours of a trainee who needs some supervision to perform this activity
	The trainee will:	The trainee may:
Medical expertise	• regularly 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 • recognise need and outline key components for comprehensive long-term management plans • use preventative interventions, such as immunisation and pre-exposure prophylaxis, for the prevention of infectious diseases	• assess patients' knowledge, beliefs, concerns, and daily behaviours related to their chronic condition and/or disability and its management • contribute to medical record entries on histories, examinations, and management plans in a way that is accurate and sufficient as a member of multidisciplinary teams
Communication	• encourage patients' self-management through education to take greater responsibility for their care, and support problem solving, including empowering young people in paediatric care	• provide healthy lifestyle advice and information to patients on the importance of self-management • work in partnership with patients, and motivate them to comply with agreed care plans

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

	• communicate with multidisciplinary team members, and involve patients in that dialogue • encourage and support parents and carers in caring for their children, and, if relevant, liaise with early childhood or educational settings • educate patients to recognise and monitor their symptoms, and undertake strategies to assist their recovery • educate patients about their health, using strength-based approaches and consideration of psychosocial context, including during transition from paediatric to adult care • provide a comprehensive summary of relevant medical information for patients transitioning from paediatric to adult care • incorporate appropriate LGBTQIA+ safe language, including gender affirming language	
Quality and safety	• use innovative models of chronic disease care, using telehealth and digitally integrated support services • review medicine use, and ensure patients understand safe medication administration to prevent errors • support patients' self-management by balancing between minimising risk and helping them become more independent • participate in quality improvement processes impacting on patients' abilities to undertake normal activities of daily living	• participate in continuous quality improvement processes and clinical audits on chronic disease management • identify activities that may improve patients' quality of life
Teaching and learning	• contribute to the development of clinical pathways for chronic diseases management, based on current clinical guidelines	• use clinical practice guidelines for chronic diseases management
Research	• 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 professional guidelines on confidentiality • use consent processes for the release and exchange of health information • assess patients' decision-making capacity, and appropriately identify and use proxy 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 long-term health care journeys • apply clinical judgement and knowledge of infectious diseases to formulate patient-centred management plans	• recognise personal limitations and seek help in an appropriate way when required
Leadership, management, and teamwork	• coordinate whole-person care through involvement in all stages of patients' care journeys • use a multidisciplinary approach across services to manage patients with chronic diseases and disabilities • develop collaborative relationships with patients, families, carers, and a range of health professionals	• participate in multidisciplinary care for patients with chronic diseases and disabilities, including organisational and community care, on a continuing basis, appropriate to patients' context
Health policy, systems, and advocacy	• use health screening for early intervention and chronic diseases management • assess alternative models of health care delivery for patients with chronic diseases and disabilities • engage in government initiatives to manage chronic diseases, reduce hospital admissions, improve patients' quality of life, and facilitate access to 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 mutually agreed management plans • verify patients'[11], family members', or carers' understanding of information conveyed • develop and implement plans for ensuring actions occur • ensure conversations are documented.	
Behaviours		
Professional practice framework domain	**Ready to perform without supervision** Expected behaviours of a trainee who can routinely perform this activity without needing supervision The trainee will:	**Requires some supervision** Possible behaviours of a trainee who needs some supervision to perform this activity The trainee may:
Medical expertise	• anticipate and be able to correct any misunderstandings patients may have about their conditions and/or risk factors • engage patients in discussion around clinical management, including planned assessments and investigations • provide opportunity for questions, and help with understanding of the implications of declining intervention and treatment • seek to understand the concerns and goals of patients, and undertake shared decision making • provide information to patients to enable them to make informed decisions about diagnostic, therapeutic, and management options • counsel patients regarding the benefits and risks of antimicrobials, as appropriate to them	• apply knowledge of the scientific basis of health and disease to the management of patients • demonstrate awareness of clinical problems being discussed • formulate management plans in partnership with patients

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

	• respond to patients' concerns about immunisation, addressing: » adverse events of immunisation » common myths » impact of immunisation on infection prevention for the individual and public health » misconceptions regarding immunisation » potential benefits	
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 • communicate with patients from a variety of cultural backgrounds, considering the diverse demographics present within the patient population • provide information to patients in plain language, avoiding jargon, acronyms, and complex medical terms • encourage questions, and answer them thoroughly • ask patients to share their thoughts or explain their management plans in their own words, to verify understanding • address patients' concerns rationally, and allay fears in the case of negative diagnosis • convey information considerately and sensitively to patients, seeking clarification if unsure of how best to proceed • discuss with patients their condition and the available management options, including potential benefits and harms • 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 • engage patients in shared decision making, explaining medication and providing written consumer information where appropriate	• 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, physical, cultural, socioeconomic, and situational factors • collaborate with patient liaison officers as required • communicate clearly with members of a multidisciplinary team

	• undertake contact tracing in liaison with hospital infection control teams or public heath units, as required for notifiable infections • counsel patients and their families on strategies to minimise infectious risks • incorporate appropriate LGBTQIA+ safe language, including gender affirming language	
Quality and safety	• provide information to patients in a way they can understand before asking for their consent • consider and evaluate young people's capacity for decision making and consent in communication and action • 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 patients' complaints • select patients and treatment regimens for retreatment if required	• 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 • teach strategies to enhance patients' adherence as required	• 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 NZ • 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 • recognise the limitations of the evidence and the challenges of applying research in daily practice
Cultural safety	• demonstrate effective and culturally safe communication with Aboriginal and Torres Strait Islander peoples and Māori • effectively communicate with members of other cultural groups by meeting patients' specific language, cultural, and communication needs	• identify when to use interpreters • allow enough time for communication across linguistic and cultural barriers

	• 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	
Ethics and professional behaviour	• encourage and support patients to be well informed about their health, and to use 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 patients' autonomy, and support their decision making • avoid sexual, intimate, and/or financial relationships with patients • demonstrate a caring attitude towards patients • respect patients, including protecting their rights to privacy and confidentiality • behave equitably towards all, irrespective of gender, age, culture, socioeconomic status, sexual preferences, beliefs, contribution to society, illness-related behaviours, or the illness itself • use social media ethically and according to legal obligations to protect patients' confidentiality and privacy
Leadership, management, and teamwork	• communicate effectively with team members involved in patients' care, and with patients • discuss medical assessments, treatment plans, and investigations with patients and primary care teams, working collaboratively with all • discuss patients' care needs with healthcare team members to align them with appropriate resources • facilitate an environment in which all team members feel they can contribute, and their opinion is valued • communicate accurately and succinctly, and motivate others on the healthcare team	• answer questions from team members • summarise, clarify, and communicate responsibilities of healthcare team members • keep healthcare team members focused on patient outcomes
Health policy, systems, and advocacy	• collaborate with other services, such as community health centres and consumer organisations, to help patients navigate the healthcare system	• communicate with and involve other health professionals as appropriate

EPA 9: Prescribing

Theme	Prescribing	AT-EPA-09
Title	**Prescribe 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, allergies, benefits, comorbidities, potential drug interactions, and risks • communicate with patients[12] about the benefits and risks of proposed therapies • provide instructions on medication administration effects and side effects • monitor medicines for efficacy, safety, and therapeutic levels, where appropriate • 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	• consider non-pharmacologic therapies • consider age, allergies, chronic disease status, immune compromise, lifestyle factors, patients' preferences, and potential drug interactions prior to prescribing new medications • select appropriate route and duration of antibiotic therapy, rationalising their use and modifying where necessary, including when new microbial data becomes available • select appropriate antimicrobials for medical-, surgical-, and travel-related prophylaxis • implement appropriate immunisation, such as: » adult, with or without adequate childhood immunisation » routine childhood immunisation » those with special requirements » travellers	• 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 accurately, appropriately, and safely • recognise the benefits, contraindications, dosage, drug interactions, rationale, risks, and side effects • identify and manage adverse events

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

	• plan for follow-up and monitoring, including therapeutic drug monitoring where appropriate • monitor patients for indicators of response to therapy, and for adverse drug reactions	
Communication	• counsel regarding efficacy, potential adverse events, and management for medications, including immunisations • discuss and evaluate the benefits, rationale, and risks of treatment options, including immunisations, making decisions in partnership with patients • write clear and legible prescriptions in plain language, including specific indications for the anticipated duration of therapy • educate patients about the intended use, expected outcomes, and potential side effects for each prescribed medication • describe optimal medication administration, including timing in relation to food, and concomitant medications	• discuss and explain the rationale for treatment options with patients • explain the benefits and burdens of therapies, considering patients' individual circumstances • write clearly legible scripts or charts using generic names of the required medications in full, including mg / kg / dose information and all legally required information • seek further advice from experienced clinicians or pharmacists when appropriate • address patients' concerns and expectations
Quality and safety	• undertake regular medication reviews to optimise adherence and efficacy, and identify adverse effects and drug interactions, de-prescribing when possible • use electronic prescribing tools, where available, and access electronic drug references to check for drug-drug interactions • 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 • report suspected adverse events to the relevant pharmacovigilance authority, and document in patients' medical records • consider local resistance patterns when prescribing antimicrobial therapy empirically	• 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	• ensure patients understand management plans, including adherence optimisation • use appropriate guidelines and evidence-based medicine resources	• undertake continuing professional development to maintain currency with prescribing guidelines • reflect on prescribing, and seek feedback from a supervisor

Research	• use the available resources to ensure medicines prescribed are up to date • use sources of independent information about medicines that provide accurate summaries of the available evidence on new medicines • access information resources on the use and safety of antimicrobial agents during pregnancy and breastfeeding, particularly high-risk patients • consult pharmacists, Australia and Aotearoa New Zealand antibiotic guidelines, and other databases to obtain prescribing information • review evidence for antimicrobial drug resistance, cross-resistance, and, in the setting of antibiotic misuse, its consequences locally and globally	• 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 appropriate for their level of health literacy • ensure appropriate information is available at all steps of the medicine management pathway	• appreciate patients' cultural and religious backgrounds, attitudes, and beliefs, and how these might influence the acceptability of pharmacological and non-pharmacological management approaches
Ethics and professional behaviour	• provide information to patients about prescribed medicines and: » how to take the medicine » potential side effects » what the medicine does » what the medicine is for » when the medicine should be stopped • provide written consumer information sheets when available • make prescribing decisions based on good safety data when the benefits outweigh the risks involved • recognise 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 medicines safely and effectively to optimise patient outcomes	• recognise personal limitations and seek help when required

	• use a systematic approach to select treatment options • use medicines safely and effectively to optimise patient outcomes • prescribe medicines appropriately to patients' clinical needs, in doses that meet their individual requirements, for a sufficient length of time, with the lowest cost to them • access decision support tools and guidelines to assist with antimicrobial prescribing	• consider the following factors for all medicines: » contraindications » funding (individual and community) and regulatory considerations » generic versus brand medicines » interactions » risk-benefit analysis
Leadership, management, and teamwork	• collaborate with medical, pharmacy, and nursing staff to ensure safe and effective use of medicines	• work collaboratively with pharmacists • participate in medication safety 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 allergies, current medicines, history, and preferences, ensuring that resources are used wisely for the benefit of patients • advocate in favour of immunisation as a public health strategy, where appropriate	• prescribe in accordance with the organisational policy

EPA 10: Investigations

Theme	Investigations	AT-EPA-10
Title	**Select, organise, and interpret investigations**	
Description	This activity requires the ability to: • select, plan, and use clinically and microbiologically appropriate investigations, incorporating evidence-based practice • prioritise patients receiving investigations (if there is a waiting list) • evaluate the anticipated value of investigations • work in partnership with patients[13] to facilitate choices that are right for them, and undertake pre-test counselling where required • provide aftercare for patients (if needed) • interpret the results and outcomes of investigations • communicate the outcome of investigations to patients.	
Behaviours		
Professional practice framework Domain	**Ready to perform without supervision** Expected behaviours of a trainee who can routinely perform this activity without needing supervision	**Requires some supervision** Possible behaviours of a trainee who needs some supervision to perform this activity
	The trainee will:	The trainee may:
Medical expertise	• choose evidence-based investigations as an adjunct to comprehensive clinical assessments, including in response to potential pathogen exposure • assess patients' concerns, and determine the need for specific tests that are likely to result in overall benefit • interpret microbial tests, using principles of pathology stewardship, including in the context of time elapsed since disease onset, and modify patients' management accordingly • anticipate likely breakthrough organisms based on the spectrum of antimicrobial coverage • consider diagnostic issues in relation to patients' fears, and recognise the need for patients', family members', and/or carers' understanding of procedures, investigation results, and disease management	• provide rationale for investigations • be cognisant of the significance of abnormal test results, and act on these • consider patient factors and comorbidities • consider age-specific reference ranges

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

Communication	• explain to patients the potential benefits, burdens, costs, risks, 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 understand the information they have been given, and whether they need more information before they make decisions • use written or visual material or other aids that are accurate and up to date to support discussions with patients • explain findings or possible outcomes of investigations to patients • give information that patients may find distressing in a considerate way	• discuss the benefits, complications, indications, and risks of investigations with patients before ordering investigations • explain the results of investigations to patients • arrange investigations, providing accurate and informative referrals, and liaise with other services where appropriate
Quality and safety	• identify adverse outcomes that may result from proposed investigations, focusing on patients' individual situations • weigh patients' benefits, costs, and risks of investigations in each clinical situation, and counsel patients regarding these • interpret test results considering their limitations, including false negatives and false positives	• 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 diagnosis and screening • work effectively and provide clinical leadership in a multidisciplinary team	• 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

	• review clinical trials for peers, such as journal club, interpreting findings with reference to general epidemiological principles	
Cultural safety	• appreciate patients' views and preferences about any proposed investigations and the adverse outcomes they are most concerned about	• consider patients' cultural and religious backgrounds, attitudes, and beliefs, and how these might influence the acceptability of proposed investigations
Ethics and professional behaviour	• remain within the scope of the authority given by patients (with the exception of emergencies) • 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 • explain the expected benefits as well as the potential risks of any proposed investigations 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, obtaining the appropriate informed consent, including financial consent, if necessary
Judgement and decision making	• evaluate the costs, benefits, and potential risks of each investigation in a clinical situation • adjust the investigative path depending on test results received • consider whether patients' conditions may get worse or better if no tests are selected • apply diagnostic reasoning to minimise the number of investigations used and potential harm from false positives • interpret laboratory resistance testing based on knowledge of resistance mechanisms, cross-resistance, and inducible resistance • interpret and communicate antibiograms • interpret clinical signs and read radiological investigation reports • interpret pathology results and read reports	• choose the most appropriate investigation for clinical scenarios in discussion with patients • recognise personal limitations and seek help in an appropriate way when required • recognise a local or nearby disease outbreak
Leadership, management, and teamwork	• consider the role other members of the healthcare team might play, and what other sources of information and support are available	• demonstrate awareness of what parts of investigations are provided by different doctors or health professionals

	• ensure results are checked in a timely manner, taking responsibility for following up results	
Health policy, systems, and advocacy	• select and justify investigations regarding the pathological basis of disease, appropriateness, cost effectiveness, safety, and utility • consider resource use through peer review of testing behaviours • advocate for marginalised and underserved communities • outline reporting procedures for patients with newly diagnosed notifiable infections	

EPA 11: Clinic management

Theme	Clinic management	AT-EPA-11
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[14] • 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 accurate and appropriately prioritised problem lists in the clinical notes or as part of ambulatory care reviews • update documentation in a timeframe appropriate to the clinical situation of patients	• recognise 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 • write accurate and comprehensive clinical correspondence to patients, referring clinicians, general practitioners, and any other clinicians involved in direct patient care	• wherever practical, meet patients' specific language and communication needs • facilitate appropriate use of interpreter services and translated materials

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

	• incorporate appropriate LGBTQIA+ safe language, including gender affirming language	
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 • recognise procedures in the event of managing patients exposed to, or potentially exposed to, an agent of bioterrorism, and contribute to a coordinated public health response	• take reasonable steps to address issues if patients' safety may be compromised • follow a systematic approach to improving the quality and safety of health care • participate in organisational quality and safety activities, including clinical incident reviews
Teaching and learning	• evaluate their own professional practice • 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 • provide information in a manner so patients are fully informed when consenting to any research • use resources to maintain up-to-date knowledge on existing and emerging infectious diseases and infectious disease outbreaks worldwide, and to assist in decision making	• allow patients to make informed and voluntary decisions to participate in research • regularly review resources on global infectious disease epidemiology
Cultural safety	• apply knowledge of the cultural needs of the community being served, and how to shape the service appropriate for 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	• recognise the responsibility to protect and advance the health and wellbeing of individuals and communities

	• comply with the legal requirements of preparing and managing documentation • demonstrate awareness of financial and other conflicts of interest	• maintain the confidentiality of documentation, and store clinical notes appropriately • ensure that the use of social media and artificial intelligence (AI) is consistent with ethical and legal obligations
Judgement and decision making	• integrate chronic condition management, early detection, health maintenance, and prevention, where relevant, into clinical practice • work to achieve optimal and cost-effective patient care that allows maximum benefit from the available resources	• consider the appropriate use of diagnostic interventions, health care facilities, human resources, and therapeutic modalities
Leadership, management, and teamwork	• prepare for and conduct clinical encounters in a well-organised and time-efficient manner • work effectively as a member of multidisciplinary teams or other professional groups • ensure that all important discussions with colleagues, multidisciplinary team members, and patients are appropriately documented • review discharge summaries, notes, and other communications written by junior colleagues • support colleagues who raise concerns about patients' safety	• attend relevant clinical meetings regularly
Health policy, systems, and advocacy	• demonstrate capacity to engage in the surveillance and monitoring of the health status of populations in the outpatient setting • maintain good relationships with health agencies and services, including services in education, early childhood care providers, and adult and paediatric immunisation services • apply the principles of efficient and equitable allocation of resources to meet individual, community, and national health needs	• review common population health screening and prevention approaches

Knowledge Guides

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

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

#	Title
1	**Key infectious diseases and syndromes**
2	**Infections in specific hosts and populations**
3	**Microbiology**
4	**Antimicrobials**
5	**Immunisation**
6	**Healthcare-associated infections**
7	**Public health**

KEY PRESENTATIONS AND CONDITIONS

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

Presentations

- Febrile illness:
  - » acute
  - » associated with:
    - ○ arthritis
    - ○ rash
  - » periodic
  - » without focus (unknown origin)
- In immunosuppressed hosts, with:
  - » blunted or atypical clinical features
  - » fever
  - » risk of infection reactivation
  - » spectrum of pathogens they are susceptible to
  - » timing of diseases onset
- Paradoxical reactions in the setting of immune reconstitution
- Returned traveller:
  - » fever
  - » timing of exposure
- Sepsis / Septic shock

Blood stream infections

- Including those caused by:
  - » enterococci
  - » gram-negative bacteria
  - » Staphylococcus aureus
  - » streptococci
  - » yeasts

Cardiovascular conditions

- Device-related, such as:
  - » implantable devices
- Endarteritis
- Infective endocarditis
- Myocarditis
- Pericarditis
- Rheumatic fever
- Vascular foreign body infections, such as:
  - » vascular graft infection
- Vasculitis

Central nervous system conditions

- Abscess:
  - » cerebral
  - » epidural
- Encephalitis:
  - » acute
  - » chronic

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[15] 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

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

- Guillain–Barre syndrome
- Infections associated with prosthetic materials, such as:
  - » ventriculoperitoneal shunts
- Meningitis, such as:
  - » aseptic
  - » bacterial
  - » fungal
  - » healthcare-associated / post-operative
  - » parasitic
  - » post-traumatic
  - » tuberculous
- Myopathy with infectious causes

Emerging and remerging pathogens, such as flavivirus

Exposure to biowarfare agents, such as anthrax

Gastrointestinal, hepatobiliary, and intra-abdominal conditions

- Abscess:
  - » intra-abdominal
  - » liver:
    - amoebiasis
    - pyogenic
- Cholangitis
- Colitis / Enteritis, infectious
- *Helicobacter pylori*
- Hepatitis, viral
- Peritonitis:
  - » appendicitis
  - » catheter-related
  - » spontaneous

Head and neck conditions

- Cellulitis:
  - » orbital
  - » post-septal
- Ear:
  - » mastoiditis
  - » otitis externa, including:
    - malignant
  - » otitis media
- Eye and orbit:
  - » conjunctivitis
  - » endophthalmitis
  - » keratitis
  - » peri-orbital infections
  - » retinitis
  - » uveitis
- Mouth:
  - » infections, such as:
    - odontogenic
  - » osteomyelitis
- Vincent's angina

Infections involving multiple systems

- Diphtheria
- Human immunodeficiency virus (HIV)
- Malaria
- Polio
- Rheumatic fever
- Tetanus
- Typhoid

Musculoskeletal conditions

- Arthritis:
  - » reactive
  - » septic
  - » viral
- Bursitis, septic
- Infections in bones and joints related to prostheses
- Osteomyelitis:
  - » acute
  - » chronic

Non-infectious diseases and syndromes that commonly mimic infection

- Connective tissue diseases, such as:
  - » adult-onset Stills disease (AOSD)
  - » rheumatoid arthritis
  - » systemic lupus erythematosus
- Haemophagocytic lymphohistiocytosis (HLH)
- Haematological malignancies, such as:
  - » leukaemia
  - » lymphoma
- Kikuchi disease
- Pyoderma gangrenosum
- Macrophage activating syndrome
- Scurvy
- Vasculitis

Pharynx and peripharyngeal space conditions

- Abscess:
  - » peritonsillar
  - » retropharyngeal
- Cervical lymphadenitis, such as:
  - » granulomatous
  - » lymphotropic virus
  - » toxoplasmosis
- Lemierre syndrome
- Ludwig angina
- Mycobacterial
- Pharyngitis
- Thyroiditis:
  - » subacute
  - » suppurative
- Tonsillitis, suppurative

Respiratory conditions

- Lower respiratory, such as:
  - » abscess, lung
  - » bronchiectasis
  - » bronchiolitis
  - » bronchitis
  - » empyema
  - » pneumonia
- Upper respiratory, such as:
  - » epiglottitis
  - » laryngitis
  - » laryngotracheobronchitis
  - » sinusitis

Severe communicable diseases, such as haemorrhagic fevers

Skin and soft tissue conditions

- Abscess
- Bites, such as:
  - » animal
  - » clenched fist
  - » human
- Carbuncle
- Cellulitis
- Cutaneous involvement in infections:
  - » bacterial
  - » mycobacterial
  - » mycotic
  - » viral
- Folliculitis
- Furuncle
- Gangrene:
  - » clostridial myonecrosis
  - » Fournier
- Impetigo
- Infections:
  - » subcutaneous tissue
  - » wound
- Necrotising fasciitis
- Scabies
- Skin implantation injuries, such as:
  - » soil
  - » vegetation
  - » water

Urinary conditions

- Abscess:
  - » kidney
- Asymptomatic bacteriuria
- Cystitis
- Epididymitis
- Infection associated with urinary tract prosthesis
- Orchitis
- Prostatitis
- Pyelonephritis
- Urethritis

	Zoonotic infections, such as: • Bartonella • Brucellosis • Leptospirosis • Q fever • Toxoplasmosis	
AIM	**Genital conditions** • Postoperative gynaecological infections, such as: » infections post-termination of pregnancy • Proctitis • Urethritis (male) **Genital, pelvic, and sexually transmitted infections** • Chlamydia • Genital: » ulcers » warts • Gonorrhoea • Infestations, such as: » pubic lice • Lesions, genital • *Mycoplasma genitalium* • Pelvic infections, such as: » chorioamnionitis » endometritis » pelvic inflammatory disease » post-caesarean infection » postpartum fever » vaginal discharge » vaginitis » vaginosis • Syphilis • Vulvitis **Skin and soft tissue** • Diabetic foot infection	

	PCH • Bronchiolitis • Infections: » congenital » perinatal • Kawasaki disease • Necrotising enterocolitis • Omphalitis • Sepsis, neonatal **Genital, pelvic, and sexually transmitted infections** • Some knowledge of sexually transmitted and genital infections is expected in paediatric infectious diseases, but exposure is likely to be limited during training **Non-infectious diseases and syndromes that commonly mimic infection** • Kawasaki disease • Paediatric inflammatory multisystem syndrome (PIMS-TS)	
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.	No less common or more complex presentations and conditions identified	
EPIDEMIOLOGY, PATHOPHYSIOLOGY, AND CLINICAL SCIENCES Advanced Trainees will have a comprehensive depth of knowledge of the principles of the foundational sciences.	• Epidemiology of infectious diseases • Expected course of infectious diseases • Microbiology, including normal flora associated with organ systems • Pathogen endemicity • Pathophysiology / Pathogenesis of infectious diseases • Predisposing factors to infection • Unique aspects of infection presentations in special risk groups **Clinical sciences of infectious diseases** • Bacteria: » cell wall deficient » gram: ○ negative ○ positive » spirochaetes • Fungi: » dimorphic » moulds » yeasts	

- Mycobacteria:
  - » non-tuberculous
  - » tuberculous
- Parasites:
  - » ectoparasites
  - » helminths:
    - nematodes (round worms)
    - cestodes (tape worms)
    - trematodes (flukes)
  - » protozoa
- Prions
- Viruses:
  - » DNA
  - » ribonucleic acid (RNA)

PCH

- Epidemiology across neonatal- and paediatric-aged spectrum to the conditions above

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.

- Diagnostic tests:
  - » biopsy
  - » medical imaging
  - » specimen tests
- Examination and clinical assessment

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.

- Management of infectious diseases, such as:
  - » differences in management of paediatric and adult patients, such as bone and joint infection
  - » prevention and screening
  - » reporting procedures
  - » suppressive therapy

KEY PRESENTATIONS AND CONDITIONS

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

In immunocompromised hosts

- Diarrhoea, chronic
- Febrile neutropenia
- Infections:
  - » Bacterial, such as:
    - ○ *Burkholderia cepacia*
    - ○ *Burkholderia pseudomallei*
    - ○ encapsulated organisms
    - ○ *Listeria monocytogenes*
    - ○ *Pseudomonas aeruginosa*
    - ○ *Stenotrophomonas maltophilia*
  - » central nervous system:
    - ○ brain lesions
    - ○ encephalitis
    - ○ meningitis
  - » fungal, due to:
    - ○ dimorphic
    - ○ moulds
    - ○ yeasts
  - » mycobacterial:
    - ○ non-tuberculous
    - ○ tuberculous
  - » parasitic and ectoparasitic:
    - ○ scabies
    - ○ strongyloidiasis
    - ○ toxoplasmosis
  - » viral with the potential to reactivate, such as:
    - ○ cytomegalovirus
    - ○ Epstein–Barr virus
    - ○ hepatitis B
    - ○ varicella zoster
- Pyrexia of unknown origin

Related to travel

- Ehrlichiosis and rickettsioses
- Helminthic diseases, such as:
  - » intestinal nematodes
  - » schistosomiasis
  - » tapeworms
  - » tissue nematodes
  - » trematodes
- Infections:
  - » bacterial, such as:
    - ○ brucellosis
    - ○ enteric fever

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[16] 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

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

		» fungal, such as:
		  ○ coccidioidomycosis
		  ○ histoplasmosis
		 » spirochete, such as:
		  ○ Lyme disease
		 » viral, such as:
		  ○ chikungunya
		  ○ haemorrhagic fevers
		  ○ yellow fever
		• Protozoal diseases, such as:
		 » amoebiasis
		 » leishmaniasis
		 » malaria	

	PCH	• Immunocompromised newborns
		• Infections:
		 » congenital
		 » neonatal
		 » perinatal
		• Vertically transmitted infections:
		 » cytomegalovirus
		 » enterovirus
		 » group B streptococcus (GBS)
		 » hepatitis:
		  ○ B
		  ○ C
		 » herpes simplex viruses
		 » human immunodeficiency virus (HIV)
		 » listeria
		 » parvovirus
		 » rubella
		 » toxoplasma
		 » Treponema pallidum
		 » varicella zoster virus	

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.
		• Infections:
		 » bacterial, such as:
		  ○ tularaemia
		 » spirochete, such as:
		  ○ yaws
		• Infections arising in the transplant patient:
		 » haematopoietic stem cell
		 » solid organ
		• Protozoal diseases, such as:
		 » trypanosomiasis	

	PCH	• Infections in patients with other chronic conditions: » complications of prematurity » heart disease, congenital » lung disease » weakness or severe neurological disease	

EPIDEMIOLOGY, PATHOPHYSIOLOGY, AND CLINICAL SCIENCES

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

- Antimicrobial resistance patterns of imported infections and its influence on empirical prescribing for infection in return travellers
- Clinical features of infections and other disease processes in special hosts
- Conditions that may lead to immunosuppression, such as:
  - » diabetes mellitus
  - » extremes of age
  - » severe malnutrition
- Epidemiological and clinical features of imported infections in immigrant groups
- Epidemiology of infections in Indigenous populations in Australia and Aotearoa New Zealand
- Function of the intact immune system
- Identification of at-risk patients, including:
  - » burns and trauma patients
  - » chronic pulmonary patients, such as those with:
    - bronchiectasis
    - cystic fibrosis
  - » critically ill patients in intensive care units
  - » immigrants and refugees
  - » immunocompromised hosts, such as those with:
    - congenital immunodeficiency syndromes
    - HIV
    - human T-lymphotropic virus
    - hyposplenism / splenectomy
    - malignancy:
      - haematologic
      - solid organ
    - neutropenia
    - other conditions requiring immunosuppressive drugs
    - transplants:
      - haemopoietic
      - solid organ
  - » Indigenous peoples, such as Aboriginal and Torres Strait Islander peoples and Māori
  - » living with:
    - homelessness
    - incarceration
    - poverty
  - » people who inject drugs
  - » post-surgical patients, including those with implanted medical devices / grafts
  - » pregnant people
  - » residing in:
    - rural and remote areas
    - tropical regions of Australia
  - » travellers
- Interactions, modes of action, pharmacokinetics, and side effects of the commonly used agents to treat infection in special hosts
- Pathophysiology of special host conditions
- Unique aspects of infection presentations in special risk groups, with respect to:
  - » blunted or atypical clinical features due to immunosuppression
  - » common syndromic presentations in immunocompromised hosts
  - » key infective aetiologies in immunocompromised hosts
  - » paradoxical reactions in the setting of immune reconstitution
  - » pathogen endemicity
  - » risk of infection reactivation in the context of immunosuppression
  - » spectrum of pathogens the patient is potentially exposed and susceptible to, including normally non-pathogenic organisms

- » timing of disease onset in relation to immunosuppression
- » timing of travel and exposure

PCH

- Epidemiology of chronic diseases relating to premature delivery in Aboriginal and Torres Strait Islander peoples and Māori

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

- Antenatal and perinatal screening
- Assessment of immune compromise
- Clinical examination
- Immunology tests
- Microbiologic tests
- Pathology tests, including:
  - » anatomical pathology
  - » biochemistry
  - » genetic pathology
  - » haematology
  - » immunopathology
- Radiologic investigations

Procedures

- Aspiration – joint
- Biopsy:
  - » skin
  - » tissue
- Lumbar puncture
- Paracentesis
- Pleurocentesis

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.

Aboriginal and Torres Strait Islander peoples and Māori

- Barriers to high-quality, evidence-based care in primary, secondary, and tertiary settings that reduce health equity, and the evidence-based strategies used to overcome these
- Entrenched inequities in the spectrum of infectious diseases, their burden, common management, and outcomes
- Impact of colonisation and racism in the permutation of white privilege, and the implications on this trauma for care

Immigrants and refugees

- Diagnostic screening for infections as part of migrant health screening
- Health needs of migrant populations

Other factors that may impact care

- People living with HIV:
  - » co-infections, such as:
    - viral hepatitis
  - » counselling to patients and individuals potentially exposed to HIV
  - » long-term prevention and management of comorbidities in people living with HIV, such as:
    - bone disease
    - cancer
    - cardiovascular disease
    - diabetes mellitus
    - dyslipidaemia
    - kidney failure
    - lung diseases
  - » perinatal management of HIV for the prevention of mother-to-child transmission

  - pharmacology, such as:
    - antiretroviral treatment
    - drug-drug interactions
    - immunisation
    - mechanisms of resistance and cross-resistance
  - prophylaxis:
    - opportunistic infections
    - post-exposure
    - pre-exposure
- Pregnant people:
  - risk of vertical transmission of infectious diseases during pregnancy, including:
    - cytomegalovirus
    - enterovirus
    - group B streptococcus
    - hepatitis:
      - B
      - C
    - herpes simplex viruses
    - HIV
    - listeria
    - parvovirus
    - rubella
    - syphilis
    - toxoplasma
    - *Treponema pallidum*
    - varicella zoster virus
- Related to travel:
  - availability, efficacy, guidelines, safety, and use of vaccines
  - geographical patterns of disease and risk factors for acquisition
  - patient education regarding risk and risk mitigation strategies
  - prevention of travel-associated illness
  - safe travel advice for high-risk populations, such as immunocompromised
  - travel clinic and the medicolegal issues involved
  - travel health websites

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.

- Consideration of samples and volume, including yield versus risk of collection
- Diagnostic stewardship, and:
  - » considerations of cost-effectiveness
  - » its role in optimal diagnostic testing
  - » the prevention of harm from inappropriate use of diagnostic testing
- Human microbiome, colonising organisms that constitute normal flora at different body sites, and the features of pathological infection
- Microbiologic results for a particular infectious disease or syndrome, considering:
  - » accuracy, such as standard error and coefficient of variation
  - » disease prevalence
  - » pre-test probability
  - » risk of false positives and negatives
  - » sensitivity and specificity
- Specimen selection, collection, and transportation for a particular infectious disease or syndrome
- Spread and transmission of infectious disease

PCH

- Common organisms for those age groups
- Spectrum of pathogenic organisms by age, particularly in the first few months to years of life, such as cause of sepsis

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[17], families, and carers, and be able to explain procedural risk

Methods of microbiological investigations

- Antigen detection methods
- Antimicrobial susceptibility testing
- Disc diffusion
- Genotypic methods and further susceptibility tests
- Metagenomic analysis
- Methods, such as:
  - » automated methods
  - » minimum inhibitory concentration
- Microscopy and culture:
  - » identification of commonly encountered groups of pathogens based on features, such as:
    - biochemical tests
    - colony characteristics
    - gram stain
    - growth requirements
    - mass spectrometry
    - molecular techniques
    - motility
  - » microscopy for parasites

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

and obtain informed consent where applicable.	• Molecular methods: » common methods used in laboratory identification of bacteria, fungi, parasites, and viruses, such as: ○ nucleic acid amplification commercial kits versus in-house ○ polymerase chain reaction (PCR) tests ○ role of the reference laboratory • Serology: » antibody detection » role in interpretation of common serological tests, with consideration to: ○ patient factors such as immunosuppression and administration of blood products ○ the role of convalescent serology ○ timing of illness • Specimen types: » blood: ○ blood culture systems ○ limitations of blood culture media ○ volume of blood required » cerebrospinal fluid (CSF): ○ triage of testing on small, volume-critical specimens ○ use and limitations of CSF diagnostics methods for important central nervous system infections, such as: ▪ brain lesions ▪ encephalitis ▪ meningitis » faecal pathogens detected by: ○ antigen ○ culture ○ PCR » mycobacteria: ○ culture ○ drug susceptibility testing and limitations ○ PCR ○ specific stains, such as: ▪ fluorescent ▪ Ziehl-Neelsen » sputum: ○ contaminated specimen ○ limitations of sputum microscopy » sterile tissues and fluids » swabs » tissue » urine: ○ cell counts ○ culture ○ red cell morphology • Whole genome sequencing **Microbiology laboratory service in the investigation, diagnosis, and management of infection** • Pre-analytic considerations, such as selecting correct: » patient identification » sample type and volume » timing of collection » transport requirements and timing

IMPORTANT SPECIFIC ISSUES

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

- Advice to clinicians regarding critical / urgent microbiology results, or for commonly misunderstood diagnostic test results
- Appropriate microbiological tests for clinical investigation, and facilitation of specimens with complex or critical testing requirements
- Biosafety and biosecurity in the lab with regards to Australian / New Zealand standards and Security Sensitive Biological Agents (SSBA) Regulatory Scheme
- Common sources of error in each stage of the testing cycle, and how to mitigate them
- Considerations and requirements when introducing new laboratory tests, including concepts of verification and validation
- Laboratory information systems, including:
  - » interactions with the electronic health record
  - » limitations
  - » utilisation for audit purposes
- National and international antimicrobial guidelines
- Notifiable disease recognition and notification
- Quality assurance and control in the laboratory
- Risks and management of laboratory exposures
- Testing for antimicrobial resistant organisms, such as:
  - » carbapenem-resistant organisms

CLINICAL SCIENCES

Advanced Trainees will describe the principles of the foundational sciences.

- Antimicrobial agents:
  - » antibacterial
  - » antifungal
  - » antimycobacterial
  - » antiparasitic
  - » antiviral
- Classification of antimicrobial agents

Adjunct therapeutic modalities for management of infections

- Addressing underlying anatomical, physiological, and psychosocial risks for acquisition, persistence, or recurrence of infection
- Immune-modulating therapeutic agents, such as:
  - » glucocorticoids
  - » granulocyte colony-stimulating factor
  - » normal immunoglobulin in:
    - ○ necrotising fasciitis
    - ○ *Streptococcus pyogenes*
    - ○ toxic shock syndrome
- Novel and emerging therapies, such as phage therapy
- Products to modulate the microbiome (e.g. faecal microbiota transplantation)
- Surgery for source control

Pharmacological principles of antimicrobials

- Adverse effects:
  - » allergy, such as:
    - ○ cross-reactivity
    - ○ de-labelling implications
    - ○ types of reactions
  - » class-related and drug-specific contraindications
  - » dose-related versus idiosyncratic drug adverse effects
- Agents that require monitoring, and the monitoring process, including baseline assessment
- Biofilm and impacts upon antimicrobial exposure
- Drug-drug interactions
- Failure
- Formulations
- Mechanisms of action and resistance, such as:
  - » antimicrobial spectrum
  - » pharmacodynamics concepts, such as:
    - ○ post-antibiotic effect
    - ○ site of action within microbe
- Pharmacodynamics
- Pharmacokinetics, such as:
  - » antimicrobial agents in normal and diseased states, including critical illness
  - » bioavailability
  - » concepts both generally and in relation to antimicrobial usage, such as:
    - ○ absorption
    - ○ distribution
    - ○ excretion
    - ○ metabolism
  - » drug exposure at different sites of infection
  - » optimal dose adjustments, such as in kidney and hepatic impairment, and extremes of body weight

- » targets for antimicrobial efficacy, and the impacts of antimicrobial dosing to optimise treatment outcomes, such as time versus concentration-based killing
- Pregnancy and lactation risk assessment
- Principles and indications for chemoprophylaxis and surgical prophylaxis
- Resistance:
  - » general mechanisms, such as:
    - chromosomal, plasmid, and transposon
    - class
    - cross
    - inducible and constitutive
  - » specific mechanisms for key bacteria, such as carbapenemase-producing Enterobacterales (CPE), extended-spectrum beta-lactamases (ESBLs), and methicillin-resistant *Staphylococcus aureus* (MRSA), and implications for targeted and empiric therapy
- Therapeutic drug monitoring for the safe and effective use of antimicrobial therapy

AIM

- Adult dosing of antimicrobials

PCH

- Formulations:
  - » child-friendly formulations, including concept of palatability
  - » pill-swallowing and crushing tablets / dispersing capsules
- Paediatric and neonatal dosing of antimicrobials:
  - » commonly used medications
  - » weight-based and body surface area-based dosing

ELIGIBILITY CONSIDERATIONS

Advanced Trainees will assess the patient's[18] current condition and plan the next steps.

- Antitoxins and immune globulin in treatment of infection
- Contraindications of antimicrobials, such as:
  - » allergy
  - » drug and food interactions
- Evidence-based dose and duration of antimicrobial agents
- Feasibility and availability
- Indications and evidence base for antimicrobial use
- Prescription of antimicrobial agents in a safe and effective manner, considering their positive and negative effects in individual patients and the community
- Principles of home therapy with antibiotics, such as:
  - » choice of antibiotic appropriate stability
  - » dosing
  - » infections and circumstances amenable to hospital in the home and contraindications, such as medical and social
  - » monitoring
  - » outpatient parenteral antibiotic therapy
  - » patient selection issues
  - » vascular access and pumps
- Principles of initiating antimicrobial therapy, such as:
  - » choice of empiric therapy for syndromes
  - » discussing rationale for choice
  - » host factors, such as:
    - age
    - body mass index
    - kidney and hepatic function
    - pregnancy

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

	» importance of completing investigations prior to initiating antimicrobial therapy » intravenous versus oral antimicrobial therapy » timing of immediate empiric therapy versus post-microbiological diagnosis • Rationale for use of multi-agent therapy, such as: » prevention of resistance » spectrum of cover for empiric regimen based on local antibiograms » synergy
PCH	• Pharmacological principles of antimicrobials: » approval for use in neonates, infants, and children » use in pregnancy and during lactation
LESS COMMON OR MORE COMPLEX PATIENT CONSIDERATIONS Advanced Trainees will understand the resources that should be used to help manage patients.	No less common or more complex patient considerations identified
UNDERTAKING THERAPY Advanced Trainees will monitor the progress of patients during the therapy.	• Prophylaxis and treatment of infections to prevent disruptive effects on host normal flora, which may lead to: » *Candida* spp. infection » Clostridium difficile infection » development and spread of resistant microbial strains • Surgical and other types of antimicrobial prophylaxis, such as: » appropriate durations and dosing » impact on surgical-site infections » post-operative prescribing
PCH	• Differences in adverse effects between paediatric and adult patients • Practical issues with antibiotic choice in paediatric patients, such as adherence, dosing frequency, and formulations
POST-THERAPY Advanced Trainees will know how to monitor and manage patients post-therapy.	• Advice for patients on common adverse effects and role (if any) of probiotics • Consequences of antimicrobial therapy
IMPORTANT SPECIFIC ISSUES Advanced Trainees will identify important specialty-specific issues and the impact of these on diagnosis, management and outcomes.	**Antimicrobial stewardship** • Audit • Antimicrobial development • Antimicrobial resistance • Broad spectrum to narrow spectrum de-escalation • De-labelling allergies • Desensitisation • Epidemiology of antimicrobial resistance, such as: » contributing factors » incidence » local resistance – own community and hospital, including concept and understanding of antibiograms prevalence

    - » national and global variability of resistance and implications for travellers, including those who have been admitted to healthcare facilities overseas
- Implications of antimicrobial resistance at various levels:
    - » community
    - » healthcare setting
    - » patient
- Intravenous to oral switch
- Metrics for measuring efficacy of an antimicrobial stewardship program
- Organisation and implementation of antimicrobial stewardship programs at the hospital level, based on the requirements set out in Standard 3 of the Australian Commission on Safety and Quality in Health Care (Preventing and Controlling Infections Standard) and the Ngā Paerewa Health and Disability Services Standard
- Recognition of benefits associated with antimicrobial stewardship programs and the components of these programs
- Restricted agents

Treatment of specific infections

- Antimicrobial therapy for implant infections
- Chemoprophylaxis
- Diagnostic tests for implant-associated infections
- Empirical and targeted antimicrobial therapy for surgical site infections, as well as indications for surgical retreatment
- Surgical treatment of implant infections

CLINICAL SCIENCES

Advanced Trainees will describe the principles of the foundational sciences.

- Adaptive and innate immune responses to immunisations used in clinical practice, such as live attenuated and non-live immunisations against infectious diseases
- Monoclonals used as passive immunisation, such as nirsevimab and palivizumab
- New immunisation strategies and vaccines
- Passive and active immunisation in different populations
- Types of vaccines, such as:
  - » component
  - » conjugated polysaccharide
  - » inactivated
  - » killed organisms
  - » live attenuated
  - » messenger RNA (mRNA)
  - » protein conjugate
  - » purified bacterial protein
  - » recombinant
  - » toxoid
  - » viral vectors
- Use of vaccines in post-exposure prophylaxis, including to boost pre-existing immunity, such as:
  - » chickenpox
  - » hepatitis:
    - A
    - B
  - » meningococcal ACWY
  - » rabies
  - » tetanus

PCH

- General structure of and rationale for local / national immunisation dosing schedule, including:
  - » avoidance of polysaccharide vaccines in children under 2 years of age
  - » vaccines for special groups
- Maturation of immune response

ELIGIBILITY CONSIDERATIONS

Advanced Trainees will assess the patient's[19] current condition and plan the next steps.

- Advice for patients on immunisation, including:
  - » common myths and misinformation
  - » sharing knowledge about immunisation (SKAI)
- Benefits of immunisation
- Immunisation requirements for:
  - » special populations
  - » the general population
  - » travellers
- Immunisation strategies for patients who have undergone cancer chemotherapy
- Pre-hematopoietic stem cell transplantation (HSCT) considerations, such as:
  - » immunisation strategies:
    - post-transplant
    - pre-transplant

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

	» infectious diseases evaluation, and pre- and post-transplant • Standard vaccine schedule and catch-up schedules, considering: » age at immunisation » prior adverse events » spacing of vaccines
PCH	• Specific immunisation considerations for: » long-term hospitalised infants and children » premature babies
LESS COMMON OR MORE COMPLEX PATIENT CONSIDERATIONS Advanced Trainees will understand the resources that should be used to help manage patients.	• Basic concepts and referral to immunology services • Immunisation in patients with immunocompromise due to: » congenital immunodeficiency syndromes » human immunodeficiency virus (HIV) infection » malignancy, such as: ○ haematological ○ solid organ » oncological treatment » other patient groups with special requirements, such as bleeding disorders » rheumatological conditions » transplant: ○ haemopoietic ○ solid organ • Immunisation protocols for patients with reduced splenic function • Testing for immunity pre- and post-immunisation
UNDERTAKING THERAPY Advanced Trainees will monitor the progress of patients during the therapy.	• Adverse effects of licensed vaccines • Contraindications • Effectiveness • Efficacy • Indications • Misconceptions
PCH	• Bacille Calmette–Guérin (BCG) and travel vaccines for children • Knowledge of when routine vaccines may be given early • National and state-based immunisation schedules, including: » advice for travellers » eligibility, including Medicare (Australia) » how to access them
POST-THERAPY Advanced Trainees will know how to monitor and manage patients post-therapy.	• Counsel patients and families • Effects of immunisation on a population, such as: » age shifts in natural infection » herd immunity » serotype replacement • Future immunisation schedule • Management of adverse reactions to immunisations, such as: » common reactions, implications, and management » criteria and legislation for vaccine exemption » legislation about immunisation for children, and eligibility / implications for childcare and education » local and national vaccine adverse event reporting » severe reactions, and when specialist referral is required

IMPORTANT SPECIFIC ISSUES

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

- Biological and iatrogenic aetiologies of immune deficiency
- Licensed vaccines in prevention of disease caused by:
  - » infection:
    - bacterial
    - viral
  - » toxins – bacterial
- National and international schedules for immunisation
- Recommendations for immunisation of healthcare workers

KEY PRESENTATIONS AND CONDITIONS

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

Conditions

- Infections:
  - » device-related:
    - ○ catheter-associated urinary tract infection (CAUTI)
    - ○ intravascular line infections, including:
      - ▪ central line-associated bloodstream infections (CLABSI)
    - ○ ventilator-associated pneumonia
  - » surgical site
  - » with multidrug-resistant organisms
- Occupational exposures, such as:
  - » needlestick injuries
- Other healthcare-associated infections, such as:
  - » hospital-acquired pneumonia
- Outbreaks, such as:
  - » diarrhoeal illness, such as:
    - ○ norovirus
  - » highly transmissible viruses, such as:
    - ○ measles
  - » respiratory illness, such as:
    - ○ influenza
    - ○ respiratory syncytial virus (RSV)
    - ○ SARS-CoV-2

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

Synthesise

- » recognise the clinical presentation
- » identify relevant epidemiology, prevalence, pathophysiology, and clinical science
- » take a comprehensive clinical history
- » conduct an appropriate examination
- » establish a differential diagnosis
- » plan and arrange appropriate investigations
- » consider the impact of illness and disease on patients[20] and their quality of life when developing a management plan

Manage

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

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

LESS COMMON OR MORE COMPLEX PRESENTATIONS AND CONDITIONS Advanced Trainees will understand these presentations and conditions. Advanced Trainees will understand the resources that should be used to help manage patients with these presentations and conditions.	No less common or more complex presentations and conditions identified	**Consider other factors** » identify individual and social factors and the impact of these on diagnosis and management

EPIDEMIOLOGY, PATHOPHYSIOLOGY, AND CLINICAL SCIENCES

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

- Aetiology of common pathogens, such as:
  - » blood-borne viruses, such as:
    - hepatitis:
      - B
      - C
    - human immunodeficiency virus (HIV)
  - » extended-spectrum beta-lactamase (ESBL):
    - methicillin-resistant *Staphylococcus aureus* (MRSA)
    - vancomycin-resistant enterococci (VRE)
  - » multidrug-resistant organisms:
    - *Candida auris*
    - carbapenem-resistant Enterobacterales (CREs)
    - *Clostridioides difficile*
    - gram-negative infections:
      - drug-resistant Enterobacterales, such as:
        - » AmpC
        - » carbapenemase-producing (CPE)
      - multi-resistant *Acinetobacter baumannii* complex
      - multi-resistant *Pseudomonas aeruginosa*
  - » those of public health concern, such as:
    - *Legionella pneumophila*
    - *Listeria monocytogenes*
    - *Neisseria meningitidis*
- Aetiology of resistance patterns, generally and locally
- Clinical manifestations, frequency, and pathophysiology of common healthcare-acquired infections
- Colonisation
- Infection prevention consideration, such as:
  - » antimicrobial stewardship principles
  - » occupational exposure
  - » preventive measures for healthcare staff, and required immunisation
  - » standard and transmission-based precautions
  - » sterilisation and disinfection procedures
  - » waste management
- Modes of entry
- Molecular epidemiology techniques
- Outbreak investigation
- Reservoirs and modes of transmission

- Risk factors and pathogenesis for healthcare associated infections, such as:
  - » bloodstream
  - » diarrhoeal
  - » respiratory
  - » surgical site infection
  - » urinary tract
- Surveillance principles

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.

- Framework of outbreak preparedness, readiness, and response at a national level
- Local clinical governance and safety quality systems
- Local infection prevention guidelines
- National Safety and Quality Health Service Standards by the Australian Commission on Safety and Quality in Health Care, and the Ngā Paerewa Health and Disability Services Standard
- Screening of patients for novel or emerging pathogens

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.

- Antimicrobial stewardship, resistance, and prophylaxis, including surgical prophylaxis, and their impact on host biome
- Changes in host biome, susceptibility, and immunity when hospitalised
- Healthcare-associated infection control requirements in organisational structures, and the use of indicators for such
- Impact of nosocomial infections on patient health and outcomes
- Pharmacologic and non-pharmacologic strategies to prevent surgical site infections
- Role of surveillance and feedback reporting, the different surveillance systems, and their validation

Infection control policy development and implementation

- Action plan development
- Cost-benefit analysis
- Evidence base for policy decisions
- Guidelines, such as:
  - » contagion-specific guidelines, such as those for:
    - COVID
    - influenza:
      - avian, including H5N1
  - » high-consequence infectious diseases
  - » local, national, and international clinical standards and protocols
  - » Mpox
  - » suspected bioterrorism
- Outbreak preparedness and investigation

Management of multi-resistant organisms

- Attributable mortality and morbidity
- Host risk factors
- Local prevalence and incidence rates
- Prevention of development and transmission, including:
  - » contract tracing
  - » detection of colonisation
  - » principles of antimicrobial stewardship
  - » transmission-based precautions
- Relationship between colonisation, infection, and resistance mechanisms
- Typical sites of colonisation, including when and how to screen for multi-resistant organisms based on local guidelines

Principles and practice of infection prevention

- Antisepsis
- Aseptic technique
- Environmental control measures, such as:
  - » cleaning
  - » decontamination
  - » disinfection
  - » isolation
  - » sharps disposal
  - » sterilisation
- Hand hygiene
- Isolation and cohorting strategies
- Measures to control and prevent infection during hospital renovations and/or construction
- Minimisation of device use
- Personal protective equipment (PPE) categories for different scenarios, and appropriate donning and doffing
- Staff education, health, immunisation, occupational exposures, and training
- Surveillance and outbreak investigation
- Transmission-based precautions, such as:
  - » airborne
  - » contact
  - » droplet
  - » standard
- Ventilation and air-conditioning systems
- Waste management
- Water systems

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.

Global epidemiology of infections

- Consequences of common communicable infectious diseases for pregnant people
- High-consequence infectious diseases (HCID) and emerging and re-emerging infectious diseases, such as:
  - » Australian bat lyssavirus
  - » Hendra and Nipah viruses
  - » Japanese encephalitis virus (JEV)
  - » Mpox
  - » novel respiratory viruses, such as:
    - highly pathogenic avian influenza, including H5N1
  - » Rift Valley fever
  - » SARS-CoV-1 and SARS-CoV-2
  - » Toxigenic Corynebacterium diphtheriae
  - » viral haemorrhagic fevers
- Impact of climate change on epidemiology of infectious diseases

Principles of diseases outbreak detection and management

- Control
- Local state control guidelines
- Outbreak detection
- Public health laboratory and network laboratory case definition
- Reporting investigation and requirements
- Role of infectious diseases physicians as part of multidisciplinary teams, which may include:
  - » clinical microbiologists
  - » epidemiologists
  - » public health physicians

Principles of public health management of communicable infections

- Environmental controls
- Prophylaxis
- Quarantine
- Reporting
- Surveillance

Public health consequences of infections

- Features of important and common communicable infectious diseases, such as:
  - » clinical management
  - » clinical presentation
  - » contact tracing
  - » definition of contact
  - » disaster implications
  - » identification
  - » incidence, including worldwide distribution
  - » incubation periods
  - » isolation precautions
  - » mode of transmission
  - » period of communicability
  - » prophylaxis
  - » reservoir
  - » susceptibility, immunity, and preventative and control measures

	PCH	• Consequences of common communicable infectious diseases for neonates • Screening programs for congenital syphilis
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[21], families, and carers, and be able to explain procedural risk and obtain informed consent where applicable.		• Appropriate diagnostics required for diagnosis of notifiable infectious diseases of public health significance • Communicable Diseases Network Australia (CDNA) Series of National Guidelines (SoNGs) for public health units • Public Health Laboratory Network (PHLN) guidance on definitive and suggestive laboratory diagnostic criteria
IMPORTANT SPECIFIC ISSUES Advanced Trainees will identify important specialty-specific issues and the impact of these on diagnosis, management and outcomes.		• One Health approach • Resources used to keep up to date, and importance of research on informing policy on current disease outbreaks and new diseases and syndromes **Collaboration with public health services and communities** • Investigation of epidemics or outbreaks, such as measles • Clinical presentation, definition of contact, identification, incubation period, mode of transmission, period of communicability, and susceptibility for agents in bioterrorism, such as: » arenaviruses and filoviruses » Bacillus anthracis » Clostridium botulinum » Francisella tularensis » Variola major » Yersinia pestis • Principles of the notifiable diseases system, such as: » expectations of public health practitioners and clinicians » function of health protection and environmental health officers, and their relationship with key infection control personnel in the hospital and community » processes for reporting notifiable infectious diseases » role of immunisation in vaccine-preventable communicable diseases

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

- Security Sensitive Biological Agents (SSBA) Regulatory Scheme and associated legislations
- Steps in public health outbreak management plans, such as pandemic influenza and COVID

Measures to minimise disease burden and prevent transmission through advice, advocacy, and notification

- Health promotion and media communication of public health issues, including increasing public awareness of infectious diseases
- How to access information for less common communicable diseases and neglected tropical diseases
- Key aspects of state and national policies, including gaps and limitations, with respect to epidemic and pandemic preparedness and management, healthcare associated infections, and immunisation
- Key processes in public health surveillance
- Prevention of antimicrobial resistance
- Public health intervention planning, including resource allocation
- Use of artificial intelligence, genomic surveillance, and surveillance for vector competence for local transmission of diseases

Public health issues in high-risk populations

- Public health issues in northern and central Australia, Aboriginal and Torres Strait Islander peoples, Māori, and Pacific peoples, and other Indigenous populations:
  - » current public health programs relevant to infectious diseases
  - » differences in frequency of disease, such as rheumatic fever, health outcomes, and social determinants