

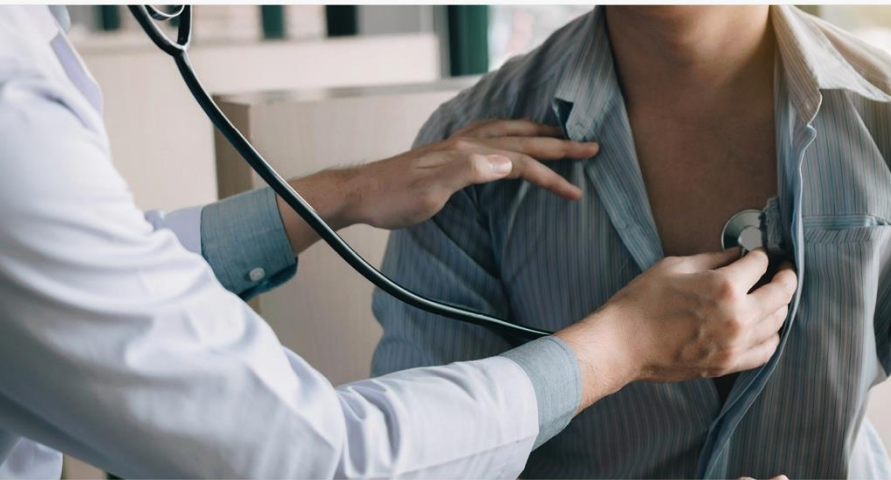
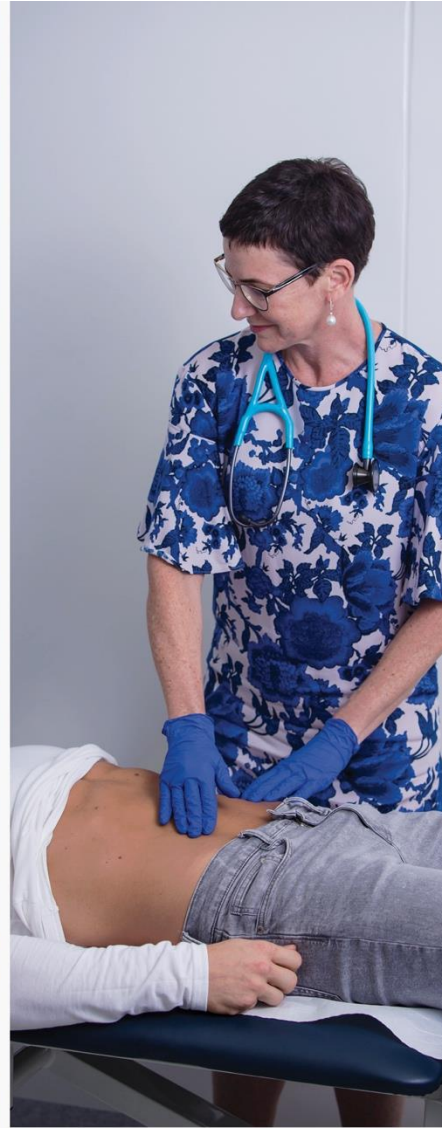


RACGP

*Royal Australian College
of General Practitioners
Rural Generalist Fellowship*

Additional Rural Skills Training (ARST)

Curriculum for
Adult Internal Medicine Training



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**Royal Australian College of General Practitioners Rural Generalist Fellowship
(RACGP RG Fellowship):
Additional Rural Skills Training (ARST) Curriculum for Adult Internal Medicine**

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We acknowledge the Traditional Custodians of the lands and seas on which we work and live, and pay our respects to Elders, past, present and future.

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List of acronyms and initialisms

Introduction

The Royal Australian College of General Practitioners Rural Generalist Fellowship (RACGP RG Fellowship) is a qualification awarded by the RACGP in addition to the vocational Fellowship (FRACGP). Completion of a minimum 12 months of Additional Rural Skills Training (ARST) in an accredited training post is an essential component of training towards the RG Fellowship. This additional training is designed to augment core general practice training by providing an opportunity for rural general practitioners (GPs) to develop additional skills and expertise in a particular area and enhance their capability to provide secondary-level care to their community.

This curriculum sets out the competencies that candidates are required to develop to complete ARST in Adult Internal Medicine. It also provides a framework for the teaching and learning of the critical knowledge, skills and attitudes that rural generalists require to effectively deliver appropriate inpatient and outpatient care for adult internal medicine conditions in rural and remote communities, where specialist support is often limited.

Objectives

Rural generalists with additional training in adult internal medicine make an important contribution to comprehensive care in rural and remote communities with reduced access to specialist services. Currently, adult internal medicine accounts for the majority of patients admitted to hospitals in Australia. There is an increasing prevalence of chronic medical disease in Australia, with rural and remote communities experiencing a higher prevalence of chronic disease when compared with their metropolitan counterparts. In rural and remote communities, the higher rate of chronic disease is worsened by reduced access to healthcare.

Rural generalists with additional skills in adult internal medicine can appropriately manage acute and elective admissions for common presentations in adult internal medicine, independently formulate inpatient and outpatient management plans, competently perform common and more advanced procedures, and comprehensively manage common adult internal medicine presentations.

By undertaking ARST in Adult Internal Medicine, candidates will extend their expertise in adult internal medicine and enhance their capability to provide secondary-level care to their community. A long-term outcome of this will be improved equity of access to skilled practitioners and quality care for rural Australians.

Prerequisites

ARST in Adult Internal Medicine can be undertaken any time after the Hospital Training Time component of FRACGP has been completed. To give candidates a rural general practice context to the learning, and provide a better understanding of where their additional skills will be practised, it is recommended (but not mandatory) that they have completed at least 12 months full-time equivalent (FTE) of community rural general practice terms before starting the ARST. However, the RACGP recommends that candidates work closely with their Training Organisation to plan the best training pathway for their individual circumstances.

Duration

This ARST in Adult Internal Medicine requires a minimum of 12 months (FTE) in an accredited training post, in accordance with the vocational standards and requirements published by the RACGP.

Context for the RACGP RG Fellowship ARST Curriculum for Adult Internal Medicine

Adult internal medicine is a very broad discipline with a wide range of sub-specialty areas. Candidates must spend time in a 'general medicine' specialty post and at least one sub-specialty post. A general medicine post will allow the candidate broad experience in adult internal medicine while a sub-specialty post will allow for a deeper understanding of a particular area. The following sub-specialty areas have been identified in this curriculum:

- a) Cardiovascular
- b) Endocrine
- c) Gastrointestinal
- d) Haematology/Oncology
- e) Infectious disease
- f) Neurology
- g) Renal/Urology
- h) Respiratory
- i) Rheumatology

Candidates may request approval from the RACGP Rural Censor to train in an adult internal medicine sub-specialty area that is not listed in this curriculum. The candidate will be required to outline specific knowledge, skills, procedures, learning outcomes and performance criteria that will be undertaken during their training. Approval must be granted before the training post commences.

ARST in Adult Internal Medicine may be undertaken in one or more training posts in a medical inpatient unit, an outpatient environment or a community facility with appropriate exposure to adult internal medicine. Hospital-based posts provide greater exposure to acute presentations, while outpatient and community facilities provide the candidate with greater experience in the ongoing management of adult internal medicine presentations. It is highly desirable for candidates to gain experience in both hospital and outpatient/community settings. However, when the training post is primarily community-based, the candidate should be acting as a specialist registrar consultant or similar and there should be at least two-session-equivalent exposures to acute adult internal medicine per week. These sessions may be, for example, outpatient clinics or hospital ward rounds.

Appropriate posts would provide access to:

- general medicine on call
- general medicine outpatients
- conducting ward rounds
- chronic disease management
- emergency admissions
- care/discharge planning.

Note: To ensure adequate exposure to acute adult internal medicine presentations, candidates should have access to working as a specialist medical registrar in an acute inpatient medical ward, or on call for medical emergencies.

A teaching post approved by the Royal Australasian College of Physicians (RACP) for basic/advanced physician training will generally be suitable but the candidate must ensure that the post has been approved by the Training Organisation for general practice registrars or the RACGP Rural Censor for practising GPs before commencement.

Where possible, training should take place in the region where the registrar intends to practise to enable an ongoing consultant–registrar relationship.

The emphasis of this ARST in Adult Internal Medicine is on the acquisition of relevant skills and experience in adult internal medicine. Candidates must be exposed to diverse presentations that will enable them to fulfil the curriculum requirements for their chosen sub-specialties. Candidates will engage in self-directed learning under the supervision of a rural GP supervisor/mentor with experience in adult internal medicine, a medical educator, and a Fellow of the RACP who is a general physician or sub-specialist who participates in a general medicine roster.

The rural GP supervisor/mentor is a source of advice on training in the broader context of rural general practice, as well as a professional role model and mentor. Their role is to:

- act as GP role model, mentor and support person
- observe the candidate's performance and provide regular feedback and assistance in general practice settings, where appropriate
- contribute to formative assessment of the candidate, where appropriate.

The medical educator provides a link back to the Training Organisation to inform the candidate about educational activities and overall training requirements. Their role is to:

- provide advice and assistance regarding training needs, learning activities and completion of training requirements
- assist in the development, implementation and evaluation of learning materials
- assist in access to learning opportunities for procedural skills and other abilities
- contribute to formative assessment of the candidate using clinical skills logbook to monitor progress.

The Fellow of the RACP, who is a general physician or sub-specialist who participates in a general medicine roster, provides the candidate with a source of clinical expertise, advice and educational support. Their role is to:

- provide supervision in the clinical setting
- facilitate access to clinical learning opportunities
- demonstrate clinical skills and procedures
- observe the candidate's performance and provide regular feedback and assistance
- conduct regular teaching sessions
- monitor candidate progress and contribute to formative assessments
- report on progress in completing assessment requirements.

A combination of teaching methods is used, taking into account the specific clinical context and learning environment. Teaching and supervision methods strongly emphasise the acquisition of knowledge and skills in clinical settings. Through demonstration, observation and interactive teaching methods, candidates are challenged to perform, reflect upon and assess their competence in applying the clinical knowledge and skills described in the curriculum.

Teaching methods may include:

- practice-based demonstration by supervisors
- practice-based observation and feedback on candidate performance
- group discussion, activities, case studies and presentations
- role-play or simulated situations illustrating challenging clinical scenarios
- online learning modules
- simulation of clinical presentations
- specific courses and workshops
- audio-visual presentations and web-based presentations
- research projects
- regular meetings with supervisors
- access to continuing professional development workshops
- presentation of educational sessions to other staff or community groups
- journal articles and web-based resources
- development of teaching skills through teaching of junior medical staff and medical students.

Candidates are expected to determine the depth and extent of education and training required in consultation with their supervisors and document this as part of their training plan.

Content of the RACGP RG Fellowship ARST Curriculum for Adult Internal Medicine

The following content list provides guidelines for the candidate and the supervisors regarding topics to be covered during training. This is a non-exhaustive list of desirable knowledge and skills to meet the adult internal medicine needs of rural communities. It is anticipated that this list may be adapted to address the particular learning goals of candidates and the particular context in which the training is conducted.

The content is organised under the following headings:

1. The management process
2. Common adult internal medicine presentations and their management
3. The management of conditions relevant to sub-specialty

In addition to the broader adult internal medicine topics, candidates are required to develop knowledge and skills related to their chosen sub-specialty:

- a) Cardiovascular
- b) Endocrine
- c) Gastrointestinal
- d) Haematology/Oncology
- e) Infectious disease
- f) Neurology
- g) Renal/Urology
- h) Respiratory
- i) Rheumatology

1. The management process

- Conducting an initial assessment:
 - eliciting a history and obtaining other relevant data
 - conducting an appropriate physical examination
 - formulating differential diagnosis
 - arranging and interpreting appropriate investigations using Choosing Wisely principles.
- Management planning:
 - deciding whether management should be local, local with consultation or involve referral and transfer
 - arranging for referral and transfer if appropriate
 - implementing local management or local management with consultation:
 - arranging and interpreting further investigations
 - undertaking procedures as appropriate
 - providing care following procedures
 - safe and appropriate pharmacotherapy
 - ongoing care planning tailored to patients' needs and conditions.
- Critical considerations in the management process, including:
 - the nature of the disease or presenting condition
 - the patient context
 - the impact of the disease/condition on the patient and their quality of life
 - potential complications of the disease/condition and its management, and preventive strategies that can be implemented
 - the availability of resources for local, emergency or definitive management of conditions
 - the availability and limitations of local resources for consultation, referral and transfer
 - coordinating care and rehabilitation when the patient returns from a tertiary centre (eg after coronary artery bypass grafting, stroke or major surgery).

2. Common adult internal medicine presentations and their management

- Differential diagnosis, appropriate investigations and evidence-based treatment/management approaches for common presentations including, but not limited to:
 - abdominal pain
 - breathlessness / shortness of breath
 - chest pain
 - chronic fatigue / lethargy
 - confusion
 - constipation
 - delirium
 - diarrhoea
 - fatigue
 - fever / pyrexia of unknown origins
 - functional decline
 - haematuria
 - haemoptysis
 - jaundice
 - oedema
 - pain and swelling
 - palpitations
 - seizure
 - syncope
 - vomiting
 - weight loss.
- Application of common diagnostic and therapeutic procedures including, but not limited to:
 - appropriate use of a wide range of drugs, including drugs used for thrombolytic therapy, inotropic therapy, anticoagulation, disease modifying anti-rheumatic drugs (DMARDs), insulin therapy, chemotherapy and advanced palliative care
 - arterial blood sampling and blood tests
 - ascitic tap
 - cardioversion
 - continuous positive airways pressure (CPAP) / bilevel positive airway pressure (BIPAP) / use of high-flow oxygen
 - echocardiography = within the limits of point of care u/s
 - electrocardiogram (ECG)
 - endoscopy, including colonoscopy
 - exercise testing
 - glucometers
 - fundoscopy
 - Holter monitoring
 - intercostal catheter thrombolytic therapy through a supportive virtual stroke service
 - lumbar puncture
 - medical imaging studies including X-ray, computed tomography (CT), magnetic resonance imaging (MRI) and ultrasound
 - nebulisation therapy
 - nebulisers, spacers and other inhalers
 - needle thoracentesis
 - orogastric and nasogastric tube insertion
 - oxygen concentrators
 - point-of-care ultrasound (POCUS)
 - psychiatric tests such as the mental state examination and tests of cognitive function
 - pericardiocentesis – POCUS
 - pleural tap
 - re-breathing mask
 - reduction tension pneumothorax
 - spirometry and peak flow measurement
 - supplemental oxygen
 - suprapubic catheterisation and urethral catheterisation on a male

- underwater drain
- urine microscopy.
- For common conditions, articulate the incidence, prevalence, clinical presentation, aetiology, pathogenesis and evidence-based treatment/management approaches, including, but not limited to:
 - autonomic dysfunction, including diabetes, erectile dysfunction, gastroparesis, neurogenic bladder, Parkinson disease and postural hypotension
 - cellulitis/pneumonia
 - chronic kidney disease (CKD) – preventing decline and complications
 - common cardiac syndromes – acute coronary syndrome, atrial fibrillation, heart failure
 - common geriatric syndromes – falls, cognitive decline, delirium, frailty
 - common psychiatric disorders in the context of comorbid conditions, including anxiety disorders and mood disorders
 - hypertension – acute and chronic
 - hypotension or shock, including anaphylactic, cardiogenic, hypovolaemic, neurogenic and septic
 - metabolic emergencies, including acidosis, alkalosis, hypo- and hyperglycaemia, hypo- and hyperkalaemia and hyponatraemia
 - obesity
 - ophthalmologic infections and ophthalmological manifestations of chronic and systemic diseases
 - overdose or toxic effects of illicit drug use, and substance use disorders
 - peripheral vascular disease
 - self-harm and suicidal behaviour
 - urinary tract infection, urosepsis or pyelonephritis
 - venous thromboembolism.

3. The management of conditions relevant to sub-specialty

- The incidence, prevalence, clinical presentation, aetiology, pathogenesis and evidence-based treatment/management approaches for specific conditions relevant to sub-specialty (see Appendix for list of conditions for each sub-specialty).
- The indications, contraindications and techniques for common diagnostic investigations, treatments and procedures relevant to sub-specialty (see Appendix for a list of diagnostic investigations, treatments and procedures for each sub-specialty).

Learning outcomes and performance criteria

The RACGP [Curriculum for Australian General Practice 2016](#) bases lifelong teaching and learning on the five domains of general practice. The domains represent the critical areas of knowledge, skills and attitudes necessary for competent, unsupervised general practice. They are relevant to every general practice patient consultation and form the foundation of the skills of rural GPs. Candidates undertake this ARST in Adult Internal Medicine in conjunction with the RACGP Curriculum for Australian General Practice 2016. Subsequently, this curriculum is designed to detail the additional knowledge and skills that GPs completing their ARST in Adult Internal Medicine are required to develop in order to provide comprehensive care in rural and remote communities.

The five domains are:

1. Communication and the patient–doctor relationship
2. Applied professional knowledge and skills
3. Population health and the context of general practice
4. Professional and ethical role
5. Organisational and legal dimensions

By the end of this ARST in Adult Internal Medicine, the candidate will have expanded upon the assumed level of knowledge of the vocational registrar in these areas.

Note: *Italicised* terms in the following tables are defined in the next section, titled ‘Range statements’.

1. Communication and the patient–doctor relationship

Learning outcomes	Performance criteria
1.1 Communicate clearly and empathically with patients, relatives and carers to understand patient needs and provide care in the context of adult internal medicine	<p>1.1.1 Effectively develop rapport with patients, relatives and carers to assist in gathering information and communicating treatment options</p> <p>1.1.2 Demonstrate a <i>holistic approach</i> to identifying issues of greatest importance to patients’ health and management</p> <p>1.1.3 Use effective cross-cultural communication when providing care to patients and families from diverse backgrounds</p> <p>1.1.4 Communicate clearly when explaining procedures to patients to obtain <i>informed consent</i></p> <p>1.1.5 Provide empathic advice and support to patients, their family and carers</p>
1.2 Manage potentially challenging or difficult situations and assist patients, relatives and carers to cope with, and manage the effects of, the patient’s condition and treatment options	<p>1.2.1 Sensitively respond to patients who are upset, embarrassed, vulnerable or in pain</p> <p>1.2.2 Recognise emotional stress symptoms in patients and their families/carers, and provide empathic and culturally appropriate support and follow-up</p> <p>1.2.3 Adapt communication to the patients’ and their families’/carers’ health literacy and socioeconomic context to provide education sufficient for the management of their illness/condition</p> <p>1.2.4 Be able to have difficult conversations with patients who have complex risk factors, where the diagnosis is difficult, or where results are sub-optimal OR where it is anticipated that life may end within 12 months – sensitively sharing the prognosis and</p>

facilitating decisions and advance care planning

- | | |
|---|---|
| 1.3 Effectively communicate with all members of the healthcare team | 1.3.1 Communicate effectively with tertiary centre specialists in the formulation and implementation of the management plan |
| | 1.3.2 Communicate effectively with the <i>multidisciplinary team</i> in the provision of care |
-

2. Applied professional knowledge and skills

Learning outcomes	Performance criteria
2.1 Conduct a physical exam and synthesise findings to develop a differential diagnosis and management plan in the context of adult internal medicine	2.1.1 Obtain a focused and accurate history efficiently using both patient information and other strategies as needed 2.1.2 Perform a thorough and accurate physical examination that is tailored to the patient's history and presenting issues 2.1.3 Use <i>specific diagnostic tools</i> as appropriate 2.1.4 Interpret and integrate the history and physical examination to formulate a comprehensive and rational problem list and differential diagnosis, and modify the working diagnosis and treatment plan in response to investigation results 2.1.5 Develop an evidence-based management plan that considers the impact of patient factors and comorbidities as well as the patient's quality of life 2.1.6 Prioritise the urgency of individual investigations and treatments, and use diagnostic reasoning to minimise the number of investigations used and possible harm from false positives 2.1.7 Competently perform <i>required procedures</i> and prescribe therapies tailored to the patient's needs and conditions 2.1.8 Recognise potential complications of the disease/condition and its management, and initiate preventive strategies
2.2 Ensure delivery of patient-centred care	2.2.1 Identify services that best meet the needs of the patient 2.2.2 Work effectively as part of a multidisciplinary team to provide services that are in the best interests of the patient and within individual limitations 2.2.3 Establish and use a comprehensive professional and emergency referral network 2.2.4 Ensure rehabilitation facilities (hospital or in the home) are well supervised and maintained to enable ongoing care closer to home for patients convalescing from severe illnesses or surgery
2.3 Recognise and manage critically ill patients	2.3.1 Provide a <i>problem-solving approach</i> to the appropriate early management of critically ill patients 2.3.2 Take actions and provide advice appropriate to the situation and team skill mix 2.3.3 Arrange and/or perform emergency patient transport or evacuation when required

3. Population health and the context of general practice

Learning outcomes	Performance criteria
3.1 Address health risks to individuals and the rural community	<p>3.1.1 Identify trends and patterns in presentations in the context of the community</p> <p>3.1.2 Apply a population health approach to planning and developing processes to address identified trends and patterns</p> <p>3.1.3 Consider the differing profile of disease and health risks among <i>culturally diverse groups</i> and develop a flexible approach to health management for such patients</p> <p>3.1.4 Use relevant protocols and guidelines and, where necessary, participate in the development of these guidelines for population health issues in the community</p> <p>3.1.5 Appropriately implement health promotion and brief intervention strategies during patient interactions</p>
3.2 Effectively use the available human and physical resources in the management of population health issues in rural communities	<p>3.2.1 Identify, and use, the extended role of other healthcare professionals in the rural community</p> <p>3.2.2 Identify and document the scope of adult internal medicine services that can be safely provided in the community</p> <p>3.2.3 Identify, and where needed, develop, local processes and policies to ensure efficient and effective use of limited health resources</p>

4. Professional and ethical role

Learning outcomes	Performance criteria
4.1 Deliver professional and ethical care in the context of adult internal medicine	<p>4.1.1 Take appropriate steps to ensure safety, privacy and confidentiality in patient care</p> <p>4.1.2 Work within <i>relevant professional and ethical guidelines</i> while effectively managing the particular needs and challenges related to practising adult internal medicine in small communities</p> <p>4.1.3 Balance the caseload and demands of working in a rural practice with social and personal responsibilities</p>
4.2 Facilitate collaboration and coordinated care	<p>4.2.1 Demonstrate a commitment to teamwork, collaboration and continuity of care</p> <p>4.2.2 Support the supervision, training and development of junior medical staff and the wider care team</p> <p>4.2.3 Establish professional networks and use available rural resources and referral agencies</p>
4.3 Demonstrate a commitment to continuing self-directed learning and professional development, sufficient to provide quality medical care	<p>4.3.1 Identify own strengths and limitations as a GP with additional skills in adult internal medicine</p> <p>4.3.2 Identify, and take appropriate steps to mitigate, the risks for a GP with additional skills working in professional and/or geographical isolation</p>

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- 4.3.3 Use available resources and referral agencies, professional support networks and organisations to practise self-care and improve self-reliance
- 4.3.4 Identify professional development needs and opportunities, and participate in professional development activities relevant to adult internal medicine
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5. Organisational and legal dimensions

Learning outcomes	Performance criteria
<p>5.1 Work within organisational frameworks, and apply relevant jurisdictional requirements and best practice guidelines</p>	<p>5.1.1 Write legally appropriate and medically effective <i>patient records</i>.</p> <p>5.1.2 Complete <i>documentation</i> and required reports according to jurisdictional, legal and legislative requirements</p> <p>5.1.3 Identify, and abide by, legal responsibilities regarding reporting of notifiable disease, birth, death and autopsy</p> <p>5.1.4 Identify, and abide by, organisational and state/territory-based disease control arrangements for infectious disease outbreaks</p> <p>5.1.5 Work within relevant national and state legislation when providing care (eg obtaining informed consent for procedures, completing appropriate documentation relevant to the patient and context, and abiding by legislative requirements)</p>
<p>5.2 Follow effective procedures for the safe and timely provision of care with consideration of local issues that impact upon decision making for patient management</p>	<p>5.2.1 Consider the availability of local and transfer resources in making decisions about whether to provide care/management locally or transfer to another facility</p> <p>5.2.2 Refer and arrange local rural community transport and safe evacuation processes as required</p> <p>5.2.3 Appropriately prioritise patient management according to individual patient needs, time and other resources available</p>

Range statements

The following statements and definitions are offered to improve the understanding of key terms used throughout the learning outcomes and performance criteria. These terms are not definitive and need to be considered in local contexts. They are grouped according to the five domains of general practice.

Communication skills and the patient–doctor relationship

Holistic approach – Refers to the practice of looking at the health of the whole person, not just the illness itself. The holistic concept in medical practice upholds that all aspects of people’s needs, including psychological, physical and social, should be considered and seen as a whole.

Informed consent – There are many definitions related to informed consent. While these definitions can vary between jurisdictions, the central requirement is that the consent process has been undertaken, recognised and documented. The [RACGP Standards for General Practices](#) (5th edition) state that patients require sufficient information about the purpose, importance, benefits and risks associated with proposed investigations, referrals or treatments in order to enable them to make informed decisions about their health.¹

Multidisciplinary team – This may include GPs, adult internal medicine specialists, surgeons, nurses and allied health professionals.

Applied professional knowledge and skills

Specific diagnostic tools – The tools should be relevant to the patient’s presentation. See Appendix for a full list of diagnostic tools.

Required procedures – This refers to evidence-based procedures relevant to the management of the patient’s condition. See Appendix and the ARST in Adult Internal Medicine Logbook for a full list of required procedures.

Problem-solving approach – The initial assessment and management of seriously injured or ill patients is a challenging task and requires a rapid and systematic approach. A problem-solving approach is a reliable method for assessing and initially managing the patient and requires an organised approach for evaluation and management. The emphasis of trauma care is on the critical ‘first hour’ of care, focusing on initial assessment, lifesaving intervention, re-evaluation, stabilisation and, when needed, transfer to more appropriate or specialised facilities.²

Population health and the context of general practice

Culturally diverse groups – This may refer to Aboriginal and Torres Strait Islander peoples and other cultural groups.

Professional and ethical role

Relevant professional and ethical guidelines – This refers to legal, ethical and professional guidelines.

Organisational and legal dimensions

Patient records – Patient health records must contain sufficient information to identify the patient and to document the reason(s) for a visit, relevant examination, assessment, management, progress and outcomes. A complete, highly structured, problem-oriented health record will be invaluable to any medical practitioner.

Documentation – There should be a comprehensive, factual and sequential record of a patient’s condition and the treatment and support offered and provided. A complete medical record is essential for reliable continuity of medical care. This should include a regularly updated list of current medications, alerts to known adverse drug events and rationale for alterations to medications.

Assessment

Satisfactory completion of the ARST in Adult Internal Medicine will be assessed by a combination of workplace-based assessment (WBA) approaches during the candidate's 12-month (FTE) placement in an accredited training post.

WBA is a recognised approach to assessing medical practitioners in training in the actual workplace, and WBA assists with training, as well as assessment. To achieve this requirement, WBAs assess a diverse range of attributes, including clinical competencies, domains and skills. Further details about WBA and how it is applied in ARST assessment can be found in the RACGP RG Fellowship Assessment Framework.

The following WBA assessment tools will be used to assess the candidate's competency in the ARST in Adult Internal Medicine:

- logbook
- three random case note analysis sessions reviewing a minimum of three cases per session
- two supervisor reports, one completed at six months and one at completion of 12 months of training (FTE)
- two direct observation of procedural skills (DOPS) sessions, with three cases per session
- two case-based discussion sessions (candidate submits four cases and is assessed on two each session).

Each task is described in more detail below.

Logbook

Candidates are required to maintain a procedural skills logbook throughout their training. A component of maintaining this logbook involves reflecting on self-identified learning needs. The range of procedural skills that are logged, and any proposed professional development in this area, should take into consideration the community requirements.

This logbook will need to be regularly reviewed by the supervisor and reviewed by the medical educator at each medical educator meeting.

Random case notes analysis

Candidates are required to undertake three random case note analysis sessions in which a minimum of three cases are reviewed per session. Using patient notes that are randomly selected, the assessor will review the quality of case notes as well as explore the candidate's clinical decision making, management and therapeutic reasoning.

The first of these random case notes analysis sessions should be completed by the supervisor in months two to four (FTE) of the training. The second session should be completed by an alternative assessor in months four to six (FTE). The third session should be completed in months seven to eight (FTE) by the supervisor.

Supervisor reports

The candidate and their supervisor will meet half-way through the training (eg at six months for full-time training) and at the end of the training period (eg at 12 months for full-time training) to complete a supervisor report.

These reports should provide a global assessment of performance against the outcomes outlined in this curriculum. The candidate and supervisor will meet to discuss the candidate's performance, identify areas for further learning and development, and ensure that the candidate is progressing adequately in their training. Progression, or lack thereof, should be documented and discussed, with the intent of formulating a plan to remediate any gaps identified either through additional learning, or experiences, or a combination of both.

Direct observation of procedural skills (DOPS)

Candidates are required to undertake two direct observation of procedural skills sessions in which a minimum of three cases are observed per session. The assessor will observe the candidate conducting a procedure on real patients and provide feedback about their performance.

The first DOPS session should be completed by the supervisor in months two to four (FTE) of the training. The second session should be completed by an alternative assessor in months seven to eight (FTE).

Case-based discussions

Candidates are required to undertake two case-based discussion sessions. The candidate will be required to submit four cases and will be assessed on two cases for each session. The assessor will explore the candidate's case management and clinical reasoning alongside their medical knowledge.

The first of these case-based discussion sessions should be completed by an independent assessor in months four to six (FTE) of the training. The second session should be completed by an independent assessor in months nine to 11 (FTE).

Recommended learning resources

- Australian Medicines Handbook. Available at <https://amhonline.amh.net.au/>
- Australian Technical Advisory Group on Immunisation. Australian immunisation handbook. Canberra: Australian Government Department of Health, 2018. Available at immunisationhandbook.health.gov.au [Accessed 7 August 2021].
- Bickley LS, Bates B. Bates' guide to physical examination and history taking. 12th edn. Philadelphia, PA: Lippincott Williams & Wilkins, 2016.
- Central Australian Rural Practitioners Association. CARPA standard treatment manual. 7th edition. Alice Springs, NT: Centre for Remote Health, 2017.
- Cochrane Library. Available at <http://www.cochranelibrary.com/>
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Appendix: Minimum clinical knowledge and skills required for each of the sub-specialty areas for completing ARST in Adult Internal Medicine

The following tables detail the minimum knowledge and skills required for each of the sub-specialty areas of this curriculum. These requirements are reflected in the associated ARST in Adult Internal Medicine Logbook.

Cardiovascular

- Incidence, prevalence, clinical presentation, aetiology, pathogenesis and evidence-based treatment/management approaches for specific conditions, including:
 - aortopathy – thoracic and abdominal aortic aneurysm, dissection, enlargement
 - cardiac arrhythmias, including supraventricular arrhythmias, ventricular arrhythmias and atrial fibrillation
 - cardiomyopathy
 - cardiovascular manifestations of systemic and chronic disease
 - congenital heart disease
 - heart failure – acute and chronic
 - acute pulmonary oedema
 - chronic congestive heart failure
 - hypertension, including pulmonary and systemic (primary and secondary)
 - ischaemic heart disease
 - acute coronary syndromes, including non-ST elevation myocardial infarction (NSTEMI) and ST-elevation myocardial infarction (STEMI)
 - stable angina
 - lipoprotein disorders
 - pericardial disease – acute pericarditis, manifestation of systemic diseases
 - peripheral vascular disease – arterial and venous ulcers
 - prolonged QT syndromes – congenital and acquired
 - thromboembolic disease
 - valvular heart disease, including rheumatic heart disease, infective endocarditis, ventricular septal defect, atrial septal defect
 - Indications, contraindications and techniques for common diagnostic investigations, treatments and procedures, including:
 - administration of fibrinolytic therapy (eg tPA, reteplase)
 - angiograms
 - ankle-brachial index
 - arterial Doppler
 - blood tests, including troponin and B-type natriuretic peptide
 - cardiac MRI
 - cardioversion
 - coronary angiography
 - CT coronary angiography and coronary calcium score
 - Duplex ultrasound scans
 - echocardiography, including stress echocardiography
 - electrocardiography
 - exercise stress testing
 - Holter monitoring
 - myocardial perfusion scans
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Endocrine

- Incidence, prevalence, clinical presentation, aetiology, pathogenesis and evidence-based treatment/management approaches for specific conditions, including:
 - acute metabolic derangements, including adrenal insufficiency, diabetic ketoacidosis, electrolyte disorders, hyperglycaemic hyperosmolar state, hypertensive crisis, hypo- and hypercalcaemia, hypo- and hypernatraemia, hypoglycaemia, pituitary apoplex, and thyroid storm
 - Addison's disease
 - adrenal disorders
 - Cushing's syndrome
 - diabetes mellitus and its complications (type 1 and type 2)
 - electrolyte disturbance
 - endocrine causes of hypertension
 - endocrine disorders in pregnancy, including gestational diabetes
 - glucocorticoid therapy complications
 - obesity and metabolic syndrome
 - osteoporosis and osteopenia
 - Paget's disease of bone
 - parathyroid disease
 - polycystic ovary syndrome
 - thyroid disease, including hypo- and hyperthyroidism, and thyroid nodules
 - vitamin D deficiency
 - in consultation with endocrinologists, support the management of other pituitary disorders, and sex hormone therapy
 - Indications, contraindications and techniques for common diagnostic investigations, treatments and procedures, including:
 - anthropometric assessment
 - antibody testing for autoimmune endocrine disease, including diabetes mellitus type 1 and thyroid disease
 - basic endocrine testing, including diagnosis of diabetes, thyroid function testing, cortisol and synacthen tests
 - diabetes-related investigations, including acid–base investigations, albumin-to-creatinine ratio test, C-peptide test and HbA1c
 - diabetes therapeutics
 - diagnostic tests for bone and mineral metabolism disorders (eg calcium / phosphate / parathyroid hormone / vitamin D, bone densitometry)
 - endocrine dynamic function tests (eg pituitary function testing)
 - endocrine tissue biopsy
 - endocrine tumour-related tests and imaging (eg carcinoid tumour, pheochromocytoma)
 - fluid and electrolyte balance investigations
 - gastrointestinal hormone levels
 - genetic counselling/referral
 - imaging of endocrine organs, including CT, MRI and ultrasound
 - insulin regimens – intravenous / acute treatment
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Gastrointestinal

- Incidence, prevalence, clinical presentation, aetiology, pathogenesis and evidence-based treatment/management approaches for specific conditions, including:
 - appendicitis
 - Barrett's oesophagus
 - biliary obstruction
 - coeliac disease
 - diverticulosis/diverticulitis
 - gastrointestinal emergencies, including acute gastrointestinal haemorrhage, liver failure, hepatic encephalopathy, acute colitis
 - gastrointestinal malignancy – colonic, gastric, biliary, pancreatic, hepatic
 - haemochromatosis
 - hepatobiliary disease, including acute and chronic hepatitis, hepatitis C, alcoholic liver disease, non-alcoholic steatohepatitis, chronic liver disease, gall bladder disorders
 - inflammatory bowel disease
 - iron deficiency and iron overload
 - irritable bowel syndrome
 - malabsorption
 - pancreatitis – acute, chronic and complications
 - upper gastrointestinal conditions – gastro-oesophageal reflux disease, peptic ulcer disease, GI bleed
 - Indications, contraindications and techniques for common diagnostic investigations, treatments and procedures, including:
 - abdominal imaging, including CT, MRI, magnetic resonance cholangiopancreatography (MRCP), ultrasound and X-ray
 - bowel cancer screening
 - endoscopic retrograde cholangiopancreatography (ERCP)
 - haemochromatosis diagnostic tests
 - investigation of oesophageal disorders, including 24-hour pH monitoring, oesophageal manometry, nuclear medicine transit study and barium swallow
 - laboratory tests, such as coeliac serology, culture and toxin testing, faecal microscopy, genetic testing, helicobacter testing, liver function test (LFT), liver cancer screen (alpha-fetoprotein, ultrasound, CT, MRI), malabsorption tests and viral serology
 - liver biopsy
 - MRI
 - non-invasive methods of assessing liver fibrosis, such as transient elastography (Fibroscan)
 - sigmoidoscopy
 - upper and lower gastrointestinal endoscopy
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Haematology/Oncology

- Incidence, prevalence, clinical presentation, aetiology, pathogenesis and evidence-based treatment/management approaches for specific conditions, including:
 - amyloidosis
 - aplastic anaemia / bone marrow failure
 - bleeding disorders, such as haemophilia and von Willebrand disease
 - bony lytic lesions
 - complications from blood transfusion
 - complications of immunosuppression including febrile neutropenia
 - disorders of coagulation or thrombosis, including disseminated intravascular coagulopathy, thrombophilia, use of anticoagulants and antiplatelet agents, use of antifibrinolytic agents, and venous thromboembolic events (eg deep vein thrombosis and pulmonary embolism and complications)
 - drug toxicology and toxinology with haematologic effects (eg snake bite envenomation)
 - graft versus host disease
 - haemolytic disorders
 - haematological emergencies, including febrile neutropenia, hypercalcaemia of malignancy, spinal cord compression and tumour lysis syndrome
 - haematological malignancies, including Hodgkin lymphoma, non-Hodgkin lymphoma, leukaemia (acute and chronic), myelodysplasia, myeloproliferative disease, and plasma cell dyscrasias and multiple myeloma
 - increase in cell counts, such as leucocytosis, polycythaemia and thrombocytosis
 - lymphadenopathy
 - reduction in cell counts, such as anaemia, neutropenia and thrombocytopenia, pancytopenia
 - Indications, contraindications and techniques for common diagnostic investigations, treatments and procedures, including:
 - basic coagulation tests, such as activated partial thromboplastin time (aPTT), D-dimer, fibrinogen levels, international normalised ratio (INR), and prothrombin time (PT), coagulation profile
 - blood group tests
 - blood transfusion
 - bone marrow aspirate and trephine
 - CT scans in the diagnosis of lymphadenopathy or hepatosplenomegaly
 - cytogenetic and molecular studies
 - full blood count and blood film
 - haematinic screen – iron studies, serum B12 and folate levels
 - lymph node biopsy
 - management of detoxification/envenomation
 - palliative care in rural areas
 - peripheral blood and bone marrow immunophenotyping (know indications for flow cytometry, and the basic immunophenotypes of haematological cancers)
 - positron emission tomography (PET) scans (indications for)
 - principles of chemotherapy and side effects and management
 - serum or urine electrophoresis, immunofixation and free light chain assays
 - skeletal survey and other imaging modalities, particularly in relation to myeloma diagnosis (know indications only)
 - tests available for patients on direct oral anticoagulants (DOACs), including anti-Xa assays and dilute thrombin time
 - tests of haemolysis, including bilirubin, direct antiglobulin test, haptoglobin, lactate dehydrogenase (LDH) and reticulocyte count
 - thrombophilia screens
 - use of granulocyte colony-stimulating factor (GCSF)
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Infectious disease

- Incidence, prevalence, clinical presentation, aetiology, pathogenesis and evidence-based treatment/management approaches for specific conditions, including:
 - bacteraemia
 - bacterial infections, including meningococcal disease, melioidosis and rheumatic fever, infective endocarditis, tuberculosis
 - blood-borne viruses – hepatitis B and C, HIV
 - COVID 19 – pandemic management
 - infections categorised by anatomical location:
 - common skin infections, including cellulitis (and other streptococcal and staphylococcal skin manifestations), fungal infections and parasitic infections (eg head lice and scabies)
 - gastroenteritis including *Clostridium difficile*
 - lower respiratory tract infections, including pneumonia
 - meningitis and encephalitis
 - necrotising fasciitis
 - ophthalmological infections, including blepharitis, conjunctivitis, and orbital / periorbital cellulitis
 - osteomyelitis
 - septic arthritis
 - upper respiratory tract infections, including otitis media and tonsillitis
 - urinary tract infections
 - infections related to immunosuppression – febrile neutropenia
 - line and prosthetic infections
 - parasites – worms (round worms, hook worms, fluke worms and pin worms), mites (scabies), lice (head and body lice), protozoa (malaria and giardiasis)
 - septicaemia and septic shock
 - sexually transmitted infections – chlamydia, gonorrhoea, syphilis, genital herpes, genital warts, trichomoniasis
 - viral infections, such as influenza, Ross River fever, measles, mumps, varicella-zoster, Epstein-Barr virus (EBV), dengue, rubella and herpes
 - zoonoses, such as Q fever, leptospirosis, brucellosis
 - Indications, contraindications and techniques for common diagnostic investigations, treatments and procedures, including:
 - basic imaging, including chest X-ray, CT of the head, CT of the abdomen and pelvis, MRI, nuclear scans, ultrasound scan (including echocardiography for the evaluation of endocarditis), and X-ray of bone and joints
 - common vaccine administration
 - faecal parasite detection
 - investigations for the common sexually transmitted infections (STIs), including chlamydia, gonorrhoea, herpes, HIV, syphilis and trichomoniasis, including culture, nucleic acid amplification tests (NAAT) and serology
 - laboratory tests, including full blood count (FBC), blood film, inflammatory markers, microbiology, serology and virology, *C. difficile* toxin test
 - lumbar puncture
 - malaria detection
 - microbiology and culture of blood, broncho-alveolar lavage, cerebrospinal fluid (CSF), joint aspirate (synovial fluid), peritoneal fluid, pus, sputum, faeces, and urine
 - *Mycobacterium tuberculosis* detection
 - respiratory and gastrointestinal organism polymerase chain reactions (PCR)
 - serologic testing for cytomegalovirus (CMV), EBV, hepatitis viral infection, HIV and syphilis
 - skin biopsy
 - STI control and follow-up testing
 - viral load assessment for CMV, hepatitis viruses and HIV
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Neurology

- Incidence, prevalence, clinical presentation, aetiology, pathogenesis and evidence-based treatment/management approaches for specific conditions, including:
 - autoimmune encephalitis should be independently mentioned
 - cerebellar disorders
 - cerebral neoplasia
 - central nervous system (CNS) infection – meningitis and encephalitis
 - conditions with ophthalmological manifestations, including Horner syndrome, nystagmus, optic neuritis and papilloedema
 - cranial nerve lesions, including trigeminal neuralgia, Bell palsy
 - demyelinating disorders:
 - Guillain-Barré syndrome and chronic inflammatory demyelinating polyneuropathy
 - multiple sclerosis
 - epilepsy
 - gait disorders
 - migraine and common headache disorders
 - mononeuropathies (eg carpal tunnel syndrome, radial nerve palsy, ulnar nerve palsy, common peroneal nerve dysfunction, Bell palsy)
 - neurodegenerative disorders:
 - dementia syndromes – Alzheimer’s disease, prion disease
 - motor neurone disease
 - Parkinson’s disease
 - others – corticobasal degeneration, multiple systems atrophy and progressive supranuclear palsy
 - neurological manifestations of systemic and chronic disease (eg paraneoplastic syndromes)
 - post-concussion syndrome
 - peripheral neuropathy (acquired and hereditary, mono- and polyneuropathy) (eg diabetic neuropathies, Charcot-Marie-Tooth syndrome)
 - raised intracranial pressure – space occupying lesions, benign intracranial hypertension
 - spinal cord and nerve root compression
 - stroke – haemorrhagic and ischaemic, and transient ischaemic attack
 - Indications, contraindications and techniques for common diagnostic investigations, treatments and procedures, including:
 - audiometry
 - autonomic function testing
 - carotid ultrasound
 - cognitive or brain functionality assessment
 - CT and MRI brain imaging, including CT angiography and CT perfusion
 - dementia screening
 - electroencephalogram (EEG)
 - electromyography (EMG) and nerve conduction studies (NCS)
 - fundoscopy
 - lumbar puncture and CSF analysis
 - neuroimmunology testing (autoimmune encephalitis – large number of antibodies – consult with specialist centre)
 - neurophysiological studies, including EEG, EMG and NCS
 - vision testing, including visual acuity and colour vision testing, perimetry
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Renal/Urology

- Incidence, prevalence, clinical presentation, aetiology, pathogenesis and evidence-based treatment/management approaches for specific conditions, including:
 - acid–base imbalance
 - acute and chronic glomerulonephritis, including nephritic, nephrotic syndromes and rapidly progressive glomerulonephritis
 - acute and chronic renal failure
 - acute and recurrent urinary tract infections including pyelonephritis, cystitis, prostatitis, urethritis, urosepsis
 - acute kidney injury, including acute tubular necrosis
 - benign prostatic disease
 - CKD
 - complications of renal replacement therapy
 - diabetic nephropathy
 - drug-related nephrotoxicity
 - electrolyte abnormalities, including hypo- and hypercalcaemia, hypo- and hyperkalaemia, and hypo- and hypernatraemia
 - end-stage renal failure, including delaying progression of CKD, initiating chronic dialysis, and modes of dialysis, haemodialysis and peritoneal dialysis
 - polycystic kidney disease
 - tubulo-interstitial kidney disease
 - urinary calculus disease and obstructive uropathy
 - vascular disorders – renovascular disease, renal vasculitis (microscopic polyarteritis, anti-neutrophil cytoplasmic antibody (ANCA)-related vasculitides, Henoch-Schönlein purpura, anti-GBM disease)
 - Indications, contraindications and techniques for common diagnostic investigations, treatments and procedures, including:
 - imaging, including functional renal scans, renal angiogram, renal tract ultrasound and urograms
 - laboratory tests, including arterial blood gases, FBC, renal function, electrolytes and urine microscopy culture and sensitivities
 - peritoneal dialysis and haemodialysis management
 - renal biopsy
 - suprapubic and urethral catheter
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Respiratory

- Incidence, prevalence, clinical presentation, aetiology, pathogenesis and evidence-based treatment/management approaches for specific conditions, including:
 - asthma
 - chronic obstructive pulmonary disease
 - hypersensitivity pneumonitis, such as farmer's lung and bird fancier's lung
 - interstitial lung disease (ILD), such as idiopathic pulmonary fibrosis, granulomatous ILD (sarcoidosis, vasculitides), infections (tuberculosis), connective tissue disorders, radiation pneumonitis
 - neoplasia – primary malignancies of the lung and pleura, other lung malignancies (neuroendocrine, salivary gland-type, mesothelioma)
 - occupational lung disease (eg pneumoconiosis, asbestosis, silicosis)
 - pleural effusion
 - pulmonary embolism
 - pulmonary vasculitides – granulomatosis with polyangiitis, eosinophilic granulomatosis with polyangiitis, microscopic polyangiitis
 - pneumothorax
 - respiratory failure (acute and chronic)
 - respiratory infections including acute and chronic bronchitis, pneumonia, bronchiectasis, tuberculosis, cystic fibrosis and psittacosis
 - sleep-related disorders, including sleep apnoea and other sleep-disordered breathing
 - Indications, contraindications and techniques for common diagnostic investigations, treatments and procedures, including:
 - anti-coagulation therapy
 - antibiotic choices
 - arterial blood gases
 - basic pulmonary function tests, such as diffusing capacity for carbon monoxide (DLCO), flow-volume loops, lung volumes and spirometry
 - bronchoscopy
 - cardiopulmonary exercise tests
 - diagnostic sleep studies and CPAP therapy for obstructive sleep apnoea
 - endobronchial ultrasound (EBUS) procedures
 - high-flow intranasal oxygen devices
 - imaging, including chest CT, chest ultrasound, chest X-ray, CT pulmonary angiography, PET scan and V/Q scan
 - intubation and ventilation
 - intercostal catheter insertion
 - Mantoux – administration and reading
 - non-invasive ventilation (BiPAP, CPAP)
 - pleural tap / aspiration / biopsy
 - pulse oximetry
 - six-minute walk test
 - tissue biopsy, including biopsies of pleura, lung parenchyma and lymph nodes
 - thoracentesis, with or without pleural ultrasound
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Rheumatology

- Incidence, prevalence, clinical presentation, aetiology, pathogenesis and evidence-based treatment/management approaches for specific conditions, including:
 - arthritis, including
 - crystal-associated (eg gout and pseudogout)
 - inflammatory – rheumatoid, seronegative spondyloarthropathies (ankylosing spondylitis, enteropathic arthritis, psoriatic arthritis and reactive arthritis)
 - osteoarthritis (generalised and regional)
 - septic
 - connective tissue disorders, including
 - myositis and dermatomyositis
 - Sjögren's syndrome
 - systemic lupus erythematosus
 - systemic sclerosis (limited and diffuse)
 - vasculitides
 - fibromyalgia
 - insufficiency fractures
 - polymyalgia rheumatica
 - rheumatological emergencies, including acute mono/oligo arthritis, acute polyarthritis and systemic vasculitis
 - Indications, contraindications and techniques for common diagnostic investigations, treatments and procedures, including:
 - fine needle biopsy
 - joint aspiration/injection
 - laboratory tests including ANCA, angiotensin converting enzyme (ACE), anti-beta-2 glycoprotein antibody, anti-cardiolipin antibody (ACA), anti-cyclic citrullinated peptide antibody (anti-CCP), anti-double stranded DNA (anti-dsDNA), antinuclear antibody (ANA), anti-synthetase antibody C3 and C4, C-reactive protein, erythrocyte sedimentation rate (ESR), extractable nuclear antigen (ENA), FBC, immunoglobulin IgG4, LFTs, lupus anticoagulant, rheumatoid factor, urate, urea electrolyte and creatinine (UEC), and viral/bacterial serology
 - muscle biopsy
 - musculoskeletal radiology tests, including CT, bone densitometry, dual energy CT scans, MRI and nuclear medicine scans
 - skin biopsy
 - synovial fluid analysis
 - ultrasound – soft tissue, cranial arteries
 - X-ray, including hands, hips, knee joints, shoulders, spine and sacroiliac joints
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List of acronyms and initialisms

ACA	anti-cardiolipin antibody
ACE	angiotensin converting enzyme
ANCA	anti-neutrophil cytoplasmic antibody
anti-CCP	anti-cyclic citrullinated peptide antibody
aPTT	activated partial thromboplastin time
ARST	Additional Rural Skills Training
BIPAP	bilevel positive airway pressure
CKD	chronic kidney disease
CMV	cytomegalovirus
CNS	central nervous system
CPAP	continuous positive airways pressure
CSF	cerebrospinal fluid
CT	computed tomography
DOACs	direct oral anticoagulants
EBUS	endobronchial ultrasound
EBV	Epstein-Barr virus
EEG	electroencephalogram
EMG	electromyography
ENA	extractable nuclear antigen
ERCP	endoscopic retrograde cholangiopancreatography
ESR	erythrocyte sedimentation rate
RG	Rural Generalist
FBC	full blood count
FRACGP	Fellowship of the Royal Australian College of General Practitioners
FTE	full-time equivalent
GCSF	granulocyte colony-stimulating factor
GP	general practitioner
ILD	interstitial lung disease
INR	international normalised ratio
LDH	lactate dehydrogenase
LFT	liver function test
MRI	magnetic resonance imaging
MRCP	magnetic resonance cholangiopancreatography
NAAT	nucleic acid amplification tests
NCS	nerve conduction studies
NSTEMI	non-ST-elevation myocardial infarction
PCR	polymerase chain reaction
PET	positron emission tomography
POCUS	point-of-care ultrasound
PT	prothrombin time
RACGP	Royal Australian College of General Practitioners
RACP	Royal Australasian College of Physicians
STEMI	ST-elevation myocardial infarction
STI	sexually transmitted infection
UEC	urea electrolyte and creatinine
WBA	workplace-based assessment



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