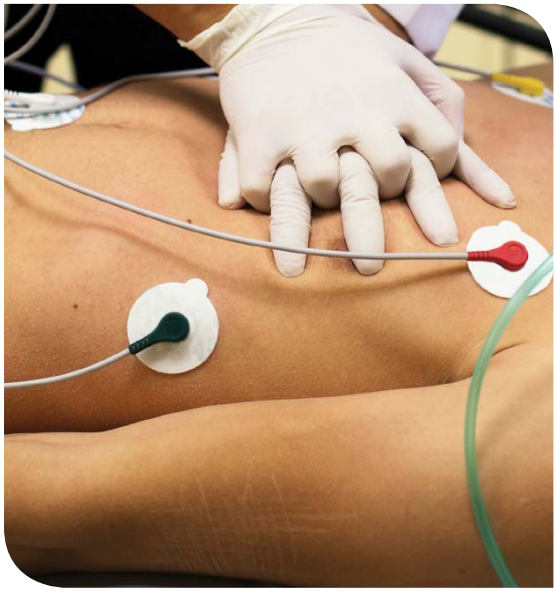
Advanced Specialised Training
Emergency Medicine

Curriculum



FELLOWSHIP

Australian College of
Rural & Remote Medicine
WORLD LEADERS IN RURAL PRACTICE

Contact details

Australian College of Rural and Remote Medicine
Level 2, 410 Queen Street, Brisbane, Qld 4000
GPO Box 2507, Brisbane, Qld 4001
P: (+61) 7 3105 8200 or 1800 223 226
F: (+61) 7 3105 8299
E: training@acrrm.org.au
ABN 12 078 081 848

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- Dr Peter Arvier BSc MBBS MMedSc FACRRM – Associate Head, Rural Clinical School, University of Tasmania
- Dr Victoria Brazil MBBS FACEM – Gold Coast University Hospital
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- Dr Andrew Dean – Director Clinical Training Emergency, St John of God Hospital Ballarat
- Dr Jennifer Delima MBBS MHA FACRRM FRACGP M Forensic Med, FAChAM – General Practitioner and Staff Specialist Addiction medicine, Alice Springs Hospital, Northern Territory
- Dr Paul DeJong – ACRRM Fellow
- Dr Oliver Dodd – Clinical Fellow Trauma, Leeds Major Trauma Centre
- Dr Grant Fraser – ACRRM Fellow
- Dr Paul Helliwell – Director Clinical Training and ED specialist, Alice Springs Hospital
- Professor Tony Joseph – ACEM Fellow
- Patricia M Kiely – Standards and Research Adviser, Optometry Australia
- Dr Ash Labib – ACRRM Fellow
- Associate Professor Steve Margolis – Emergency Department Consultant, Queensland Health
- Dr Nigel Moore – ACRRM Fellow
- Dr Kees Nydam – Clinical Director, Adjunct Associate Professor CQU
- Dr Ulrich Orda – ACRRM Fellow
- Associate Prof Lucie Walters MBBS, PhD DCH, DipRACOG, FRACGP, FACRRM – Professor in Rural Medical Education, Flinders University, GP Obstetrician, Mount Gambier Hospital
- Dr Jack Wearne – Senior Consultant, Emergency Department, Royal Adelaide Hospital

Contents

1. Background

Completion of a minimum 12 months Advanced Specialised Training (AST) is an essential component of training towards Fellowship of ACRRM (FACRRM). Candidates can select from a number of training areas which reflect rural and remote clinical practice needs. Emergency Medicine (EM) is a key priority area due to the relative isolation in which rural or remote doctor's practise and, therefore, the need to manage a wide range of emergency situations with a high degree of autonomy.

The Primary Curriculum defines the minimum scope and standards for independent practice anywhere in Australia, with a particular focus on rural and remote settings. It sets out the outcomes expected at ACRRM Fellowship (FACRRM) level. Doctors achieving a FACRRM are expected to be able to:

- Initially stabilise Australian Triage Category 1 and 2 patients with the support of an experienced colleague (which may be through distance technology) pending definitive emergency medical care, and
- Competently provide definitive emergency medical care for most Australian Triage Category 3, 4 and 5 patients and determine when additional support is required.

This AST Curriculum in EM builds on the emergency medicine component of the ACRRM Primary Curriculum. It focuses on the additional knowledge and skills required for advanced practice in emergency medicine. In addition to the abilities required in the Primary Curriculum for EM, doctors achieving AST in EM are required to be able to:

- Competently provide definitive emergency medical care including emergency medicine procedural interventions for individual patients across all presentations including Australian Triage Category 1 and 2.

This curriculum recognises that the practice of rural and remote emergency medicine covers a broad spectrum of contexts ranging from an isolated solo practice without a designated emergency department, to settings such as moderate sized regional hospital emergency department (ED) with 24-hour on-site medical staff and availability of some specialty services. Emergency medical practitioners may be involved in patient care activities ranging from the pre-hospital environment to emergency department assessment and stabilisation, as well as ongoing management that may include safe transfer to the next level of medical care.

By its nature, the practice of emergency medicine has considerable overlap with a number of other specialist disciplines, particularly anaesthetics, surgery, orthopaedics, internal medicine and paediatrics. Acute aspects of most disciplines have relevance to the practice of emergency medicine.

2. Purpose and requirements

2.1 Purpose

The aim of this curriculum is to improve emergency care in rural and remote communities through access to appropriately trained, safe and competent rural emergency medicine doctors. It defines the competencies required for the practice of emergency medicine in rural and remote settings.

2.2 Target group

This curriculum targets doctors who are undertaking an AST year in EM. It recognises that emergency medicine skills are fundamental to all types of rural and remote general practice. Therefore, this is relevant to any doctors wishing to work in any rural or remote setting and of special relevance to doctors wishing to work in a rural or remote hospital emergency department.

2.3 Training requirements

Clinical training

The minimum period of time required for AST in EM is 12 months full-time or equivalent part-time.

Candidates must be employed no less than 0.5 FTE as a registrar or equivalent.The training program will take into account other professional, personal and family needs and will offer the flexibility for individuals to undertake part time training. Candidates may also be able to undertake their Advanced Specialised Training in emergency medicine in two or more blocks.

Education

Candidates are required to successfully complete or be a recognised instructor for three emergency courses covering the following types of emergencies: trauma, adults and paediatrics.

The following courses are approved as suitable for AST Emergency Training; one course is required from each category:

- Trauma:
  - Early Management of Severe Trauma (EMST), or
  - Emergency Trauma Management Course (ETM)
- Adult:
  - Rural Emergency Skills Training (REST), or
  - Adult Life Support Australian Resuscitation Council Level 2 (ALS2), or
  - Emergency Life Support (ELS), or
  - Advanced and Complex Medical Emergencies (ACME), or
  - Effective Management of Anaesthetics Crises (EMAC)
- Paediatrics:
  - Advanced Paediatrics Life Support (APLS) course, or
  - Advanced Paediatric Emergency Medicine course (APEM)

Other nationally or internationally recognised Emergency Medicine courses covering the same competencies may also be acceptable.

Ideally these courses should be completed prior to commencing training or alternatively early in training. As some of the courses have long waiting lists, it is expected that candidates have enrolled in the above courses prior to commencing training.

At least two courses listed above (one for adults and one for paediatrics) must have been undertaken in the five years prior to completing AST in Emergency Medicine.

Candidates are also recommended to undertake an emergency obstetric course such as Rural Obstetric Emergencies for non GP Obstetricians (REOT) or Advanced Life Support in Obstetrics (ALSO) course.

2.4 Potential posts

Training for the AST year in emergency medicine must be undertaken in an urban or regional hospital, or hospital network accredited by ACRRM. Such institutions must have the caseload and teaching capacity to provide training in a sufficient range of emergency conditions to meet the requirements of this curriculum.

The majority of training must be completed in a hospital or hospital network with the following features:

- a 24-hour medically-staffed emergency department
- receiving a broad range of emergencies presentations across all Australian Triage Categories
- a director of emergency medicine holding a Fellowship of ACEM, Generalist Emergency Medicine qualification or deemed as equivalent by ACRRM
- specialist or rural generalist inpatient services covering the core disciplines of general surgery, orthopaedics, internal medicine, paediatrics and psychiatry
- access for trainees to support and supervision from experienced clinicians at all times, and
- the commitment and ability to provide the required level of teaching and experience.
- provide access to a simulation centre, either on site or away from the facility, for teaching of practical skills and scenarios

A teaching post accredited for at least 12 months of ACEM training will generally be suitable but must also gain ACRRM accreditation for AST EM. Institutions with established educational links to other institutions and involvement with undergraduate teaching and other vocational training, would be highly desirable.

See Standards for Supervisors and Teaching Posts in Advanced Specialised Training for further information.

2.5 Prerequisites

Prior to undertaking this post, candidates must meet the following minimum criteria:

- satisfactory completion of the 12 months Core Clinical Training component of ACRRM Fellowship training, or
- completion of postgraduate year two for those doctors who are not in Fellowship Training.

Satisfactory completion of rotations in an anaesthetics / intensive care unit (ICU) and paediatrics is strongly desirable.

While the above is the minimum prerequisites, it is desirable to have more experience, such as running resuscitation or supervising juniors while under the umbrella of a more experienced doctor.

This AST curriculum assumes prerequisite knowledge as outlined in the Primary Curriculum. In particular, the following basic knowledge and skills from the Primary Curriculum have been assumed:

- competent basic life support
- competent primary survey
- competent secondary survey
- recognition of the compromised/at risk airway
- competent basic airway manoeuvres
- competent intubation and LMA insertion in a simulated environment
- basic ventilation techniques (expired air resuscitation, bag/mask ventilation)
- principles of oxygenation, and
- performance and interpretation of adult and paediatric Glasgow Coma Scale.

3. Rationale

While many aspects of the practice of emergency medicine are common to both urban and rural practice, the nature of rural practice means that acute care is often undertaken without the extensive resources available in urban teaching hospitals.

Even in larger rural or regional hospitals, rural emergency medicine doctors require a broader range of skills than many colleagues in urban teaching hospitals, due to the limited physical resources, reduced availability of specialist staff, and longer lead times for retrieval to more specialised centres. Unlike doctors in major urban hospital emergency departments, the rural emergency department doctor is usually required to provide autonomous initial management of most patients.

In the more remote rural context, all care may be undertaken in a small hospital staffed by multi-skilled general practitioners and nursing staff. These staff will be responsible not only for emergency management, but also for all other fields of medicine including community general practice and administration.

In extremely remote areas, some community rural doctors do not have access to an inpatient facility and may be required to provide emergency pre-hospital, stabilisation and retrieval services with minimally trained support staff.

This curriculum has been developed with these varied rural and remote settings in mind. It recognises that the rural EM practitioner requires a generalist approach with competence in a broad range of skills that is applicable across all emergency medicine settings. It outlines the standard competencies required of all EM doctors across all rural and remote settings. This AST Curriculum allows the rural EM practitioner to build on the knowledge and skills of the Primary Curriculum and to provide a higher level of care appropriate to various locations and institutions.

4. Learning abilities

The curriculum defines the abilities, knowledge and skills for Advanced Specialised Training in EM.

The domains of rural and remote general practice, defined by ACRRM, provide a framework for organising the learning abilities for this curriculum.

The domains are:

1. provide medical care in the ambulatory and community setting
2. provide medical care in the hospital setting
3. respond to medical emergencies
4. apply a population health approach
5. address the healthcare needs of culturally diverse and disadvantaged groups
6. practise medicine within an ethical, intellectual and professional framework, and
7. practise medicine in the rural and remote context.

These levels of achievement build on the abilities in the emergency domain of the ACRRM Primary Curriculum.

These domains are integrated with the fields of competency essential to the rural or remote emergency medicine doctor:

- initial management
- definitive emergency care
- common emergency procedures
- ongoing management
- recognition and management of unusual but serious conditions
- transfer and transportation
- utilisation of available resources
- communication, and
- leadership and teamwork,

The competency framework in **Table 1** outlines the practice requirements for the rural EM doctor on completion of an AST year in EM. It defines the level of autonomy required in the management of various types of clinical emergencies and non-clinical responsibilities:

- A = completely autonomous management
- B = management with distant guidance, or with
- C = on-site support.

These competency standards build on and extend the basic competency requirements outlined in the Primary Curriculum. **Table 1** also defines the integration between the Domains of rural and remote general practice and the Fields of competency.

4.1 Table 1: Competency Framework: clinical content areas

	FIELDS OF COMPETENCY								
	Initial management	Time-critical & definitive emergency care	Common emergency procedures	Ongoing management	Uncommon but serious conditions	Transfer / transportation	Utilisation of available resources	Communication	Leadership and teamwork
Integrated Domains	**1,3,7**	**3,7**	**3**	**1,2**	**1,2**	**3**	**6**	**all**	**1,2,3,6**
CLINICAL CONTENT AREAS									
Airway emergencies	**A**	**B**	**A**	**B**	**C**	**B**	**A**	**A**	**A**
Respiratory emergencies	**A**	**B**	**A**	**B**	**C**	**B**	**A**	**A**	**A**
Anaesthesia and analgesia	**A**	**B**	**A**	**C**	**C**	**B**	**A**	**A**	**B**
Circulatory emergencies	**A**	**A**	**A**	**B**	**C**	**B**	**A**	**A**	**B**
Other causes of shock	**A**	**B**	**B**	**C**	**C**	**B**	**A**	**A**	**B**
Neurological emergencies	**A**	**A**	**A**	**B**	**C**	**B**	**A**	**A**	**B**
Psychiatric emergencies	**A**	**B**	**A**	**C**	**B**	**C**	**A**	**A**	**B**
Musculo-skeletal emergencies	**A**	**B**	**A**	**B**	**C**	**A**	**B**	**A**	**A**
Soft tissue emergencies and burns	**A**	**A**	**A**	**B**	**C**	**B**	**B**	**B**	**B**
ENT, Dental and maxillofacial emergencies	**A**	**A**	**A**	**B**	**B**	**B**	**B**	**A**	**A**
Abdominal and genito-urinary emergencies	**A**	**B**	**A**	**C**	**C**	**B**	**B**	**A**	**B**
Ophthalmological emergencies	**B**	**B**	**A**	**B**	**C**	**B**	**A**	**A**	**A**
Metabolic and endocrine emergencies	**A**	**A**	**A**	**B**	**B**	**B**	**A**	**A**	**A**
Dermatological emergencies	**A**	**A**	**A**	**B**	**B**	**A**	**A**	**A**	**B**
Toxicology and toxinology	**A**	**B**	**A**	**C**	**C**	**B**	**B**	**B**	**A**
Environmental emergencies	**A**	**A**	**A**	**B**	**C**	**B**	**B**	**B**	**B**
Infectious diseases	**B**	**B**	**A**	**B**	**B**	**B**	**B**	**B**	**B**
Sepsis	**A**	**A**	**A**	**B**	**C**	**B**	**A**	**A**	**A**
Paediatric and neonatal emergencies	**B**	**B**	**B**	**B**	**C**	**B**	**A**	**A**	**B**
Obstetric and gynaecological emergencies	**B**	**B**	**B**	**C**	**C**	**B**	**B**	**B**	**B**

A = completely autonomous management

B = management with distant guidance

C = on-site support.

4.2 Table 2: Competency Framework: non-clinical content areas

	FIELDS OF COMPETENCY								
	Initial management	Time-critical & definitive emergency care	Common emergency procedures	Ongoing management	Uncommon but serious conditions	Transfer / transportation	Utilisation of available resources	Communication	Leadership and teamwork
Integrated Domains	**1,3,7**	**3,7**	**3**	**1,2**	**1,2**	**3**	**6**	**all**	**1,2,3,6**
NON-CLINICAL CONTENT AREAS									
Forensic medicine and legal issues	**B**	**B**	**A**	**C**	**C**	**B**	**A**	**A**	**C**
Retrieval and special transport	**B**	**B**	**A**	**B**	**B**	**N/A**	**A**	**A**	**A**
Handover to (or from) retrieval services	**A**	**A**	**A**	**A**	**A**	**A**	**A**	**A**	**A**
Imaging and laboratory investigations	**A**	**A**	**A**	**B**	**B**	**N/A**	**A**	**A**	**N/A**
Point of care pathology	**A**	**N/A**	**N/A**	**A**	**N/A**	**N/A**	**A**	**A**	**N/A**
Emergency department management	**B**	**N/A**	**A**	**C**	**B**	**B**	**A**	**A**	**A**
Preparing for and managing a multi-casualty disaster	**B**	**B**	**B**	**B**	**B**	**B**	**B**	**B**	**B**
Consultation via interpreter services	**A**	**A**	**A**	**A**	**A**	**A**	**A**	**A**	**A**
Participate in interagency meeting	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**B**	**B**	**B**	**A**
Provide formal education sessions for other clinical staff	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**A**	**A**
Participate in clinical audit	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**A**

5. Domains

Domain 1. Provide medical care in the ambulatory and community setting

Themes: Patient-centred clinical assessment, clinical reasoning, clinical management

Abilities

1.1 Establish a doctor-patient relationship and use a patient-centred approach to care

1.2 Obtain a clinical history that reflects contextual issues including:
presenting problems, epidemiology, culture and geographic location

1.3 Perform a problem-focussed physical examination relevant to clinical history and risks, epidemiology and cultural context

1.4 Use specialised clinical equipment as required for further assessment and interpret findings

1.5 Order and/or perform diagnostic tests where required to confirm a diagnosis, monitor medical care and/or exclude treatable or serious conditions

1.6 Apply diagnostic reasoning to arrive at one or more provisional diagnoses, considering uncommon but clinically important differential diagnoses

1.7 Communicate findings of clinical assessment effectively and sensitively to the patient and/or carer

1.8 Ensure safe and appropriate prescribing of medications and treatment options in the clinical context

1.9 Ensure adequate community cover when transporting a critically ill patient.

Domain 2. Provide care in the hospital setting

Themes: Medical care of admitted patients, medical leadership in a hospital team, health care quality and safety

Abilities

2.1 Maintain a clinically relevant plan of fluid, electrolyte and blood product use with relevant pathology testing

2.2 Order and perform a range of diagnostic and therapeutic procedures according to patient need and service capabilities

2.3 Maintain timely and accurate patient documentation in hospital records including drug prescription and administration

2.4 Communicate effectively with the health care team, patient and/or carer including effective structured clinical handover e.g. ASBAR

2.7 Anticipate and judiciously arrange safe patient transfer within own facility and to other facilities, considering clinical indications, service capabilities, patient preferences, transportation and geography.

2.8 Recognise, document and manage adverse events and near misses.

Domain 3. Respond to medical emergencies

Themes: Initial assessment and triage, emergency medical intervention, communication and planning

Abilities

3.1 Undertake initial assessment and triage of patients with *acute or life-threatening conditions*

3.2 Take a focused and relevant case history initially followed by a comprehensive case history eliciting essential case information, including talking to patient, family members, friends and event witnesses once patient stabilised

3.3 Make an accurate and timely diagnosis

3.4 Stabilise critically ill patients and provide primary and secondary care for *emergency conditions*

3.5 Provide definitive emergency resuscitation and management across the lifespan in keeping with clinical need, own capabilities and local context and resources

3.6 Know how to investigate a condition

3.7 Recognise and manage emergencies in all ages including the elderly, *paediatric and neonatal groups* and cover all emergency conditions including toxicology, obstetrics and psychiatric disease

3.8 Appropriately refer to retrieval services and prepare patients for the arrival of the retrieval team

3.9 Communicate effectively at a distance with consulting or receiving clinical personnel

3.10 Contribute to disaster planning and implementation of disaster plans, and post-incident analysis and debriefing

3.11 Provide inter-professional team leadership in emergency care that includes quality assurance and risk management assessment.

Where an area in the ability statements is *italicised and underlined* further information relating to this phrase is found under the Definition of terms section that follows.

Domain 4. Apply a population health approach

Themes: Community health assessment, population-level health intervention, evaluation of health care, collaboration with agencies

Abilities

4.1 Assess trends in emergency presentations and identify underlying community health issues including substance abuse, infectious diseases and traumatic injuries

4.2 Fulfil reporting requirements in relation to statutory notification of health conditions

4.3 Access and collaborate with agencies responsible for key population health functions including public health services, employer groups and local government

4.4 Implement health directives in accordance with Health Department Directives.

Domain 5. Address the health care needs of culturally diverse and disadvantaged groups

Themes: Differing epidemiology, cultural safety and respect, working with groups to improve health outcomes

Abilities

5.1 Apply knowledge of the differing profile of disease and health risks among culturally diverse and disadvantaged groups

5.2 Apply knowledge of the barriers to health care and services for culturally diverse and disadvantaged groups

5.3 Communicate effectively and in a culturally safe manner, using interpreters, key community contacts and networks as appropriate

5.4 Reflect on own assumptions, cultural beliefs and emotional reactions in providing culturally safe care

5.5 Apply principles of partnership, community ownership, consultation, capacity building, reciprocity and respect to health care delivery, health surveillance and research

5.6 Harness the resources available in the health care team, the local community and family to improve outcomes of care.

Domain 6. Practise medicine within an ethical, intellectual and professional framework

Themes: Ethical practice, professional obligations, intellectual engagement including teaching and research

Abilities

6.1 Ensure safety, privacy and confidentiality in patient care

6.2 Gain consent (implied, verbal or written) where practical in emergency situations

6.3 Maintain appropriate professional boundaries

6.4 Be aware of duty of care issues arising from providing health care to self, family, colleagues, patients and the community

6.5 Recognise unprofessional behaviour and signs of the practitioner in difficulty among colleagues and respond according to ethical guidelines and statutory requirements

6.6 Keep clinical documentation in accordance with legal and professional standards

6.7 Coordinate, work with and / or provide leadership (clinical and operational) as appropriate to multidisciplinary and / or inter-professional teams encompassing emergency services (police, fire brigade, ambulance), retrieval services, emergency department staff members, inpatient services and community members.

6.8 Establish and maintain appropriate *emergency department systems and procedures*

6.9 Contribute to the management of human and financial resources within a health service

6.10 Work within relevant national and state legislation, and professional and ethical guidelines including advanced directives and limits of resuscitation

6.11 Provide accurate and ethical certification when required for births, deaths, sickness, employment, social benefits and other purposes

6.12 Manage, appraise and assess own performance in the provision of medical care for patients

6.13 Develop and apply strategies for self-care, personal support and caring for family

6.14 Establish a peer support network and to utilise this network to debrief in times of personal or professional stress, especially following emergency situations, which may cause particular distress

6.15 Teach and clinically supervise health students, junior doctors and other health professionals

6.16 Engage in continuous learning and professional development

6.17 Critically appraise and apply relevant research.

Domain 7. Practise medicine in the rural and remote context

Themes: Resourcefulness, flexibility, teamwork and technology, responsiveness to context

Abilities

7.1 Demonstrate resourcefulness, independence and self-reliance while working effectively in geographic, social and professional isolation

7.2 Provide effective clinical care when away from ready access to specialist medical, diagnostic and allied health services

7.3 Arrange referral to distant services in concert with the patient and/or carer considering the balance of potential benefits, harms and costs

7.4 Provide direct and distant clinical supervision and support for other rural and remote health care personnel

7.5 Use information and communication technology to provide medical care or facilitate access to specialised care for patients

7.6 Use tele-medicine effectively and efficiently to upload X-rays, clinical images, and other data to consult with distant specialists

7.7 Use information and communication technology to network, support and exchange information with distant colleagues

7.8 Respect local community norms and values in own life and work practices

7.9 Identify and acquire extended knowledge and skills as may be required to meet health care needs of the local population.

6. Definition of terms

Acute or life-threatening conditions	Recognition of the seriously unwell conscious patient appropriate prioritisation and sequencing of assessments, investigations and management tasks in emergency cases, including: • seriously unwell conscious patients • patients with undifferentiated severe acute pain • undifferentiated unconscious patients • undifferentiated sick children • major or complicated trauma – multiple trauma, head trauma, pelvic fracture, ENT, maxillofacial, abdominal (blunt and penetrating) and genital trauma • acutely psychotic patients, including suicide risk assessment • undifferentiated acute infections.
Emergency conditions	Airway and respiratory emergencies: difficult foreign bodies, severe asthma, respiratory distress, tension pneumothorax, compromised airways, hypoventilation, hypoxia and chest trauma Circulatory and cardiovascular emergencies: chest pain, acute coronary syndromes, cardiogenic shock, hypovolaemic shock, hypertensive emergencies, haemostatic emergencies, cardiac tamponade, acute myocardial infarction, thrombo-embolic emergencies including pulmonary embolism, gas embolism and anaphylaxis: • application of Advanced Cardiac Life Support (ACLS) algorithms • defibrillation, cardioversion and external cardiac pacing • advanced thrombolytic therapy, including management of complications • platelet inhibitor and anticoagulant therapy • advanced hypotensive therapy • periocardiocentesis with on-site or distant guidance • advanced haemostatic therapy • advanced anti-arrhythmic therapy • competent and confident administration of inotropes • principles of angioplasty and stenting • principles of occult blood loss in trauma • competent and confident blood transfusion and fluid resuscitation including minimum volume fluid resuscitation Neurological emergencies: neurologic trauma, coma, stroke, cerebral ischaemia, space occupying lesions, intracranial haemorrhage, subarachnoid haemorrhage, altered mental status, acute confusional states, delirium, undifferentiated headache, Guillian-Barre Syndrome, seizures, status epilepticus, meningitis and neurogenic shock: • seizure monitoring and control • competent and confident performance of burr hole with distant guidance from a neurosurgeon Musculo-skeletal emergencies: simple and complex fractures and dislocations, compound wounds, spinal injuries, ischaemic limbs (including compartment syndrome), degloving injury, amputated digits, acute back pain/sciatica and maxillofacial injury: • independent splinting, casting and reduction of simple fractures and dislocations • reduction of complex fractures/dislocations under supervision, including minimisation of neurovascular compromise

	• competent and confident initial management of compound wounds • competent and confident initial management of spinal injuries, including awareness of patterns of spinal injury without radiological abnormality • repair of simple tendon injuries • independent joint aspiration Soft tissue emergencies and burns: foreign bodies, abscesses, burns (thermal, chemical and electrical), frostbite, necrotising infections, bite wounds, crush injury, neurovascular injury, degloving injury and acute desquamating conditions: • removal of superficial foreign bodies • independent abscess drainage • independent wound management, including prophylactic antibiotic administration, local anaesthetic, tetanus injections, wound cleaning, debridement and wound closure techniques • independent initial management of minor burns • initial management of moderate or severe burns with on-site or distant guidance • management of rhabdomyolysis/acidosis • monitoring and management of compartment pressure, including escharotomy under direct supervision • pressure care of soft tissues at risk from ischaemia and infection • regulation of body temperature in patients with dermatological emergencies Obstetric and gynaecologic emergencies : haemorrhage in early pregnancy, trauma in pregnancy, miscarriage, precipitate delivery, common labour and delivery complications, hypertensive urgencies, hyperemesis, pre-eclampsia, eclampsia and post-partum problems including fluid embolus, uterine rupture, haemorrhage, sepsis and retained products of conception (POC): • competent and confident initial management of haemorrhage in early pregnancy • initial management of trauma in pregnancy • competent and confident management of miscarriage • timely recognition and transfer of patients requiring surgical intervention • competent and confident management of common labour and delivery complications • seizure control in eclampsia • management of precipitate delivery with distant guidance • initial management of post-partum problems Abdominal and genito-urinary emergencies: acute renal failure, foreign body ingestion, abdominal trauma, acute urinary retention, oesophageal varices and paraphimosis: • competent and confident initial management of acute renal failure • removal of gastrointestinal foreign bodies • urethral and suprapubic catheterisation • control of oesophageal varices • reduction of paraphimosis with on-site or distant guidance Metabolic and endocrine emergencies : hypoglycaemia, diabetic ketoacidosis (DKA), hyperosmolar non-ketotic states, hypokalaemia, hyperkalaemia, hypocalcaemia, hypercalcaemia, hyponatraemia, Addisonian crisis, hypothermia and hyperthermia: • competent and independent insulin infusion

	• competent and independent intravenous potassium replacement • competent and independent IV fluids for endocrine emergencies Acute infections : undifferentiated sepsis, septicaemia, urosepsis, neutropenic sepsis, febrile convulsion, septic shock, exotic infectious diseases, nosocomial infections, needle stick injury and other body fluid exposure: • chemotherapeutics for undifferentiated sepsis • be aware of and able to follow protocol for management of needle stick injury and other body fluid exposure • competent and confident application of infection control procedures, public health reporting procedures and management of contact persons Toxicologic and toxinological emergencies: drug/alcohol overdose, accidental and deliberate toxic ingestion, terrestrial and marine envenomation, deliberate chemical biological or radiological (CBR) incidents, polypharmacy overdose and delayed presentations: • competent and independent antivenom and antidote administration • competent use of venom detection kit (VDK) with distance guidance • competent administration of whole blood clotting time (WBCT) test • decontamination procedures for deliberate CBR incidents – for patients, staff members and in an emergency department Environmental emergencies: hypothermia, hyperthermia, barotrauma, near drowning, electrical injury and smoke/gas inhalation: • re-warming techniques • cooling techniques • temperature monitoring • initial management of diving injuries, including hyperbaric medicine Opthalmological emergencies: chemical and thermal trauma, blunt and penetrating trauma, hyphaema, blowout fracture, UV trauma, snow blindness, acute vision loss, acute chalazion, glaucoma, viral and bacterial infections, foreign bodies and peri-ocular lacerations: • refer for removal of difficult foreign bodies • repair onsite or referral for repair peri-ocular lacerations ENT and dental emergencies : dental trauma, acute infection, maxillofacial trauma, anterior and posterior epistaxis, aural and nasal foreign bodies and quinsy: • tooth preservation techniques • infection prevention and management • competent and independent management of anterior and posterior epistaxis • removal of difficult foreign bodies with caution Psychiatric emergencies: acute psychosis, suicide threat or attempt, violent self-harm: • competent and confident differentiation between an acute severe behavioural disturbance due to acute delirium (including substance intoxication and withdrawal) and psychosis • competent and confident differentiation between an acute psychological emergency and a psychiatric emergency • competent and confident differentiation between an acute psychological emergency and a psychiatric emergency • competent and confident risk assessment, engagement and acute counselling

	skills • competent and confident administration of rapid-acting antipsychotics and other medication where appropriate • appropriate administration of chemical restraint • use of relevant legislation for compulsory admission
Paediatric and neonatal emergencies, including:	• competent and confident paediatric and neonatal advanced life support • paediatric calculations – appropriate dosages and equipment size • competent and confident estimation and administration of fluid requirements for resuscitation and ongoing maintenance • lumbar puncture, clean catch urine and phlebotomy in children • procedural sedation • paediatric conscious sedation with on-site supervision • paediatric pain management techniques • competent and confident airway management in children and neonates, including: foreign body removal, management of stridor, croup and epiglottitis, paediatric intubation • competent and confident management of Sudden Infant Death Syndrome (SIDS) • advanced intra-venous access techniques – intra-osseous infusion and neonatal umbilical catheterisation • competent and confident management of acute infections in children, including neonatal infections, sepsis and meningitis • seizure management, including diagnosis of the underlying cause(s) • management of diabetic ketoacidosis (DKA) in children • warming techniques in children and neonates • recognition of serious gastro-intestinal conditions, including pyloric stenosis and intussuception • recognition of uncommon but serious neonatal conditions including prematurity, sepsis, respiratory failure and congenital abnormalities
Emergency department systems and procedures	• trauma and priority team organisation • multi-casualty preparedness and response • co-ordination with police and other agencies • risk management, critical decision making and dealing with uncertainty • use of electronic record systems • quality assurance and audit policies and procedures • storage and handling of blood products • organ donation and transplantation protocols • pharmaceutical dispensing • staff management and communication skills • inter-professional co-operation skills • complaint management • occupational health and safety measures.

Uncommon conditions which may have potentially serious consequences:	• post-natal depression/psychosis • dermatological manifestation of systemic disease • serious skin infections • ectopic pregnancy • placental abruption • obstructive nephropathy • ischaemic bowel • abdominal aortic aneurysm • undifferentiated ocular pain • acute loss of vision • thyrotoxicosis and thyroid crisis • acid-base balance disorders • exotic infectious diseases • nosocomial infections.

7. Knowledge and skills

Characteristics of rural and remote settings and their impact on emergency medicine that need to be considered include the differences when compared with metropolitan settings in:

- Prevailing social attitudes to health, illness and health care
- Incidence and prevalence of emergency medical conditions
- Aboriginal and Torres Strait Islander Peoples Health
- Access to physical resources including investigations, medications and treatments
- Access to specialist services
- Selection criteria, protocols, principles, limitations and interpretation of results of the tests listed in skills section
- Features of congenital and acquired conditions that may predispose patients to emergency presentations or complicate emergency management including; congenital heart disease, congenital maxillofacial and other anatomical abnormalities, acquired anatomical abnormalities
- Diagnostic features and initial management of *uncommon conditions which may have potentially serious consequences*
- Risk factors for secondary injuries in emergency patients, discuss strategies for reducing these risks, and outline appropriate management for secondary injuries if these occur: renal failure, cardiac failure, adult respiratory distress, syndrome (ARDS), disorders of coagulation, cerebral hypoxia, multi-system failure, sepsis and neurovascular compromise.
- Anaesthetics and analgesic decision-making and delivery. This includes the factors involved in making difficult anaesthetics decisions – neonates, young children, elderly, shock, obesity, co-morbidities and burns
- Clinical and medico-legal requirements for management of physical and/or sexual assault cases, including:
    - sexual assault examination and specimen collection
    - recognition of non-accidental injury patterns in children and domestic partners
    - understanding the coronial investigation process
    - writing medico-legal reports
    - giving evidence in court, and / or
    - treatment of minors and persons in custody
- Principles of triage and their application to emergency situations.
- Knowledge of the Australasian Triage Score and it's application to the clinical setting
- Potential complications (including possible treatment failure) of the emergency procedures and definitive therapies
- Signs and symptoms of these complications and outline appropriate rescue plans. This includes:

    - post-procedural complications – thromboembolism, vascular insufficiency, infection, wound breakdown, perforation/obstruction, mechanical failure, pneumothorax, spinal headache, renal failure
    - complications of therapeutics – allergy/anaphylaxis, toxicity, drug interactions, GI bleeding, dystonic reactions, neuroleptic malignant syndrome, transfusion reactions, over-hydration, over-anticoagulation
    - complications of dialysis.
- Epidemiologic characteristics, prevention and control measures for infectious disease outbreaks, including:
    - immunisation and post-exposure prophylaxis
    - community epidemics
    - nosocomial outbreaks
    - tropical and exotic infections
    - sexually transmitted infections.
- Principles for disaster prevention, preparedness, response and recovery in rural and remote communities
- Principles of injury prevention in rural and remote contexts and demonstrate the ability to implement an injury prevention program
- Epidemiologic characteristics and prevention and control measures for infectious disease outbreaks in small isolated communities
- Ethical issues around end of life presentations (either medical, surgical, oncological, geriatric based or trauma).

Essential knowledge required

A doctor who has attained an AST EM is expected to be able to perform the following procedural skills at the minimum level of competency articulated. Note: These levels may differ from the level of certification required in the AST EM procedural logbook. The level required for certification needs to take into account feasibility, therefore many skills in procedural skill logbook only require certification through simulation, because they are not seen often.

Key:

A = manage autonomously

B = manage with distant guidance,

C = manage with on-site support,

D= assist with,

N/A = not applicable

* = urgent care

Procedure	Level of Competency
Adult Internal Medicine	
CPAP/BIPAP *	A
defibrillation	A
synchronised dc cardioversion	A
intravenous cardioversion	A
cardiac pacing	B
anti-arrhythmic therapy	A
intercostal catheter	A
supra-pubic catheter insertion	A
thrombolytic therapy	A
blood transfusion	A
lumbar puncture and CSF manometry	A
arterial blood sampling	A
venom detection kit*	A
pericardiocentesis*	B
administer inotropes	A

needle thoracocentesis	A
seizure control in status epilepticus	A
emergency use of contrast	A
Anaesthetics	
peripheral intravenous access	A
central intravenous access (other than femoral with or without ultrasound guidance)	A
interosseous access*	A
peripheral line Seldinger *	A
oropharyngeal airway *	A
nasopharyngeal airway*	A
laryngeal mask*	A
endotracheal intubation*	A
bag/mask ventilation *	A
surgical or percutaneous cricothyroidotomy	B
needle cricothyroidotomy	A
external cardiac massage *	A
rapid sequence induction (uncomplicated) *	A
rapid sequence induction with c spine stabilisation	A
rapid sequence induction with difficult airway	B
intubation using bougie	A
intubation using intubating laryngeal mask	A
failed intubation drill	A
Indirect laryngoscopy	B
fibreoptic/glidescope laryngoscopy	B
emergency use of mechanical ventilators*	A
reduce tension pneumothorax*	A
administer nitrous oxide (as analgesia)	A
digital nerve block	A
intercostal nerve block	A
biers block	B
femoral nerve block	A
other regional blocks e.g. ankle, ulnar nerve	B
basic procedural sedation: narcotic / benzodiazepine	A
advanced procedural sedation: ketamine / propofol	A
pre-intubation airway assessment	A
emergency dental anaesthetic techniques	A

ongoing sedation of intubated patient	A
Paediatric	
bag-mask ventilation	A
oropharyngeal airway insertion	A
endotracheal intubation *	A
intubation (neonate)*	A
resuscitation (neonate)*	A
use of mechanical ventilator	B
rapid sequence induction	B
umbilical catheter (neonate)*	A
synchronised DC cardioversion *	B
intercostal catheter	A
needle thoracocentesis	A
local anaesthesia (topical and infiltration techniques)	A
reduction of simple fracture	A
reduction of simple joint dislocation	A
repair of uncomplicated superficial skin lacerations	A
removal of subcutaneous foreign body	A
urethral catheterisation	A
suprapubic aspiration	A
venous blood sampling	A
lumbar puncture	A
procedural sedation	A
IV access < 5 years old*	A
IV access> 5 years old*	A
intraosseous access	A
ongoing sedation of intubated patient	A
intra nasal analgesic techniques	A
Mental Health	
pharmacological restraint of acutely disturbed patient	A
management of an aggressive patient / family member / other	A
Musculoskeletal medicine	
soft tissue injury strapping	A
joint injection and aspiration	A
reduction of simple fracture (adult)	A
initial management of compound fracture	A

reduction of complex fractures and dislocations	B
fracture splinting and casting	A
stabilisation of injured spine *	A
reduction of simple joint dislocation	A
unlocking temporomandibular joint	A
unlocking knee	B
measurement of compartment pressures	B
Obstetrics & Women's Health	
uretheral catheterisation on female	A
perform foetal heart sound detection with or without ultrasound	A
manage cord prolapse	B
perform perineal repair	B
manage shoulder dystocia	B
manage normal delivery	A
episiotomy	B
fundal height assessment	A
Ophthalmology	
use slit lamp	A
topical anaesthesia of cornea	A
staining cornea with fluorescein	A
eyelid eversion	A
irrigation of eye	A
removal of superficial corneal foreign body	A
removal of subtarsal foreign body	A
measurement of intra-ocular pressure	A
Medical Imaging	
early obstetric ultrasound	A
extended focused assessment with sonography for trauma	A
ultrasound scan for aortic aneurysm	A
ultrasound for vascular access	A
Surgery	
insertion wick into external ear canal	A
central vein cannulation *	A
arterial line placement	A
cryotherapy of skin lesions	A
incision and drainage of abscess	A

drainage of subungual haematoma	A
drainage perianal abcess	A
drainage of thrombosed pile	A
removal of nasal foreign body	A
packing/tamponade for epistaxis	A
cauterise nasal bleeding	A
tooth preservation techniques	A
ear toilet	A
removal of foreign body from external auditory meatus	A
repair of simple skin lacerations	A
closure of multi-layered wounds	A
suture laceration in a cosmetically difficult area	A
initial management of partial or full thickness burns	A
simple wound debridement	A
management of a contaminated wound	A
removal of subcutaneous foreign body	A

8. Teaching and learning approaches

The emphasis for AST in EM will be on acquiring relevant clinical experience and skills to competently practice emergency medicine. Teaching approaches will include, but are not limited to:

- *Clinical experience-based learning* – The majority of teaching and learning should take a case based experiential format. This is the most valuable approach to learning specific clinical skills. It may occur within the rural emergency department or in remote or retrieval contexts
- *Small-group tutorials* – These may be face-to-face, via videoconference or using online tele-tutorial technology
- *Simulation laboratory sessions* – These may be needed for those situations that are encountered infrequently in the clinical setting, or those requiring rehearsal of team and inter-professional co-operation
- *Face to face education meetings* – These may be linked with regional training organisations, undertaken by teleconference or video conference, or opportunistically through relevant conferences and / or
- *Distance learning modes* – These are available via the internet, such as using Rural and Remote Medical Education Online (RRMEO), LifeInTheFastLane, EMCrit and other sources and
- *Case based discussion forums and*
- Other self-directed learning activities

9. Supervision and support

Candidates undertaking AST in EM will require specific medical, cultural, professional and personal support and supervision arrangements.

This will include at least:

1. *Specialist supervisor* – a doctor holding a Fellowship of ACEM or ACRRM Generalist Emergency Medicine qualification, or be deemed equivalent by ACRRM, who is overall responsible for the clinical and educational supervision of the registrar.
2. *General Practitioner mentor* – a general practitioner who is working, or has worked in a similar situation to where the registrar intends to use their advanced skill. The mentor provides pastoral care and opportunities to debrief or act as a sounding board about cultural or personal issues. The supervisor should be a rural doctor who can put specialist information into rural context. This role may be filled by a specialist supervisor who fits these criteria.

See Standards for Supervisors and Teaching Posts in Advanced Specialised Training for further information.

10. Assessment

The assessments required for AST in EM are additional to the assessments undertaken for Core Clinical Training and Primary Rural and Remote Training.

Candidates undertaking AST in EM are required to complete the following additional assessment tasks:

Formative tasks:

- Formative AST EM supervisor feedback reports – at 6 months
- Formative miniCEX – minimum of five consults

Summative tasks:

- Summative AST EM supervisor feedback reports – at 12 months
- AST EM StAMPS – Structured Assessment using Multiple Patient Scenarios (StAMPS), examining case scenarios specific to advanced emergency medicine.
- AST EM procedural skills logbook.

10.1 AST EM supervisor feedback reports

The candidate's supervisor will complete feedback reports half way through the training term (i.e. 6 months for a full-time candidate) and again at the completion of the training term (i.e. 12 months for a full-time candidate). The first feedback report will be completed as a formative activity to guide further candidate learning and development. The second feedback report will be a summative exercise used to determine the candidate's competence.

These reports are a collation of feedback from staff that have supervised or worked alongside the candidate during the period of training. Feedback will be obtained from at least two consultants or colleagues, including the candidate's supervisor. It is the responsibility of the supervisor to obtain this information and send to the College.

10.2 Formative MiniCEX

A miniCEX can be conducted at the instigation of the candidate with their supervisor or any medical practitioner of their choosing, as long as the assessor is a fully trained general practitioner, hospital based senior candidate or consultant.

The five formative miniCEX consults may be undertaken consecutively by one reviewer, however the process will be more valuable if conducted at different sessions or locations by different reviewers.

For each formative miniCEX consultation, the assessor provides written and oral feedback to the candidate during and after using a standardised format. Formative miniCEX forms can be downloaded from the ACRRM website by visiting: www.acrrm.org.au/assessment

To assist candidates and assessors in this process, an online training module is available on the College's online learning platform Rural and Remote Medical Education Online (RRMEO). Users can enroll in this module via the Educational Inventory.

10.3 AST EM StAMPS

The EM AST Structured Assessment using Multiple Patient Scenarios (StAMPS) is an OSCE / VIVA-type examination consisting of eight emergency medicine scenarios, each of 10 minutes duration. EM AST StAMPS examinations are delivered face to face. Candidates remain in one place (at their videoconference facility or room) and the examiners rotate between the candidates. By the end of the examination, candidates have been examined by eight different examiners.

The examiners observe and rate each candidate across five competencies:

1. Overall Impression
2. Develop appropriate management plan that incorporates relevant medical & rural (community profile) contextual factors
3. Define the problem systematically
4. Communication
5. Flexibility in response to new information.

10.4 AST EM procedural skills logbook

Completion of the EM AST procedural skills logbook is a summative task required for the candidate to pass their AST training term in emergency medicine. The candidate must demonstrate the appropriate number of each of the procedures detailed in the EM AST procedural skills logbook. Each procedure must be performed to the designated level of competence and must be certified by an appropriate witness – generally a supervisor or senior clinician. The procedure must be signed off by the witness, or sufficient information recorded about the location and the witness to allow ACRRM to verify that the procedure was certified. The completed logbook must be submitted to ACRRM.

11. Learning resources

Definitive Texts

- Cameron, P et al: Textbook of Adult Emergency Medicine, Edinburgh - Churchill Livingstone.
- Cameron, P et al: Textbook of Paediatric Emergency Medicine, Edinburgh - Churchill Livingstone.

Other recommended texts and resources

- Rosen: Emergency Medicine
- Tintinalli, J et al: Emergency Medicine, a comprehensive study guide, New York - McGraw-Hill.
- ACRRM online learning: www.acrrm.org.au
- Bersten A, Soni N, Oh T: Oh's Intensive Care Manual, Edinburgh - Butterworth-Heinemann.
- McRae R, Esser M: Practical fracture treatment, Edinburgh - Churchill Livingstone.
- Murray L et al: Toxicology Handbook, Sydney - Elsevier
- Shann, F: Drug doses, Parkville Vic - Collective.
- Australian Medicines Handbook: Drug Choice Companion Emergency Care, Adelaide - Australian Medicines Handbook Pty Ltd.

12. Evaluation

The Advanced Specialised Training program in emergency medicine will be evaluated on an ongoing basis using both qualitative and quantitative methods. All stakeholders involved in the process will be asked to provide feedback regarding the content, feasibility, rigor and outcomes in preparing doctors to take on these roles. Stakeholders will include candidates, supervisors, employers and medical educators from training organisations and others who may have been involved, such as Rural Workforce Agencies, the Remote Vocational Training Scheme, universities and health service providers. The information gathered will be collated by ACRRM and will feed into a 3-5 yearly review of the curriculum.

Australian College of Rural and Remote Medicine
Level 2, 410 Queen Street, Brisbane, Qld 4000
GPO Box 2507
P: 07 3105 8200
F: 07 3105 8299
E: acrrm@acrrm.org.au
ABN 12 078 081 848

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