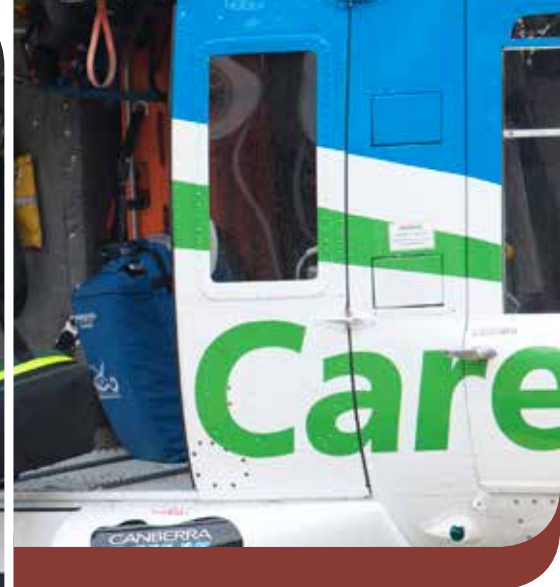




Advanced Specialised Training Remote Medicine

Curriculum



FELLOWSHIP



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1. Background

Completing a minimum 12 months full time or equivalent part time of Advanced Specialised Training (AST) is an essential component of training towards Fellowship of ACRRM. Candidates can select from a number of training areas which reflect rural and remote clinical practice needs. Remote medicine is one of these priority areas due to the increasing number of doctors working in remote sites and communities, and the special needs of populations living in extreme climatic or geographic situations.

This AST Curriculum outlines the expected outcomes and assessment requirements for candidates undertaking an AST post in remote medicine. It builds on the remote medicine aspects of the ACRRM Primary Curriculum.

2. Purpose and requirements

2.1 Purpose

The aim of this curriculum is to provide remote populations with appropriately trained, safe and competent general practitioners who have an interest in sustaining a working life in these environments.

2.2 Target group

This curriculum targets ACRRM enrolled candidates who are undertaking their AST year in remote medicine. Such candidates are generally employed by an organisation, government or non-government, rather than being self-employed or working in solo practice. They include, but are not limited to:

- candidates training on the Remote Vocational Training Scheme (RVTS)
- candidates working in discrete remote Indigenous communities
- aero-medical candidates, such as those in the Royal Flying Doctor Service (RFDS)
- Australian Defence Force candidates
- Antarctic and expedition medicine candidates
- candidates working in isolated or remote communities
- candidates working for humanitarian organisations such as Médecins Sans Frontières (MSF), Red Cross, or refugee organisations.

2.3 Training requirements

Clinical training

Advanced Specialised Training in remote medicine requires a minimum 12 months full time or equivalent part time training. The training program will take into account other professional, personal and family needs and will offer the flexibility for individuals to undertake this training on a part-time basis or in two or more blocks. Candidates who choose these options will not be disadvantaged.

Education

Doctors undertaking an AST in remote medicine are required to satisfactorily complete the following course:

- the ACRRM “Introduction to Population Health” online learning module at www.acrrm.org.au

It is strongly recommended that candidates undertake an academic program to support the acquisition of appropriate theoretical knowledge. See 11. Potential Articulation section of this curriculum for suggestions on suitable courses.

2.4 Potential posts

Training for the AST year in Remote Medicine may take place in any post accredited by ACRRM for Primary Rural and Remote Training providing that it is in a remote location.

To achieve curriculum outcomes, it may be necessary for a registrar training between across more than one facility. Suitable facilities may include but are not limited to one or more of the following:

- discrete remote Indigenous communities
- remote Aboriginal Medical Services (AMSs)
- aero-medical and retrieval services (e.g. Royal Flying Doctor Service)
- remote primary health care services
- Australian Defence Force remote medical posts – navy, air force, or army – in Australia and overseas
- Antarctic and expedition medicine posts
- isolated posts – solo towns, ski resorts, islands, tourist resorts, mine sites, jails
- refugee posts in Australia and overseas, and
- tele-health posts that service remote populations.

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.

Candidates undertaking AST in Remote Medicine must be skilled independent practitioners with proven basic skills and some rural and remote experience prior to commencing this post. It is strongly advised that candidates undertaking AST in remote medicine do so in the fourth and final year of ACRRM Fellowship training, or at least in their fifth post graduate year (PGY5).

Prior to undertaking AST in Remote Medicine, candidates must have satisfactorily completed the majority of emergency courses required by ACRRM's Vocational Training program.

It is also strongly advised for candidates to achieve competency in all or most of the procedural skills outlined in the ACRRM Primary Curriculum Procedural Skills Logbook prior to undertaking a remote medicine post.

3. Rationale

The geographic, demographic, social and cultural nature of remote Australia and its inhabitants bring a range of unique challenges to the practice of remote medicine.

3.1 Remote Australia

This curriculum statement covers the geographical areas classified by the Australian Bureau of Statistics as Remoteness Areas (RA) as follows:

- RA 4, Remote Australia, and
- RA 5, Very Remote Australia.¹

These areas combined make up over three-quarters of the Australian landmass. They are enormously diverse in climate, character, size and latitude – including vast deserts, alpine slopes, tropical forests and savannahs, tropical and temperate islands, and polar ice fields.² In addition to geographic isolation, these areas are characterised by cultural diversity, extreme climatic conditions, and disadvantaged socioeconomic, health and resource status.²

3.2 Remote populations

Remote populations include Indigenous Australians, multi-generation primary producers, mine workers, professional people (short and long-term), seasonal and tourism workers, and those who work on ships, oil rigs, islands and Antarctica. In 2006, remote populations accounted for approximately 2.3 per cent of the total Australian population.¹

Aboriginal and Torres Strait Islander Australians make up approximately 16 percent of the remote population and 48 percent of the very remote population.¹ Indigenous Australians have the worst health status in the world on some indicators: diabetes, renal disease, infectious diseases (especially gastroenteritis, otitis media and pneumonia in children) and circulatory diseases.³⁻⁶ Factors such as distance, isolation, lower incomes, poor educational opportunities, meagre housing, minority population status, and lack of services all exacerbate health inequality.⁷

The remainder of the populations living in remote communities share a number of common features. They tend to be predominantly male, usually consisting of young, fit, healthy, transient workers, who often take risks, work with machinery and present late when suffering from non-acute illness. Work-related accidents and serious infectious diseases can be common.

One unique remote transient population is the group of 14,000 scientists, tourists and adventure seekers from eighteen nations who visit Antarctica each year by ship, yacht or aeroplane.⁸ The most common medical conditions are generally trauma (which can be serious and require evacuation) and insomnia (which is endemic during periods of 24-hour sunshine).⁸

Other remote populations include Australian Defence Forces (ADF) personnel and the populations served by them. They can include people who require treatment for trauma-related conditions caused by war, natural disaster, or terrorism, or need essentials such as food, water and shelter. While humanitarian assistance was traditionally secondary to the ADF's military missions,⁹ the past decade has seen an increasing number of primarily humanitarian missions. Therefore, ADF doctors have been required to diagnose and treat a far wider range of medical conditions, especially in the areas of women's and children's health and tropical medicine.^{9, 10}

3.3 Access to medical services

Remote areas are characterised by limited access to all services, including medical services.¹¹ The medical services available in these populations are often provided by health professionals other than doctors. Therefore, a number of unique medical services have emerged, including:

- tele-health
- fly-in fly-out medical, emergency, evacuation and primary care services
- Indigenous primary health care services for discrete, very remote Indigenous communities, usually provided by remote area nurses and Indigenous health workers (with medical support via the telephone)
- Aboriginal Medical Services, which are community controlled and provide primary health care services to largely Indigenous populations
- small communities with clinics and small hospitals with no full time Medical Officers on site
- mining health services
- bush nurses posts, and
- primary care services provided by medical practitioners based in remote, predominantly non-indigenous communities on islands, ships, expeditions, or in the ADF.¹²

3.4 Defining remote medical practice

Several definitions have been developed to describe 'remote health'¹³ and 'remote practice'.² Wakerman¹³ offers the following working definition of 'remote health':

Remote health is an emerging discipline with distinct sociological, historical and practice characteristics. Its practice in Australia is characterised by geographical, professional and often, social isolation of practitioners, a strong multidisciplinary approach, overlapping and changing roles of team members, a relatively high degree of GP substitution and practitioners requiring public health and emergency and extended clinical skills. These skills and remote health systems need to be suited to working in a cross-cultural context, serving small dispersed and often highly mobile populations, serving populations with relatively high health needs, a physical environment of climatic extremes, and communications environments of rapid technological change.

The following key features differentiate remote medicine from urban or rural general practice:

1. *Employment* – Remote doctors are usually employed by government and non-government organisations rather than in a private practice. They usually share their workloads with other doctors from that organisation. They are often highly mobile and have a high community profile.
2. *Isolation* – Remote medical practice is isolated, with limited sophistication of medical care and access to peers. It often occurs in extreme conditions – geographically, climatically, professionally, personally, environmentally, politically and culturally. Doctors may also fly-in and fly-out for a particular episode of patient care.
3. *Tele-health* – Remote doctors are often required to provide their patients with diagnostic and management advice over the telephone, radio, satellite and internet networks or other electronic devices/means.
4. *Increased clinical acumen* – Remote doctors require a higher level of clinical acumen to diagnose and manage illness where there is often an absence of pathology, radiology and the other usual clinical diagnostic support and specialist services, so the ultimate responsibility lies with the remote doctor.

5. *Extended practice* – Remote medical practice extends across primary, secondary and tertiary levels of care and requires novel methods of practice, different treatment protocols, and innovative implementation approaches. Remote doctors can be required to undertake a range of advanced procedural practices which would usually be reserved for specialists in urban or rural contexts (e.g. obstetrics, surgery, pathology, dentistry). Doctors and nurses may also be required to perform tasks usually undertaken by other healthcare workers, such as paramedics, vets, government medical officers, nurse practitioners, ambulance officers and community aid workers.
6. *Cross-cultural* – Remote doctors often work with marginalised populations with poorer health status, different worldviews and different cultural understandings of health.
7. *Multidisciplinary* – Remote medicine is multidisciplinary, with each health professional performing more advanced and extended roles than those normally found in urban or rural practice: physician/medical assistant, nurse practitioner, Remote Area Nurses and Indigenous health / refugee worker. These health professionals must work in teams to be effective, and their role boundaries are often blurred.
8. *Public health and security* – Remote medicine occurs in environments where it is critical to have a strong understanding of public health and an ability to use a population health approach. The doctor will often take on a leadership role in this regard. Also, it can be unavoidable in remote communities that the doctor will develop social relationships with patients, or may be required to provide medical care for friends, family, staff and colleagues. Added to this, staff turnover is usually very high. For these reasons, patient information/records security and patient confidentiality issues are paramount.

3.5 Need for appropriate training

There is a considerable gap between undergraduate education and the advanced and extended role of all health professionals in remote areas.^{14,15} Remote doctors require a broader and deeper range of knowledge and skills than their urban and rural counterparts. This is due to a combination of factors including poorer patient health status, poorer patient educational preparation, the diverse range of service providers and the need to use a multi-professional primary healthcare approach. Advanced skills are required in areas such as public health, infectious disease, environmental health, emergency, retrieval and disaster medicine and cultural awareness.

The *National Aboriginal Health Strategy* in 1989 and the *Royal Commission into Aboriginal Deaths in Custody* in 1991 highlighted the educational needs of doctors, nurses and other health professionals in areas where Aboriginal and Torres Strait Islander people are concentrated. In particular they emphasised the need for education in cultural awareness, primary health care, and the health conditions of Indigenous people.¹⁶

The need for appropriate training was acknowledged by the Commonwealth Department of Health and Ageing in 1999, when funding was provided for the *Pilot Remote Vocational Training Scheme (RVTS)* – a joint initiative of the Australian College of Rural and Remote Medicine and the Royal Australian College of General Practitioners. The RVTS, as it is now known, continues to provide remotely located candidates throughout Australia with a supported vocational training program via distance education and remote supervision.

This curriculum has been developed with these factors in mind

4. Learning abilities

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

The seven 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 care in the hospital setting
3. respond to medical emergencies
4. apply a population health approach
5. address the health care 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 include and build on the abilities, knowledge and skills in the ACRRM Primary Curriculum.

While there are generic abilities, knowledge and skills required for working in remote communities, there are also specific skills sets required to match individual community or service needs. It is expected that the registrar gains a good understanding of their community and develops appropriate specific abilities, knowledge and skills.

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 detailed/comprehensive problem-focussed physical examination relevant to clinical history and risks, epidemiology and cultural context
- 1.4 Use specialised clinical equipment as appropriate and available in the community for further assessment and interpret findings
- 1.5 Order and/or perform diagnostic tests where diagnostic resources are limited 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 Diagnose and manage conditions that are common or important in the remote community
- 1.8 Communicate findings of clinical assessment effectively and sensitively to the patient and/or carer
- 1.9 Formulate a management plan where medical resources are limited in concert with the patient and/or carer, judiciously applying best evidence and the advice of expert colleagues
- 1.10 Identify and manage co-morbidities in the patient and effectively communicate these to the patient and/or carer
- 1.11 Establish, oversee, organise and manage chronic disease systems in remote communities
- 1.12 Ensure safe and appropriate prescribing of medications and treatment options in the clinical and remote context
- 1.13 Manage uncertainty and the need to evaluate the risks versus the benefits of clinical decisions
- 1.14 Refer, facilitate and coordinate access to specialised medical and diagnostic and other health and social support services
- 1.15 Provide and/or arrange follow-up and continuing medical care

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 Manage admission of patients to hospital in accordance with institutional policies
- 2.2 Develop, implement and maintain a management plan for hospitalised patients in concert with the patient and/or carer
- 2.3 Apply relevant checklists and clinical management pathways
- 2.4 Monitor clinical progress, regularly re-evaluate the problem list and modify management accordingly
- 2.5 Maintain a clinically relevant plan of fluid, electrolyte and blood product use with relevant pathology testing
- 2.6 Order and perform a range of diagnostic and therapeutic procedures as appropriate and available
- 2.7 Maintain timely and accurate patient documentation in hospital records including drug prescription and administration
- 2.8 Communicate effectively with the health care team, patient and/or carer including effective clinical handover
- 2.9 Recognise and respond early to the deteriorating patient
- 2.10 Anticipate and judiciously arrange safe patient transfer to other facilities, considering clinical indications, service capabilities, patient preferences, transportation and geography
- 2.11 Undertake early, planned and multi-disciplinary discharge planning
- 2.12 Contribute medical expertise and leadership in a hospital team
- 2.13 Provide direct and remote clinical support and collaboration to nurses, junior medical staff and students
- 2.14 Recognise, document and manage adverse events and near misses
- 2.15 Participate in institutional quality and safety improvement and risk management activities
- 2.16 Perform government medical officer responsibilities as per relevant protocols as required

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 Stabilise critically ill patients and provide primary and secondary care
- 3.3 Provide definitive emergency resuscitation and management across the lifespan in keeping with clinical need, own capabilities and local context and resources
- 3.4 Perform required emergency procedures
- 3.5 Stabilise, prepare, evacuate or retrieve critically ill patients when needed
- 3.6 Demonstrate resourcefulness in knowing how to access and use available resources
- 3.7 Communicate effectively at a distance with consulting or receiving clinical personnel
- 3.8 Coordinate or participate in disaster planning and implementation of disaster plans, and post-incident analysis and debriefing
- 3.9 Provide inter-professional team leadership in emergency care that includes quality assurance and risk management assessment

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 Analyse the social, environmental, economic and occupational determinants of health that affect the community burden of disease and access to health-related services
- 4.2 Analyse the health status and epidemiology of the remote community
- 4.3 Apply a population health approach that is relevant to the clinical practice profile
- 4.4 Integrate evidence-based prevention, early detection and health maintenance activities into practice at a systems level
- 4.5 Provide continuity and coordination of care for own practice population
- 4.6 Evaluate quality of health care for practice populations
- 4.7 Fulfil reporting requirements in relation to statutory notification of health conditions
- 4.8 Access and collaborate with agencies responsible for key population health functions including public health services, employer groups and local government
- 4.9 Participate as a medical advocate in the design, implementation and evaluation of interventions that address determinants of population health

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 Communicate effectively and in a culturally safe manner, using interpreters, key community contacts and networks as appropriate
- 5.3 Reflect on own assumptions, cultural beliefs and emotional reactions in providing culturally safe care
- 5.4 Apply principles of partnership, community ownership, consultation, capacity building, reciprocity and respect to health care delivery, health surveillance and research
- 5.5 Harness the resources available in the health care team, the local community and family to improve outcomes of care
- 5.6 Work with culturally diverse and disadvantaged groups to address barriers in access to health services and improve the determinants of health

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 Maintain appropriate professional boundaries and conduct
- 6.3 Identify own strengths, values and vulnerabilities in *maintaining a personal and professional balance in a remote context*
- 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 Undertake sterilisation and infection control measures in the remote context
- 6.8 Demonstrate commitment to teamwork, collaboration, coordination and continuity of care
- 6.9 Understand and respect for the roles of all other health care professionals
- 6.10 Undertake the extended clinical role required in a remote community context – including those undertaken by a pharmacist, nurse, vet, advocate and medical specialist – and refer appropriately.
- 6.11 Contribute to or lead the management of human and financial resources and projects within a health service as appropriate
- 6.12 Work within relevant national and state legislation and professional and ethical guidelines
- 6.13 Provide accurate and ethical certification when required for sickness, employment, social benefits and other purposes
- 6.14 Manage, appraise and assess own performance in the provision of medical care for patients
- 6.15 Recognise own limitations and know when, how and where to refer appropriately
- 6.16 Develop and apply strategies for self-care, personal support and caring for family
- 6.17 Teach and clinically supervise health students, junior doctors and other health professionals
- 6.18 Engage in continuous learning and professional development
- 6.19 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 Diagnose and manage a remotely located patient over the telephone or radio
- 7.3 Provide effective clinical care when away from ready access to specialist medical, diagnostic and allied health services
- 7.4 Arrange referral to distant services in concert with the patient and/or carer considering the balance of potential benefits, harms and costs
- 7.5 Provide direct and distant clinical supervision and support for other rural and remote health care personnel
- 7.6 Use information and communication technology to provide medical care or facilitate access to specialised care for patients
- 7.7 Use information and communication technology to network and exchange information with distant colleagues
- 7.8 Drive a four-wheel-drive passenger vehicle competently or other transportation as relevant to setting
- 7.9 Respect local community norms and values in own life and work practices
- 7.10 Identify and acquire extended knowledge and skills as may be required to meet health care needs of the local population

6. Definition of terms

<p>Sstabilise, prepare, evacuate or retrieve including</p>	<ul style="list-style-type: none"> • familiarisation with local procedures and key contacts for aeromedical transfers • performing acute management and triage • ability to maintain the patient during retrieval, including understanding of altitude physiology and stabilisation • improvisation and novel methods of medical care • conducting a risk management assessment • managing logistical and resource considerations • accessing a specialist network and environment • lighting an airstrip at night and checking the airstrip • understanding weather reports and providing these to retrievers.
<p>Health status includes reference to:</p>	<ul style="list-style-type: none"> • demographic information – age, gender, cultural groupings, population, first language, traditional health beliefs and practices • geographic issues that impact on health status – access to food supply, employment status, access to services, social systems, leaders, policy, level of education and community wealth.¹⁸
<p>Epidemiology of remote communities, including:</p>	<ul style="list-style-type: none"> • patterns and prevalence of disease • public health issues, infectious diseases and their spread.
<p>Advocate on behalf of remote communities, including:</p>	<ul style="list-style-type: none"> • understanding of its cultural, social, political and familial contexts • talking to government and making submissions to government agencies • administration and health care planning • adopting a direct advocacy role where appropriate • participating in relevant working parties and committees • being multi-skilled and community-aware • undertaking an educational role. For instance, empowering your community and training staff and support colleagues to encourage their continued service.
<p>key community contacts and networks as appropriate</p>	<ul style="list-style-type: none"> • acknowledging the role of the local/ permanent ATSI health workers and the critical nature of their input.
<p>Maintaining a personal and professional balance in a remote context including</p>	<ul style="list-style-type: none"> • dealing with boundary issues, especially when caring for patients who might also be friends, family, or colleagues • showing an ability to fill multiple roles, such as professional colleague, friend, confidant, manager, parent, administrator, doctor • being critically self-reflective, with a demonstrated capacity to learn from mistakes through reflection and feedback • undertaking critical incident debriefing as required • dealing with ethical dilemmas of isolation and community enmeshment, especially following a traumatic incident or natural disaster. • plan breaks for recreational and professional development leave • seeking professional assistance and support when required
<p>Diagnose and manage a remotely located patient over the telephone or radio</p>	<ul style="list-style-type: none"> • assessing the capabilities of the person with the patient and ascertaining their understanding of the problems and the logistics • taking a comprehensive history including where language may be a communication barrier • giving appropriate instructions to nurses, Aboriginal health workers, other healthcare workers, and people with no medical training • assessing the logistics and resources involved in managing, or stabilising and transporting the patient if required • referring the patient appropriately as per protocols.

7. Knowledge and skills

Essential knowledge required

Public health issues relevant to remote communities, including:

- infrastructure, public health surveillance and procedures
- disease control initiatives, environmental health issues
- water supply, sewerage systems, water testing
- power supply and generator maintenance, and
- triage and the mortuary
- occupation and personal health and safety issues relevant to remote communities, including:
 - occupational medicine issues, and
 - personal safety issues and security

Links between social factors and their effects on the health outcomes in a particular community. This includes:

- the impact of poverty, nutrition, housing, education and employment opportunities, family relationships, social support, transport, and control over one's life, and
- the Barker hypothesis and health outcomes in adulthood.
- Principles of ethical practice in a remote community, including:
- respecting different cultural frameworks for determining ethical behaviour¹⁸
- understanding the ethical principles underlying the care of chronically ill patients in remote practice – informed consent, confidentiality, autonomy and issues associated with dying
- respecting a patient's right to refuse, or vary treatment, and
- understanding local issues that might impact upon the decision to treat a person locally or refer.

Nature of remote communities, and of medical practice in these environments, including:

- sociology of remote communities
- treating self, family, pets and those you know and work with
- having a greater responsibility of care
- using different protocols appropriately
- management skills and professional networks, and
- strategies for reducing professional and personal isolation and burnout.
- Protocols for establishing a donor panel to use in an emergency, including managing a walk-in blood bank to take blood by donation.
- How to arrange for locum cover for planned leave and emergencies.

Essential skills required

Competent and independent performance of the procedural skills listed in the Primary Curriculum procedural skills logbook and those skills specific to individual remote community or type of health service.

8. Teaching and learning approaches

The unique aspects of remote medical practice offer challenges for standard teaching and learning approaches. Therefore more innovative and practical approaches may be required. One of the key features of remote medical practice is that the majority of remote doctors are employed by an organisation, as opposed to being solo practitioners in private practice. The majority of these organisations conduct in-house professional development and continuing medical education programs, in which candidates are required to participate. These offer specific teaching and learning opportunities.

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.
- *In-house professional development programs* – provided by the registrar's employer organisation(s)
- *Academic study*- University courses or programs relevant to the curriculum
- *Small group tutorials* – These may be face-to-face, via videoconference or using online tele-tutorial technology.
- *Face to face education meetings* – These may be linked with regional training providers, undertaken by teleconference or video conference, or opportunistically through relevant conferences.
- *Distance learning modes* – These are available via the internet, using ACRRM online learning
- *Self-directed learning activities*

9. Supervision and support

Supervision offers challenges for remote medicine posts, as candidates may be in physically different locations to their supervisors, possibly mobile, or even in a different country. A range of flexible approaches are needed to deliver this supervision over a diverse and challenging range of posts.

Candidates undertaking AST in Remote Medicine will require specific clinical, educational/ academic and personal support supervision arrangements. This will require:

1. *Specialist Supervisor/s* to fulfil the following roles:
 - A doctor who is overall responsible for the academic supervision of the candidate, and assists the candidate with the remote medicine project.

The academic supervisor will hold an academic tertiary qualification.

- A doctor who is overall responsible for the clinical supervision of the candidate and provides supervision as appropriate to the candidates experience and stage of training.

The clinical supervisor may be an ACRRM accredited supervisor for Primary Rural and Remote training or a doctor who holds an appropriate qualifications and experience relevant to the clinical environment.

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.

10. Assessment

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

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

Formative tasks:

- Formative remote medicine supervisor feedback reports – at 6 months
- Formative mini Clinical Evaluation Exercise (*miniCEX*) – minimum 5 consultations

Summative tasks:

- Summative remote medicine supervisor feedback reports – at 12 months
- Remote medicine research or community health project – a substantial project which addresses an area of need in the local community.

10.1 Remote medicine supervisor feedback reports

An Academic Supervisor report is required to be submitted by the candidate with the project proposal and with the final written work for the project. The supervisor report is initiated by the candidate. The candidate completes their section first and then the supervisor.

The Clinical Supervisor will continue to submit 6 monthly supervisor reports as required during Primary Rural and Remote Training.

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:

<http://www.acrrm.org.au/training-towards-fellowship/reporting-and-assessments>

To assist candidates and assessors in this process, an online training module is available on the College's online learning platform available from www.acrrm.org.au.

10.3 Remote medicine research or community health project

The Remote Medicine project is a summative task which must be completed satisfactorily in order to pass the advanced specialised training in Remote Medicine.

Candidates are required to enrol in the AST project at the beginning of the AST year. Enrolments are submitted at <http://www.acrrm.org.au/training-towards-fellowship/reporting-and-assessments/dates-and-enrolment>.

The project must:

- be original work done by the registrar
- address key learning objectives from the Remote Medicine curriculum
- have gained support/approval from the employer, academic supervisor, medical educator and ACRRM
- have gained ethics approval or have written confirmation from the Censor in Chief that it is not required (see [National Statement on Ethical Conduct in Human Research](#)).
- demonstrate clear consideration of remote medicine principles and
- demonstrate the registrar's in depth understanding of the field chosen.

Options for the project include, but are not limited to:

- development of a practical resource – e.g. funding or accreditation submission, chronic disease register
- a local disease prevention or health promotion project – e.g. clinical audit of practice against protocols, community burden of disease survey
- a research project
- development of a health promotion web page, and / or
- development of an interactive computer program.

Completed projects must include submission of a piece of assessable written work of approximately 4000–5000 words in length. The academic standard expected for a completed project is at or near Masters Level.

The written submission must include:

- the projects aim/question
- the projects value or importance
- that appropriate permissions were gained
- a critique of the relevant literature
- the methodology used in the project
- interpretation of results
- a discussion of major findings
- an evaluation of success
- a sound conclusion and
- recommendations for further work.

The completed project must be submitted to ACRRM for assessment and will be graded on a pass/fail basis. If a project is graded as a fail the candidate is able to make improvements and resubmit for regrading. This is recorded as a second attempt. Candidates who do not receive a pass grade after three attempts are reviewed to determine if they are permitted to make a fourth attempt.

Candidates are strongly encouraged to share their project through:

- publication in a peer-reviewed journal
- presentation in the workplace or training organisation as appropriate or
- oral presentation or poster at a conference

An AST Project Guide, AST Project Enrolment form and Academic Supervisor report form can be found at <http://www.acrrm.org.au/training-towards-fellowship/reporting-and-assessments/assessment-types/ast-assessment>

11. Potential articulation

There are several university programs that offer academic support and remote academic content aligned to the Remote Medicine AST curriculum. Candidates are encouraged to consider undertaking one of the following distance education programs or equivalent at the same time as working in a Remote Medicine AST post.

Recommended courses include but are not limited to:

- The Master of Remote Health Practice Program conducted by Flinders University's Centre for Remote Health in Alice Springs, <http://crh.flinders.edu.au>
- The Master of Public Health and Tropical Medicine conducted by James Cook University in Townsville, www.jcu.edu.au
- The Master of Rural and Remote Medicine conducted by James Cook University in Townsville, www.jcu.edu.au
- The Master of Public Health (Remote and Polar Health) conducted by University of Tasmania and Australian Antarctic Division, www.utas.edu.au
- The Master of Public Health conducted by Menzies School of Health Research in Darwin, www.menzies.edu.au

12. Learning resources

Recommended texts and other resources

Due to the diversity within the remote medicine context, core resources will vary to suit the needs of each post. The following is a list from which a registrar or supervisor can select core resources:

- ACRRM Online Learning: www.acrrm.org.au
- *UpTODATE* electronic database that provides current, published, summarised evidence and specific recommendations for patient care, www.uptodate.com
- NT CARPA Standard Treatment Manual or Qld Primary Clinical Care manual – or equivalent in each state or territory, <https://www.crh.org.au/manuals/carpa-standard-treatment-manual-6th-edition>
- CARPA Reference Manual, 4th edition, http://www.carpa.org.au/fmanual_reference.htm
- CRANA National Clinical Procedures Manual for Remote Practice, Council of Remote Area Nurses of Australia, www.crana.org.au
- CRANaplus, www.crana.org.au
- Women's Business Manual, Council of Remote Area Nurses of Australia, www.crana.org.au
- Australian Medicines Handbook, www.amh.net.au/
- *The public health bush book* volume 1+2 NT Dept of Health and Community Services, Darwin.
- Top End Division of General Practice Working Party, *Tropical Health in the Top End: An introduction for health practitioners*, Top End Division of General Practice, Darwin.
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- ACRRM Telehealth Standards, <http://www.ehealth.acrrm.org.au/>

Other useful websites include:

- Wilderness medicine www.wms.org
- Royal Flying Doctor Service www.flyingdoctor.net
- Central Australian Remote Practitioners Association www.carpa.org.au
- Centre for Remote Health, Flinders University www.crh.org.au

- Antarctic Medicine www.antarctica.gov.au
- [Medical Antarctica: SCAR/COMNAP Joint Expert Group on Human Biology and Medicine: www.medicalantarctica.com](http://www.medicalantarctica.com)

13. Evaluation

The AST in remote 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 the regional 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.

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