Advanced Specialised Training
Rural Generalist Surgery

Curriculum

Australian College of
Rural & Remote Medicine
WORLD LEADERS IN RURAL PRACTICE
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- ACRRM Primary Curriculum
- RDAA Surgical Position Paper
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1. **Background**

Completion of Advanced Specialised Training (AST) in one of ten specified disciplines is an essential component of training towards Fellowship of ACRRM. Registrars who choose to undertake an AST in rural generalist surgery must undertake a minimum of 24 months training in this area. Registrars who undertake their AST in a non-surgical discipline are required to complete a minimum 12 months full time or equivalent part time training.

Registrars may choose to undertake their AST in one of ten areas that reflect rural and remote clinical practice needs. Rural generalist surgery has been selected as one of these priority areas due to limited availability of specialist surgeons in rural and remote locations.

This Advanced Specialised Training Curriculum outlines the expected outcomes and assessment for registrars undertaking an Advanced Specialised Training post in rural generalist surgery. It builds on the basic surgery aspects of the ACRRM Primary Curriculum. The basic knowledge and skills described in the Primary Curriculum are therefore assumed as prior or concurrent learning and are not re-stated. This advanced curriculum focuses on additional surgical skills required above and beyond those stated in the Primary Curriculum.

This provisional curriculum has been developed by a working party comprised of Fellows of ACRRM and representatives of the Provincial Surgeons Association of the Royal Australian College of Surgeons (RACS).

2. **Purpose and Requirements**

2.1 **Purpose**

The purpose of this curriculum is to improve access to surgical services in rural and remote communities through increased access to rural doctors with advanced training in rural generalist surgical skills. This curriculum defines the advanced skills that will enable rural doctors to provide these services.

2.2 **Target group**

This curriculum is designed for ACRRM enrolled registrars who elect to undertake Advanced Specialised Training in rural generalist surgery. This would include registrars enrolled in the advanced surgery component of the Queensland Rural Generalist Training Program.

2.3 **Duration**

Advanced Specialised Training in rural generalist surgery requires a minimum 24 months full time or equivalent part time training. The training program will take into account other professional, personal and family needs and will offer flexibility for individuals to undertake their training on a part time basis or in two or more blocks. Registrars who choose these options will not be disadvantaged.
2.4 Potential posts

Advanced Specialised Training in rural generalist surgery must be undertaken in training posts accredited by ACRRM.

These posts would have the following features:
- able to focus on training in secondary rather than tertiary procedures
- may be either a secondary or tertiary referral hospital
- has obstetrics and gynaecology services
- has orthopaedic services
- has specialist surgical staff with sufficient expertise to supervise registrars – including general surgeons, orthopaedic surgeons and obstetric and gynaecology specialists
- able to provide access to an adequate number of suitable procedures to enable registrars to fulfill the requirements of this curriculum.

To achieve the curriculum outcomes, it may be necessary for a registrar to split his/her training between more than one post:
1. an attachment to a general surgical unit – ideally, an orthopaedic trauma attachment and an obstetrics and gynaecology attachment
2. an attachment to a surgeon in an accredited rural medical practice or rural district hospital with a surgical service.

It may also be necessary to undertake one or more short-term secondments to learn specific skills.

2.5 Prerequisites

Registrars undertaking advanced rural generalist surgical training must meet the following selection criteria:
1. satisfactory completion of the Core Clinical Training component of ACRRM Fellowship training, including a minimum of one term in surgery, one term in anaesthetics and one term in emergency medicine
2. demonstration of ACRRM Primary Curriculum requirements in surgery, anaesthetics and emergency medicine. This includes competence in performing the following basic skills:
   - cleaning and sterilisation techniques
   - insertion of tubes, drains and catheters
   - interpretation of common radiological diagnoses or evidence from other investigations
   - suturing
   - plastering and splinting
   - wound care and dressing, including minor burns and ulcers.
3. satisfactory completion of one of the following RANZCOG or RACS basic surgical skills courses (pre- or co-requisite):
   - RANZCOG Basic Surgical Skills Workshop
   - RACS Australian and New Zealand Surgical Skills Education and Training (ASSET) course
4. Satisfactory completion of the following courses (pre- or co-requisites):
   - EMST (Early Management of Severe Trauma)
   - CCrISP (Care of the Critically Ill Patient)

3. Rationale

Rural and remote communities have been disadvantaged by reduced access to appropriate local surgical services over the past 30 years. This has contributed to the increasing morbidity and mortality in rural and remote communities. Whilst metropolitan communities have access to the many surgical sub-specialties, this is not so for rural and remote communities.

Reduced access to surgical services has resulted from multiple factors including:
- increasing technology
- sub-specialisation of the surgical workforce
- reduced access to training for generalist surgeons and GP registrars, and
- absence of an appropriate specialist workforce, especially the lack of generalists in many specialties.

The absence of specialist surgical services in rural and remote areas is primarily a workforce issue and is not addressed by current programs. In order to address some of these inequities a safe and high quality procedural workforce needs to be trained and deployed. The essential needs of these communities can be addressed by mixture of generalist specialist surgeons, supported by rural generalists with an AST in rural generalist surgery. The purpose of this curriculum is to identify an appropriate scope of surgical practice which can be delivered by appropriately trained practitioners in rural and remote communities. This scope includes components of general surgery as well as components of certain surgical sub-specialties e.g. ENT and eye, gastroenterology, orthopaedics, plastic surgery, abdominal surgery. Rural and remote generalist surgeons should be supported by similarly well-trained and skilled practitioners delivering anaesthetics, emergency medicine, obstetrics and gynaecology services. These are not separate skills to be practised in isolation but a strongly inter-related cluster of skills which support and enhance each other’s competence.

4. Learning Outcomes

The learning outcomes outlined in this section are organised under the domains of rural and remote general practice. The domains are:
1. Core clinical knowledge and skills
2. Extended clinical practice
3. Emergency care
4. Population health
5. Aboriginal and Torres Strait Islander health
6. Professional, legal and ethical practice
7. Rural and remote context.

The learning outcomes describe the minimum requirements for a registrar to successfully complete Advanced Specialised Training in rural generalist surgery. As you read the following learning outcomes, your attention is drawn to the specified level of achievement for each outcome – e.g. ‘Discuss’ vs. ‘Demonstrate experience and competence’ vs
‘Demonstrate advanced skills’. These levels of achievement differentiate the requirements of this curriculum from those of the adult internal medicine component of the ACRRM Primary Curriculum.

† Procedures denoted with this superscript cross symbol are non-compulsory and may require special training or accreditation to perform. Before undertaking these procedures, the registrar must obtain specific approval from his/her supervisor.

The selection of appropriate outcomes has taken account of:
1. the range common surgical conditions likely to be encountered in most rural practice contexts
2. the potential geographical locations and work situations of registrars during training and on completion of training and the needs arising from those locations
3. the expected background and experience of registrars
4. the expected availability of surgical facilities and specialist support in most rural practice contexts.

A documented learning plan is required for all Rural Generalist Surgery AST posts. All learning plans must be lodged on www.rrmeo.com.

4.1 Domain 1. Core clinical knowledge and skills

4.1.1 Diagnostic investigations
The registrar will demonstrate advanced understanding of the selection criteria, protocols, principles and limitations of the following tests and demonstrate an ability to competently perform these tests and interpret their results as appropriate:
- lumbar puncture
- plain x-rays – interpretation for emergency purposes pending definitive reporting, including adult and paediatric chest, spine, abdomen and extremities
- CT scans – interpretation to help guide emergency treatment pending a definitive report
- emergency use of contrast
- Focussed Assessment with Sonography for Trauma (FAST) ultrasound of abdomen
- ultrasound examination of the pregnant uterus and pelvis, including diagnosis of acute emergency events such as ectopic pregnancy and ruptured viscera

4.1.2 Management planning
The registrar will demonstrate the ability to develop management plans for patients with surgical conditions, including resuscitation, stabilisation, analgesia, surgical management, post-surgical care and patient follow-up.

4.1.3 Telemedicine
The registrar will demonstrate the ability to use tele-medicine technology effectively and efficiently to upload x-rays, clinical images and other data to consult with distant specialists. This includes clinical photography skills.

4.1.4 Post-surgical care
The registrar will demonstrate the ability to provide appropriate post-surgical care, including:
• management of post-operative haemorrhage and infection
• management of incision wound abscess
• management of wound dehiscence
• identification and management of deep vein thrombosis, including appropriate preventative strategies and management for complications such as pulmonary embolus

4.2 Domain 2. Extended clinical practice

4.2.1 Differential diagnosis
The registrar will demonstrate the ability to make accurate and timely differential diagnoses in surgical presentations.

4.2.2 General management of surgical illnesses
The registrar will demonstrate competence in the knowledge and skills required for general management of surgical illnesses and complications. This includes:
• assessment of surgical patients
• fluid and electrolyte balance
• nutrition
• management of surgical bleeding and blood replacement
• management of shock
• wound management and wound healing
• management of surgical infections
• pain management – pre-emptive, operative, post-operative and emergency
• fracture/dislocation management including principles of fixation
• recovery and mobilisation planning.

4.2.3 Operative procedures
The registrar will demonstrate appropriate knowledge, experience and skills to manage common surgical procedures under minimal or distant supervision and/or in liaison with surgical colleagues if necessary.

This includes experience and competence in the following:
• skin / subcutaneous tissue:
  o suturing in most surgical situations
  o cryotherapy and cautery
  o wounds – excision and suture of simple and complex wounds, drainage and debridement of infected wounds
  o abscesses and cellulitis – drainage and packing
  o haematomatae – drainage
  o foreign bodies – removal
  o skin lesions – excision and suture, simple flaps, more complex single stage skin or myocutaneous flaps
  o skin cancer – punch biopsy, skin grafts
  o leg ulcers – dressings and diagnosis
  o burns – criteria for referral, escharotomy, simple flaps and grafts, debridement
o compartment syndrome – recognition, fasciotomy
o removal of sub-cutaneous lumps and cysts – e.g. olecranon bursae, ganglia, simple benign tumours including lipomas and neuromas

• head and neck:
  o facial injuries – suturing lacerations, airway protection, mandible stabilisation, emergency cricothyroidotomy
  o foreign bodies – removal from the nose, ear, mouth, eye
  o head injuries – resuscitation, assessment, suturing, burr hole, transfer arrangements
  o ENT emergencies – foreign body removal, epistaxis control, nasal packing, incision and drainage of quinsy
  o ear infection – incision and drainage quinsy, myringotomy†, grommets†, microscopic ear toilet†
  o eye trauma – slit lamp assessment, foreign body removal, burring of rust ring, hyphaema management

• chest
  o breast abscess or infection – drainage
  o breast lump – diagnosis, biopsy, excision of lumps†
  o chest trauma – closure of open wounds, pneumothorax management including percutaneous thoracotomy, pleural tap, drainage empyema

• abdomen
  o abdomen pain – emergency appendicectomy (not negotiable), emergency stoma, simple emergency bowel repair, strangulated or incarcerated hernia repair†, umbilical hernia repair, laparoscopy†
  o abdominal trauma – emergency laparotomy, emergency splenectomy, haemorrhage control, perforated viscus, colostomy
  o abdominal mass – diagnosis, transfer
  o GIT bleeding / altered bowel habit – gastroscopy, colonoscopy†

• groin / scrotum
  o groin / scrotal lumps
  o hernia – herniorrhaphy
  o testicular torsion – orchidopexy
  o hydrocoele – drainage and repair

• perianal / rectal
  o perianal conditions – sphincterotomy†, abscess drainage, haemorrhoidectomy, haemorrhoid banding, incision of perianal thrombosis
  o pilonidal sinus – laying open
  o rectal bleeding – sigmoidoscopy, colonoscopy†

• genitourinary
  o male circumcision
  o investigation of bleeding – cystoscopy†, biopsy†
  o voiding difficulties – urethral dilatation, suprapubic catheterisation
  o sterilisation – vasectomy

• gynaecology / obstetrics
- hysterectomy\textsuperscript{†}, laparoscopy\textsuperscript{†}
- ruptured ectopic pregnancy surgery
- emergency lower segment caesarean section\textsuperscript{†}
- dilatation and curettage
- manual removal of placenta
- bilateral tubal ligation – open or laparoscopic

- vascular
  - insertion of PICC lines
  - insertion of porta-caths\textsuperscript{†}
  - surgical management of arterial / venous ulcers, including debridement
  - compartment syndromes – fasciotomy
  - vein surgery\textsuperscript{†} / sclerotherapy\textsuperscript{†}
  - arterial trauma – arterial suture\textsuperscript{†}

- orthopaedic
  - hand and foot injuries – abscess drainage, tendon sheath drainage, carpal tunnel release\textsuperscript{†}, trigger finger release\textsuperscript{†}, basic tendon repair, emergency joint capsule / ligament repair\textsuperscript{†}, K wires\textsuperscript{†}, digital amputation
  - joint pain / injuries – joint irrigation,
  - limb fractures / dislocations – simple fracture management, closed reduction, MUA, fixation, compound fracture cleaning and management, open fixation
  - nerve entrapment – simple nerve release\textsuperscript{‡}
  - ingrown toenails – surgical management
  - simple bunion osteotomy\textsuperscript{‡}

\textsuperscript{†} Procedures denoted with this superscript cross symbol are non-compulsory and may require special training or accreditation to perform. Before undertaking these procedures, the registrar must obtain specific approval by his/her supervisor.

4.2.4 Referral and transfer

The registrar will demonstrate the ability to identify those patients requiring referral and transfer to a higher level of care, arrange appropriate transportation and provide appropriate clinical care until transport arrives, including:

- knowing their own limitations and the limitations of their nursing and support staff
- knowing when, how and where to refer appropriately
- maintaining the patient in a stable condition until appropriate transportation arrives.

4.2.5 Teamwork and leadership

The registrar will co-ordinate, 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, inpatient services and community members.
4.3 Domain 3. Emergency care

4.3.1 Triage
The registrar will outline the principles of triage and discuss their application to emergency situations.

4.3.2 Initial assessment and stabilisation
The registrar will demonstrate (in either real or simulated contexts), the ability to conduct initial assessment and stabilisation of emergency surgical patients, including:
- confident advanced life support
- recognition of the seriously unwell conscious patient
- appropriate prioritisation and sequencing of assessments, investigations and management tasks.

4.3.3 Emergency surgical skills
The registrar will discuss selection principles of and competently demonstrate the following emergency surgical skills:
- surgical airway management:
  - confident independent needle cricothyroidotomy and other percutaneous cricothyroidotomy techniques
  - competent in surgical cricothyroidotomy under supervision
- surgical vascular access:
  - difficult intra-venous placements – non-standard sites, intra-ossseous insertion, venous cutdown
  - central vein access
  - arterial line insertion
  - use of syringe drivers
  - rapid infusion techniques.
- insertion of chest drains, including:
  - management of flail chest – i.e. insertion of 2 chest drains with underwater valve and/or suction

4.3.4 Treatment complications or failure
The registrar will discuss the potential complications, including possible failure, of the surgical procedures listed in this curriculum, describe the signs and symptoms of these complications and outline appropriate rescue plans, including:
- 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, overhydration, over-anticoagulation.

4.3.5 Emergency retrieval and transport
The registrar will demonstrate advanced knowledge and skills in coordination of emergency retrieval and transportation, including:
• pre-hospital response and management
• principles of aeromedical transport
• communications – ability to effectively communicate by distance methods with retrieval staff and consulting emergency medicine specialists, including both providing and receiving treatment advice.

4.4 Domain 4. Population health

4.4.1 Community health issues
The registrar will demonstrate the ability to assess trends in surgical presentations and surgical outcomes to identify and implement appropriate prevention and management strategies for underlying community health issues. For example:
• patterns of traumatic injury presentations
• industrial risk factors – e.g. agricultural and mining industry trauma

4.4.2 Disaster management principles
The registrar will discuss the principles for disaster prevention, preparedness, response and recovery in rural and remote communities.

4.5 Domain 5. Aboriginal and Torres Strait Islander Health

4.5.1 Barriers to health care services
The registrar will discuss the barriers to surgical services for Indigenous people in the community, such as:
• access to services
• alienation by culturally inappropriate health services
• overt or structural racial discrimination
• health attitudes, beliefs and customs of Indigenous Australians regarding acute illness, injury, surgical treatment, transportation and separation from family and community
• administrative issues, such as entitlement cards and transport policies.

4.5.2 Cross-cultural communication skills
The registrar will demonstrate the ability to communicate with Indigenous community members in a culturally appropriate and medically effective manner during emergency and surgical situations.

4.6 Domain 6. Professional, legal and ethical practice

4.6.1 Legal and ethical practice
The registrar will demonstrate the ability to establish and maintain appropriate procedures and protocols and provide appropriate staff training to ensure adherence to the legislative and ethical requirements governing medical and surgical management, including:
• patient confidentiality
• informed consent
• notification of births and deaths
• advanced directives and limits of resuscitation.

4.6.2 Evidence-based and policy-based medicine
The registrar will demonstrate awareness of applicable evidence-based clinical practice guidelines and the policies, protocols and procedures of regional health services and hospitals – e.g. procedures and protocols of the regional major burns unit, government policy on circumcision.

4.6.3 Administrative and management skills
The registrar will demonstrate the knowledge and skills required to establish and maintain appropriate systems and procedures:
• team organisation and leadership skills
• awareness of the strengths and limitations of the surgical team and hospital
• co-ordination with police and other agencies
• risk management
• critical decision making and dealing with uncertainty
• storage and handling of blood products
• staff management and communication skills
• inter-professional co-operation skills
• recognition of the importance of all members of the surgical and medical teams, including recovery nursing staff, post-operative nursing staff nurses, junior doctors, wardspersons, physiotherapists and other allied health professionals.

4.7 Domain 7. Rural and remote context

4.7.1 Surgical care in non-hospital settings
The registrar will demonstrate the ability to conduct initial emergency assessment, stabilisation and time-critical surgical care in non-hospital settings, including:
• under poor weather conditions
• in non-sterile environments
• with improvised equipment and supplies
• without electricity, including electric lighting
• independently – as the sole medically trained person on the scene
• remotely – giving or receiving instructions over the telephone or radio.

5. Teaching and Learning Approaches
The emphasis for Advanced Specialised Training in rural generalist surgery will be on acquiring relevant procedural skills. 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 procedural skills. It may occur within the rural hospital 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 providers, undertaken by teleconference or video conference, or opportunistically through relevant conferences.

• **Distance learning modes** – these are available via the internet, using Rural and Remote Medical Education Online (RRMEO) and other sources.

6. **Supervision and Support**

Registrars undertaking Advanced Specialised Training in rural generalist surgery will be allocated appropriate medical, cultural, professional and personal support and supervision. This will include at least:

1. **Specialist surgeon supervisor** – a specialist surgeon who will be the primary educator and is responsible for co-development of the registrar’s learning plans.

2. **Generalist surgeon mentor** – a generalist surgeon who is working or has worked in a similar situation to the registrar and who provides pastoral care and opportunities to debrief or act as a sounding board about cultural or personal issues.

Supervision is a specific educational relationship including appraisal, assessments and performance monitoring procedures. A Supervisor is an experienced surgeon who is essentially a consultant under whom a registrar works. This role can be defined as the provision of monitoring, guidance and feedback on matters of personal, professional and educational development. This would include the ability to anticipate a registrar’s strengths and weaknesses in particular surgical situations in order to maximise patient safety.

Mentoring is concerned with making the most of human potential: it does not involve assessment or performance monitoring procedures. Mentoring refers to an ongoing supportive relationship between the registrar and an experienced rural generalist surgeon for the duration of the AST. It is a process by which the Mentor acts as an experienced guide, advisor, trusted counselor or advocate to the registrar. The Mentor assumes responsibility for helping the registrar to learn and to achieve their potential.

The supervisor/registrar and mentor/registrar relationships form the cornerstone of ACRRM’s enhanced apprenticeship model of learning.

7. **Assessment**

The assessment methods fall into the following categories:

Formative tasks:

• **Formative supervisor feedback reports** – at 6 months, 12 months and 18 months

• **Rural Generalist Surgery AST project** – written case studies and/or clinical presentations totalling approximately 2000–2500 words in length or equivalent amount of work
Summative tasks:

- *Summative supervisor feedback reports* – at 24 months
- *Rural Generalist structured viva-voce examination*
- *Rural Generalist Surgery AST procedural skills logbook*

### 7.1 Rural Generalist Surgery AST Supervisor Feedback Reports

The registrar’s supervisor will complete formative feedback reports at 6-monthly intervals (for a full-time registrar) to guide ongoing registrar learning and development. A summative feedback report will be conducted at the completion of the training term (i.e. 24 months for a full-time registrar). These reports are a collation of the feedback from staff that have supervised or worked alongside the registrar during the period of training. Feedback will be obtained from at least two consultants or colleagues, including the registrar supervisor. It is the responsibility of the supervisor to obtain this information and send to the College.

### 7.2 Rural Generalist Surgery AST Project

The Rural Generalist Surgery AST Project is a formative task designed to guide the registrar’s learning. The topic and format of the written assessment activity must be prospectively approved by the registrar’s supervisor and medical educator. The completed project must be submitted to ACRRM to demonstrate satisfactory completion.

The project must:

- address key learning objectives from the Rural Generalist Surgery AST Curriculum
- demonstrate the registrar’s ‘in depth’ understanding of the health issue(s) involved including the relevant literature
- include a piece of written work.

The options for this project include but are not limited to:

- a set of 3 case commentaries, each 600–900 words in length, each discussing a complex case encountered by the registrar, and each dealing with a different clinical content area
- development of a funding or accreditation submission
- a clinical audit of practice against protocols,
- a research project
- submission and acceptance of an article for publication in a peer-reviewed journal
- a poster presentation or PowerPoint presentation.

### 7.3 Rural Generalist Surgery AST Structured Viva-voce Examination

The Rural Generalist Surgery AST curriculum will be assessed by a Rural Generalist Surgery AST structured viva-voce examination.

The Rural Generalist Surgery AST Structured Viva-voce Examination may be delivered via videoconference or face to face.

The examiners will observe and rate each candidate across six competencies:

1. communication and interpersonal skills
2. diagnostic reasoning skills
3. flexibility in response to new information
4. management of complex problems in the rural and remote context
5. developing an appropriate management plan that incorporates relevant contextual factors
6. overall clinical competence.

7.4 Rural Generalist Surgery AST Procedural Skills Logbook
Completion of the Rural Generalist Surgery AST Procedural Skills Logbook is a summative task required for the registrar to pass their AST training term in rural generalist surgery. The registrar must demonstrate the appropriate number of each of the procedures detailed in the Rural Generalist Surgery 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.

8. Essential Resources
- Access to Rural and Remote Medical Education On Line (RRMEO) www.rrmeo.org.au
- Access to appropriate diagnostic training programs and workshops – e.g. US Training programs for FAST and Obstetrics
- Access to Surgical Skills Training Laboratories and supervised procedural hands-on skills training.
- Access to knowledge based Conferences and advanced knowledge Workshops. (Regional and Provincial RACS Conferences)

9. Evaluation
The Advanced Specialised Training curriculum in rural generalist surgery 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 registrars, supervisors, employers, medical educators from the regional training providers 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.