NATIONAL STANDARDS

FOR

AEROMEDICAL EVACUATIONS

MARCH 2004

These Standards set out the goals of the Royal Flying Doctor Service. Although the Service will use its best endeavours to ensure these goals are met, this cannot be guaranteed in every case. The Service bears no responsibility if there is at any time a failure to meet any objective contained in these Standards.

This set of standards has been agreed to by the following Sections of the Royal Flying Doctor Service of Australia: Queensland Section, South Eastern Section, Central Operations, and Western Operations.

Individual Sections may set higher standards in keeping with their operations.

CONTENTS

PROVISION OF CARE

1.1 RFDS involvement will improve patient care.

1.2 Operations will not be conducted which put RFDS crew or patient at avoidable risk.

Systems will be in place to safeguard staff and patients by the identification of occupational safety and health risks and hazards, including both medical and aviation issues.

All aspects of patient care will meet the respective State's occupational safety and health requirements.

1.3 Patient assessment, stabilisation of condition, initiation of treatment and preparation for aerial evacuation will be as thorough as possible taking into account severity and urgency of the clinical condition and local resources.

COMMUNICATION

2.1 From User to Duty RFDS Medical Officer

The Duty RFDS Medical Officer will be contactable by the user by a single telephone call, or radio call on the RFDS frequency, 24 hours a day. Backup systems will be in operation to cover all links in the communication chain.

The Duty RFDS Medical Officer will be suitably qualified to make a medical assessment of the situation over the phone or radio, offer interim advice on management of the condition, advise on preparation of the

patient for evacuation, prioritise the flight taking into account urgency and severity, and task the flight.

The Duty RFDS Medical Officer will have experience in aeromedical evacuation and local geographical, logistical and cultural issues. He/she will be aware of available and appropriate receiving hospital facilities.

2.2 Between coordinator, duty staff and user prior to departure.

Communication channels to allow rapid mobilisation of staff once a priority one flight has been tasked will be available.

All necessary information be forwarded to the flight nurse for preparation of flight, and pilot for flight planning including proposed destination, numbers and approximate weights of patients and attendants, and altitude restrictions.

2.3 Between aircraft and ground

Effective communication between the transport team, coordinator and destination will be available.

The crew will have immediate access to clinical or operational advice when required.

Coordinator, user and transport team to keep each other informed of problems or changes in plan.

Location of the aircraft will be known at all times.

2.4 Between transport team and receiving team.

Accurate and complete record of patient details to be given on transferring of patients care to receiving team senior member.

COORDINATION

3.1 At all times a nominated person will be responsible for coordination of a mission. This will involve keeping all appropriate agencies and services informed of intentions and alterations. The coordinator will have local geographical, cultural and logistical knowledge.

PRIORITY

4.1 Each mission will be tasked following assessment of the severity of the patients illness and the urgency for aeromedical evacuation. Crew mix will be appropriate for the level of care required.

4.1.1 Severity of illness

Each Section will record the severity of illness and/or the clinical resources required.

4.1.2 Urgency for Aeromedical Evacuation

A priority system of 3 levels will be used to indicate the urgency of transport.

Table - Priority System		
Priority 1	Life threatening emergency	Potentially life threatening and no adequate facilities for local management *e.g. respiratory failure, epiglottis, heart attack, meningitis, premature infant at station or nursing post* Time critical condition needing immediate specialist care *e.g. bleeding aortic aneurysm or ectopic pregnancy, acute extradural haematoma*
Priority 2	Urgent medical transfer	Urgent medical problem, some stabilisation and treatment may be possible locally but prompt transfer needed *e.g. peritonitis, severe preeclampsia, cardiac arrhythmias, preterm labour, compound fractures*
Priority 3	Elective/routine transfer	Elective inter-hospital transfer or clinic transfer. Delay of 12-24 hours or more acceptable.

4.2 Flight crews (pilots, medical officer and flight nurses) will be rostered on in sufficient numbers to allow for anticipated demand, and suitable numbers of aircraft will be maintained operational.

FLIGHT CREW

5.1 On all missions, one member of the flight crew (other than the pilot) will be a dedicated RFDS employed health professional, either flight nurse or medical officer. They will have received orientation and training in aeromedical transportation with specific training in the particular aircraft configuration, equipment and fit-out, crew safety, emergency procedures and clinical aviation medicine.

5.2 A program of orientation, ongoing education and annual/other proficiency checks will be in place.

5.3 Staff working for the RFDS would expect to have the following:

5.3.1 Medical Officer:

- Registration in appropriate State(s)
- Experience and skills in, emergency medicine, anaesthetics, and paediatrics
- EMST certification or equivalent ATLS training
- Diploma of Obstetrics or equivalent experience
- Experience in advanced cardiac life and advanced trauma life support

- including competence in the following procedural skills:
  - intubation: adults, children and neonates
  - cannulation: peripheral, central and intraosseous
  - insertion of intercostal catheter
  - lumbar puncture, suprapubic tap, pleural tap
  - closed reduction of simple fractures and dislocations
  - neonatal resuscitation

5.3.2 Flight Nurse:

- Registered as a General Nurse and Midwife in appropriate State(s)
- Significant relevant post graduate experience including critical care
- Competence in procedural skills including:
  - Advanced life support
  - Emergency management of trauma
  - IV insertion
  - Interpretation of ECG and Defibrillation

AIRCRAFT

6.1 General

6.1.1 Aircraft must meet the Civil Aviation Safety Authority (CASA) requirements for certification and operation in Australia in its appropriate flight category.

6.2 Aircraft design

6.2.1 Will be appropriate for distances involved, for the number of patients to be transferred, and for operating conditions in which they are to be used

6.2.2 Each aircraft to be specifically configured for aeromedical transportation

6.2.3 Have pressurisation capability for appropriate patients

6.2.4 Allow easy access for stretcher embarkation and disembarkation

6.2.5 Emergency exits be appropriate for all patient and crew configurations for ambulatory and non-ambulatory patients

6.2.6 Secure stowage space for medical equipment within cabin

6.2.7 Allow pilot to be sufficiently isolated from patient care area to allow safe conduct of flight

6.2.8 Have adequate lighting and internal climate control

6.2.9 Have cabin altimeter

6.2.10 Afford good access to the patient

6.2.11 Be fitted with a stretcher loading device whenever possible

6.3 Oxygen

6.3.1 Oxygen system to be adequately secured in accordance with CASA guidelines

6.3.2 Carry enough oxygen for anticipated needs including emergency de-pressurisation

6.3.3 Oxygen content gauge within easy view of medical staff

6.3.4 Suction

6.4 Power

6.4.1 Have power outlet compatible with equipment likely to be used

6.5 Communications

6.5.1 Allow crew communication with pilot, coordinator and destination. Receiving and transmitting of communication to be independent of pilot if required.

All aspects of patient care meet the respective states occupational safety and health requirements.

EQUIPMENT

Equipment required will depend on the condition of the patient, and the anticipated duration of the flight.

Systems must be in place to maintain and check equipment, and to keep drugs within expiry dates.

7.1 Minimum equipment to be carried at all times

7.1.1 Respiratory Support Equipment

- Oxygen masks, all ages
- Nebulisers
- Self-inflating bag-valve-mask manual ventilation assembly
- Suction equipment
- Airways, all ages, oropharyngeal & nasal
- Intubation set for all ages, including Magill's forceps

- Humidification and filter systems for ventilated patients
- Cricothyroidotomy set
- Pleural drainage equipment including one way valve

7.1.2 Circulatory Support Equipment

- Aneroid sphygmomanometer (not mercury containing)
- Vascular cannulae: peripheral
- IV fluids and pressure set
- Syringes and needles
- Intraosseous cannula

7.1.3 Other equipment

- Nasogastric tube and bag
- Urinary catheters and bags
- Suturing instruments and equipment
- Thermal insulation
- Splints
- Rigid cervical spine collars
- Maternity packs
- Stethoscope
- Temperature measuring device (not mercury thermometer)
- Reagent sticks to measure blood glucose

7.1.4 Pharmacological agents to manage

- Cardiac arrest
- Hypotension
- Hypertension
- Cardiac dysrhythmia
- Pulmonary oedema
- Thrombolysis
- Angina
- Sepsis
- Anaphylaxis
- Bronchospasm
- Hypoglycaemia
- Hyperglycaemia
- Raised intracranial pressure
- Uterine atony
- Adrenal dysfunction
- Narcotic depression
- Benzodiazepine depression
- Convulsions
- Agitation
- Pain
- Psychosis
- Emesis

- Electrolyte disturbance
- Premature labour
- Sedation
- Patients requiring ventilation
- Snake bite

7.1.5 Documentation

- Clinical Manual containing current protocols for management of conditions likely to be encountered.
- List of drugs carried.

7.2 Equipment to be readily available when required

- Portable oxygen supply with appropriate connectors
- Portable mechanical ventilator
- ECG monitor/defibrillator/external pacer
- Non-invasive blood pressure monitoring
- Invasive arterial pressure monitoring
- Central venous pressure monitoring
- Pulse oximeter
- Capnograph
- Spirometer
- Infant incubator
- Oxygen head box
- Oxygen analyser
- Restraints for violent patients
- Intravenous fluid infusion pump with air bubble and increased pressure alarm and fail-safe
- Syringe pump
- Spinal stretcher, lower and upper limb immobilisation splints
- Foetal heart monitor/ Doppler stethoscope
- Biochemical analysis
- 12 lead ECG

7.3 Electronic medical devices should

- Be of size and weight suitable for transport
- Have power supply that will exceed the predicted duration of the transfer
- Operate from retrieval site continually till patient delivered to hospital
- Be suitable to work in the environmental conditions to be encountered
- Be rugged and durable
- Have suitable alarms which are audible and visible in the aircraft environment

7.4 Stretcher be adjustable so patient can be sat upright

MONITORING

8.1 Will be by clinical assessment in all cases.

Pulse, blood pressure, temperature, respiratory rate, oxygen saturation and ECG will be monitored and recorded whenever indicated, at appropriate intervals.

8.2 All ventilated patients will be accompanied by a

- Medical officer and flight nurse or suitably skilled assistant
- Equipment for re-intubation and alternative means of airway management
- Separate back-up means of ventilation
- Capnograph
- Pulse oximeter
- ECG
- Spirometer

8.3 All critical care patients will be accompanied by attendants capable of monitoring the patient's condition, continuing or modifying management as necessary, and dealing with any emergencies which could be reasonably expected to occur during transport.

Additional specialist medical or nursing expertise will be utilized to assist RFDS staff where appropriate.

DOCUMENTATION

9.1 Standardised pre-hospital transport documentation and inter-hospital transport documentation will be completed for each patient transferred.

For all flights the following will be recorded:

- Date and time of initial contact
- Name and status of referring person
- Name and status of medical office taking call and tasking flight
- Patient details
    - Name, age, sex, DOB, race
    - Clinical details
    - Medication and allergies
    - Patient location

If trauma

- Nature of incident (MVA, assault, ICD-CM)
- Time of accident (day of week, time of day)

- Location of incident
- Predisposing factors

If inter hospital

- Name of referring and receiving medical officer'
- Initial advice given
- Priority of flight and patient severity
- Names of all attendants
- Time of aircraft departures and arrivals
- Cabin altitude
- Initial assessment
- Diagnostic coding using ICD coding

Inflight clinical details including

- Clinical observations appropriate to condition
- Fluid balance
- Drugs given
- Monitoring
- Notable events
- Date, times and signature

Appropriate clinical and administrative documentation be given to senior member of receiving team.

QUALITY IMPROVEMENT

10.1 There will be an appropriate and comprehensive quality improvement program in place covering all aspects of aeromedical services.

This document will also undergo a quality improvement process by having an effective date and a review date. This document will be reviewed by the Health Advisory Committee

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Reviewed by National Health Advisory Committee 2004