The MedSTAR Retrieval Model

MedSTAR’s retrieval service

The MedSTAR aeromedical retrieval service which has operated in South Australia since February 2009 delivers patients to health units according to protocols determined by the South Australian Department of Health. The service is provided by an aeromedical consultant and suitably trained retrieval teams that are on standby 24 hours a day, seven days a week.

The team composition is determined by factors including the roster and schema of MedSTAR, the number and ages of patients to be retrieved and the distance to be travelled.

Underlying this dedicated service is a support system that includes:
- training in clinical practice and aircraft safety
- an audit process of outcomes, safety, quality (including efficiency and effectiveness of the service)
- Service Standard Operating Procedures.

Retrieval and transport clinical coordination

What is clinical coordination?

Effective clinical coordination is vital to MedSTAR’s operation. Clinical coordination is the process by which specialist staff oversee the retrieval service to ensure:
- safe and efficient use of expensive transport and retrieval services,
- high level clinical advice is available,
- the patient is directed in a timely manner to the most appropriate receiving facility.

Coordination staff are clinically experienced, appropriately trained and involved in clinical governance.

The coordination system

A central coordination process facilitates early teleconferencing of the referral agency, the clinical coordinator, the retrieval team and the specialist.

When a rapid medical response is required for a time-critical pre-hospital incident, the retrieval service can be activated swiftly and coordinated with other emergency services. Knowing where key assets and retrieval teams are all the time is crucial to effective clinical coordination.

This system enhances existing retrieval activities for special groups, including patients requiring neonatal, paediatric, obstetric or specialised cardiac care.

Not all patients require transport. Of those that do, not all will require emergency retrieval and not all will require a retrieval team. Telemedicine will assist decision making and support remote and regional medical practitioners.

The coordination centre

The MedSTAR Clinical Coordination centre is co-located with the South Australian Ambulance Service Emergency Operations Centre (EOC) in Eastwood in suburban Adelaide to ensure:
- improved communication for coordinating retrieval and patient transport
- enhanced early notification and activation for primary trauma
- safe and appropriate resource utilisation and asset tracking
- streamlined patient transport.
Retrieval operations

MedSTAR has adopted a retrievalist model with the following significant structural features.

- At least three adult retrieval teams are available 24 hours a day, seven days a week for all modes of transport.
- Dedicated neonatal and paediatric retrieval teams will also be available 24 hours a day, seven days a week.
- Retrieval teams respond rapidly to primary trauma or medical care in the MedSTAR rapid response vehicle.
- Operational ‘down-time’ is structured and productive, including opportunities for education and training.
- MedSTAR has ‘surge capacity’ to cope with unexpected increased retrieval service demand.
- Retrieval equipment, team appearance, Standard Operating Procedures and competency and currency assessments are standardised.

The MedSTAR team model

Our coordination staff are clinically experienced, appropriately trained and involved in clinical governance. The team consists of a core group of highly trained doctors, nurses and intensive care paramedics who perform and coordinate frequent retrieval activities. This team model has maximum operational flexibility with a focus on innovation and integration.

Staff usually spend a dedicated six or twelve month period with MedSTAR. Many bring extensive pre-hospital and retrieval experience from overseas. We have a capacity for an additional one or two team members for training, accreditation or observational purposes. Nurses/paramedics and many retrieval consultants are permanent members of the service. Training registrars or fellows are advanced trainees from a critical care training program (Emergency Medicine, Anaesthetics or Intensive Care) or paediatric/neonatal training programs.

These staff are best placed to coordinate aeromedical transports and retrievals in conjunction with the South Australian Ambulance Service (SAAS), Royal Flying Doctor Service (RFDS) and/or Australian Helicopters.

a) Medical Retrieval clinical coordinators

Medical Retrieval clinical coordinators are a critical part of the MedSTAR team. This small group of recognised critical care specialists has extensive experience in retrieval and pre-hospital care and maintains clinical competency and receives appropriate training for their coordination role.
b) Retrieval nurse clinical coordinators
This small group of experienced and highly trained group of practitioners are experienced and highly trained and work with SA Ambulance Service Emergency Operations Centre staff to provide an integrated communication and coordination capacity for statewide advice, transport and retrieval.

c) Adult retrieval physicians
A skilled critical care physician is vital to the retrieval team as demonstrated in service models in Europe and across Australasia. Together, the team can deliver care equivalent to that in a tertiary hospital environment and may represent a ‘definitive’ requirement for the patient.

d) Adult and pre-hospital retrieval team
A small group of highly trained Intensive Care paramedics and critical care nurses work with a critical care specialist or advanced trainee (doctor) as a team of two. This blend of attributes provides maximum operational flexibility and redundancy. This integration has positive effects on team safety, performance and ultimately patient outcome.

e) Paediatric and neonatal retrieval team
A highly trained team of doctors and experienced paediatric/neonatal critical care nurses provides inter-hospital retrieval care for neonates and children.

f) Rural workforce
Most of our retrieval missions are in support of regional and remote medical practitioners. The integration of all rural and remote health practitioners into the operational, training and clinical governance activities of MedSTAR is valuable. Country Health SA (CHSA), rural GPs and Country SA Ambulance Service staff are therefore integral key stakeholders in MedSTAR.
There are significant benefits for rural health services through a combination of a single point of contact for transport, advice and retrieval activation, a rapidly responsive operational capacity and an expanded telemedicine network for clinical support.