Considerations for an aero-medical start-up

- A developing country perspective

Farhaad Haffejee
Type of Service
Type of Service

- EMS
- EMS + Rescue
- Outreach
- Outreach + EMS (+Rescue)
Service Model
Service Model

Funding Model

Insurance

Government partnership

Combination
Service Model

- Single Platform
- Dual Platform
Service Model

- Helicopter only
- Daylight Only Service
- 24 Hour Service
Service Model

- EMS Crew
  - Paramedic
  - Doctor
  - Flight Nurse
  - Combination

- Outreach personnel

- Skills Availability
Aircraft Type

- Operating environment (task suitability)
- Cargo doors for patient loading
- Pressurisation
- Landing strips for fixed wings (aircraft undercarriage & take off/landing capabilities)
- Sector distances
- Speed
Dispatch criteria in the developing world differ significantly from developed world criteria – usually much more flexible and situation dependent.

Very often – the aircraft may be the only viable means of transportation that doesn’t take more than 12 + hours.

Criteria are often based on availability of other resources, medical facility capability, distance, ease of access rather than strict patient criteria.

Very often the use of a ground ambulance will remove that resource from the community for an entire day – it may be the only ambulance in that area.
Dispatch Mechanisms

- Dispatch very often tends to be left to one or two persons – rather than specific criteria – mostly due to budget control.
- Best through coordinated Government EMS control room if available.
- Otherwise operator will need to establish a control centre.
Dispatch Mechanisms

- Flight coordination
- Flight tracking
Safety Systems

- Implementation of a safety system as required by regulations and legislation
- Aeromedical operations ranks among the highest risk activities, especially in HEMS
- Safety is a common thread that needs to run through all activities from landing strip and LZ monitoring and upkeep to continuous training and recurrency of all persons associated with the program. This is a tall order but has to form an integral part of daily operations to be effective
Safety Systems

Ensuring mission safety:

- Landing facilities
- Local knowledge (weather, alternate routes, navigation)

Flight Following:

- Local communications, airband line of sight & short range, reliance on cellphone/expensive satellite technology for communication
- Satellite tracking – very useful but NOT a replacement for confirmation that crews have landed safely (not crashed on runway), that events are running in accordance with plans, etc

Safety Audits
Quality Systems

- Quality Audits
- Clinical review Committee

There must be a good quality oversight system to ensure that best practice and patient outcomes are closely monitored.

It would be pointless having an aeromedical service with a high mortality rate or patient prognosis related to the increased risk of such a service.
Without international rules, air travel would be in chaos.
Aviation Regulations

- Part 127/135 structure (OPS)
- Part 138 (Aero medical)
- Part 43 (Maintenance)
- Part 141 (Training)
- Part 145 (AMO)
- Part 24 (Incidents/accidents/hazards)
- SA-CATS-OPS, GMR, Technical Standards
- Part 61
- Part 66
Medical Regulations

- Existence of local AvMed regulations in country of operation or receiving country.
- Health regulation
- Port Control
- Environmental Laws
- OHASA
Equipment related legislation & practicalities

- Use of portable electronic devices on aircraft
- Securing of patient and equipment
- Servicing of equipment
- Medical supplies – medication, Oxygen, cold chain perishable items, etc.
- Dependence on electrical supply – from fuel pumps to office lights to cleaning, refrigeration of medicines, charging of equipment
Training
Training Aviation

- Crew resource management (CRM)
- Dangerous Goods (DG)
- Part 138 (Air Ambulance)
- NVG
- Type Rating
- Instrument ratings
- Recurrency
- Hoist Operators
- Aviation Rescue
- Cost
- Auditing
Training Medical

- Aviation Healthcare Provider Course (AHCP) / Flight Medical Attendants Course (FMA)
- Advanced Airway Management
- Medical CRM
- Emergency medical dispatch

- ACLS/ATLS/PALS
- Refreshers
- Various refresher courses
- Cost
- Auditing
Other Considerations
Maintenance

- In house or outsourced
- Parts back-up in non-metropoles
- The higher the spec of the aircraft the more difficult this becomes!
Infrastructure

- Most appropriate location
- CAA approved
- If new, capital expenditure
- Fuel availability
- Maintenance
Operational Realities
Operational Realities

- Aeromedical operations are unique in terms of challenges:
  - A small space with high noise levels, vibration and limited communications with the patient etc can create challenges.
  - In flight complications are to be avoided at all costs. Ensure that the crew are highly trained and experienced to ensure that patients are adequately stabilised and packed etc for the flight.
Operational Realities

- Oxygen supply
- Equipment (incl spare batteries, backup ventilation devices, adequate IV access, etc)
- Fuel
- Crew & duty times
- Drug control
- Medical equipment certification & maintenance
Operational Realities

- Communications (infrastructure & language) – clinically and aviation wise
- Health Practitioners – licensed to practice in country
- Integration with existing services and resources both ground & air.
Operational Realities

Cross border work –

- customs, immigration, port health control, Foreign & Domestic affairs + navigation (no fly areas), landing clearances & fees, fuel location + cost & availability, availability of ambulances to fetch crew & equipment, insurances (medical liability, Aviation liability)
Operational Realities

- Weather
- Light
- Outreach logistics are huge & must not be underestimated
- Aircraft ‘breakdowns’
Conclusion

Unfortunately no ‘one size fits all’ solution!!!
Thank you...
farhaad@ams.org.za

086 11 MERCY / 083 789 6789