

# AN EXPEDITION INCIDENT: HUMAN AND SYSTEM FACTORS

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## BACKGROUND

Growth in adventure tourism, combined with societal expectations and insurance requirements, has increased medical expedition and event work. Practices vary significantly between companies and clinicians with no officially recognised governing body. Lessons from a major trauma during a cycle sportive identified areas where research and guidance may benefit this rapidly growing field.



## CASE

Three emergency doctors provided medical support for 100 cyclists on a multi-day charity ride across Italy. Participants alerted accompanying doctors and in-country emergency medical services (EMS) to a middle-aged female with a head injury. The first doctor remained at the front and led communications. The second doctor managed the patient with EMS intubation and aeromedical transfer. The third doctor assisted with scene and resource management including supporting the patient's friends and staff.



## ANALYSIS

All three doctors documented reflections on the day and a fortnight later during a cold debrief. They spoke with the patient's friends and family, the expedition leadership team, ground crew and the participants, noting areas for improvement.

## RECOMMENDATIONS

- When confirming emergency plans, ensure clarification on the medical advisory role description, minimum doctor ratios and company major incident plans.
- On arrival, confirm emergency plans with the local team including passport/visa/insurance locations and emergency company fund arrangements. Brief participants on who to contact in an incident and issue emergency phone numbers, ideally also attached to them in laminate.
- Doctors' mental modelling of scenarios at the most challenging locations proved invaluable along with prior knowledge of each other's skill sets.
- An understanding of the local health system is essential; yet often emergency plans are developed remotely by non-medical personnel without this insight. Ensure knowledge of X-ray, CT scan, intensive care, major trauma and cardiac intervention locations.
- Further work is required to develop international guidance and standards to optimise the quality of care and governance within this rapidly growing field.

## RESULTS

The following human and system factors influenced the care provided:

### COMMUNICATION

- 1) Rapid alerting of EMS and trip doctors - incident location shared immediately on group WhatsApp, on-call phone allocated for team doctors with an emphasis on alerting EMS first in an emergency, all emergency numbers attached to bicycles
- 2) Maintenance of communication channels - with insurance companies, company staff (in-country and remote) and patients' friends and relatives

### RESOURCES

- 1) High doctor:participant ratio with knowledge of each others' skill sets
- 2) Rapid EMS response and capabilities
- 3) Scene allowed helicopter and ambulance access
- 4) Multiple staff and a support vehicle - transport for friends, access to luggage
- 5) Small emergency medical kit kept on each doctor with extensive kit on the support vehicle due to large distances between participants
- 6) Company emergency debit card - rapidly exceeded and not replenished
- 7) Company Medical Director - discovered to only hold responsibility for pre-expedition organisation and not on-call advice

### LEADERSHIP and MANAGEMENT

- 1) Immediate role allocation of doctors following pre-organised plans
- 2) Friends transported to hospital by expedition staff with ongoing in-person support
- 3) Information collection - the doctor accompanying the patient travelled with their insurance documents, next of kin (NOK) details, company emergency contact and details of staff with patient's friends
- 4) Evaluation of trip continuation - addressed practicalities and safety of continuing the event highlighting no prior consensus on minimum doctor:participant ratios
- 5) Handover to hospital - no consensus on where duty of care ends
- 6) Activation of major incident plans via external company who focussed on media image with different priorities to event doctors relating to ongoing event safety

### SITUATIONAL AWARENESS

- 1) Recognition that we immediately exceeded our resources and capabilities
- 2) Incident photos and documentation - assisted police, hospital staff and patient
- 3) Supported patient, friends and observers during and after the incident
- 4) Awareness of medical kit location and contents
- 5) Recognition of impact on the group - doctors debriefed staff and participants and signposted to further support resources after the trip