

# Adverse event rates among mechanically ventilated patients undergoing aeromedical transfer

in the Western Cape Province,  
South Africa

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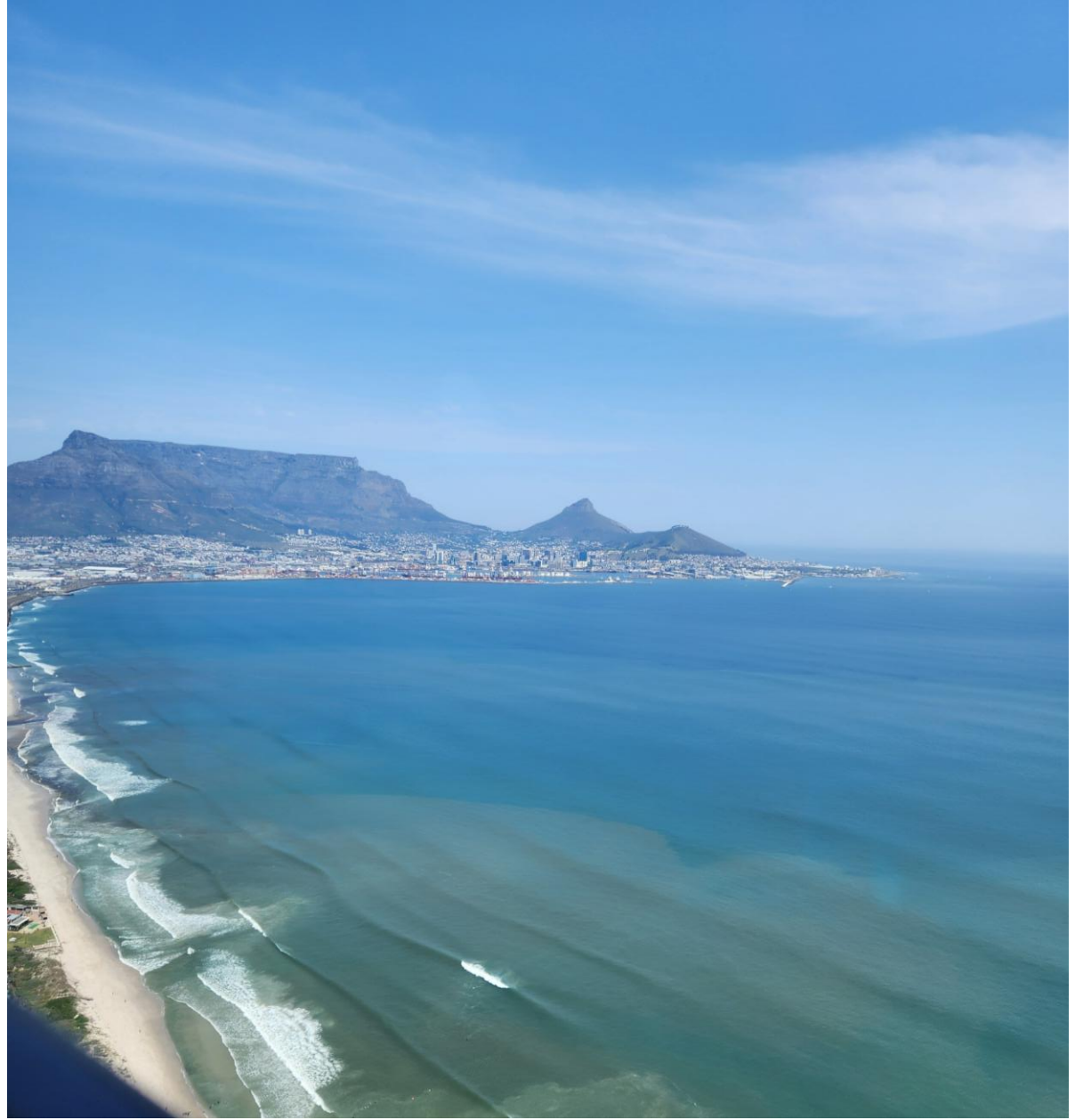
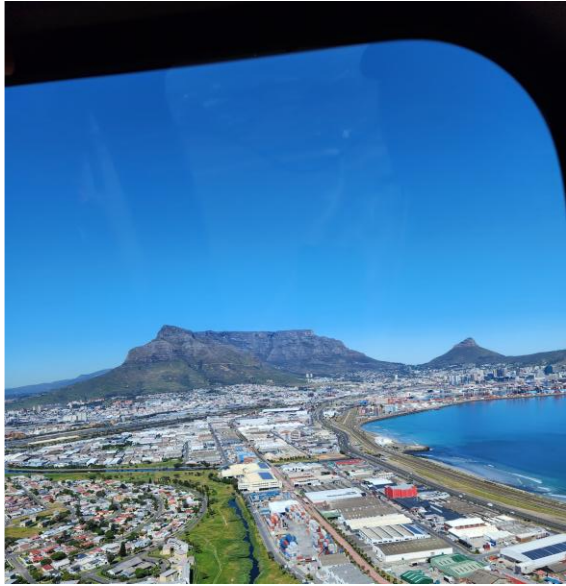
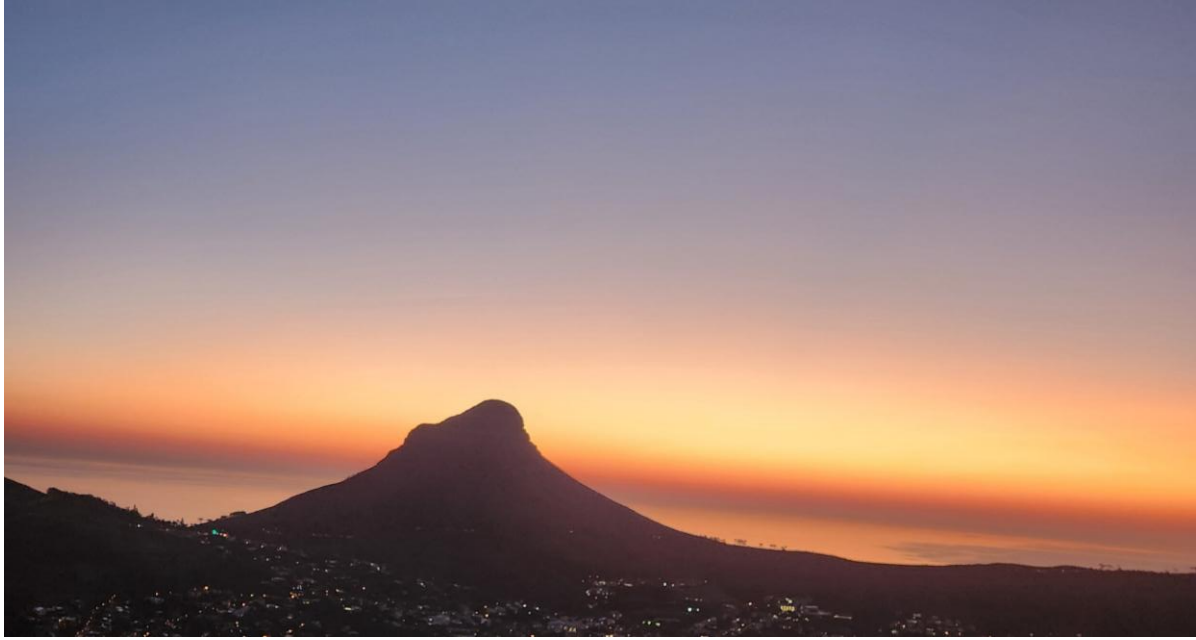
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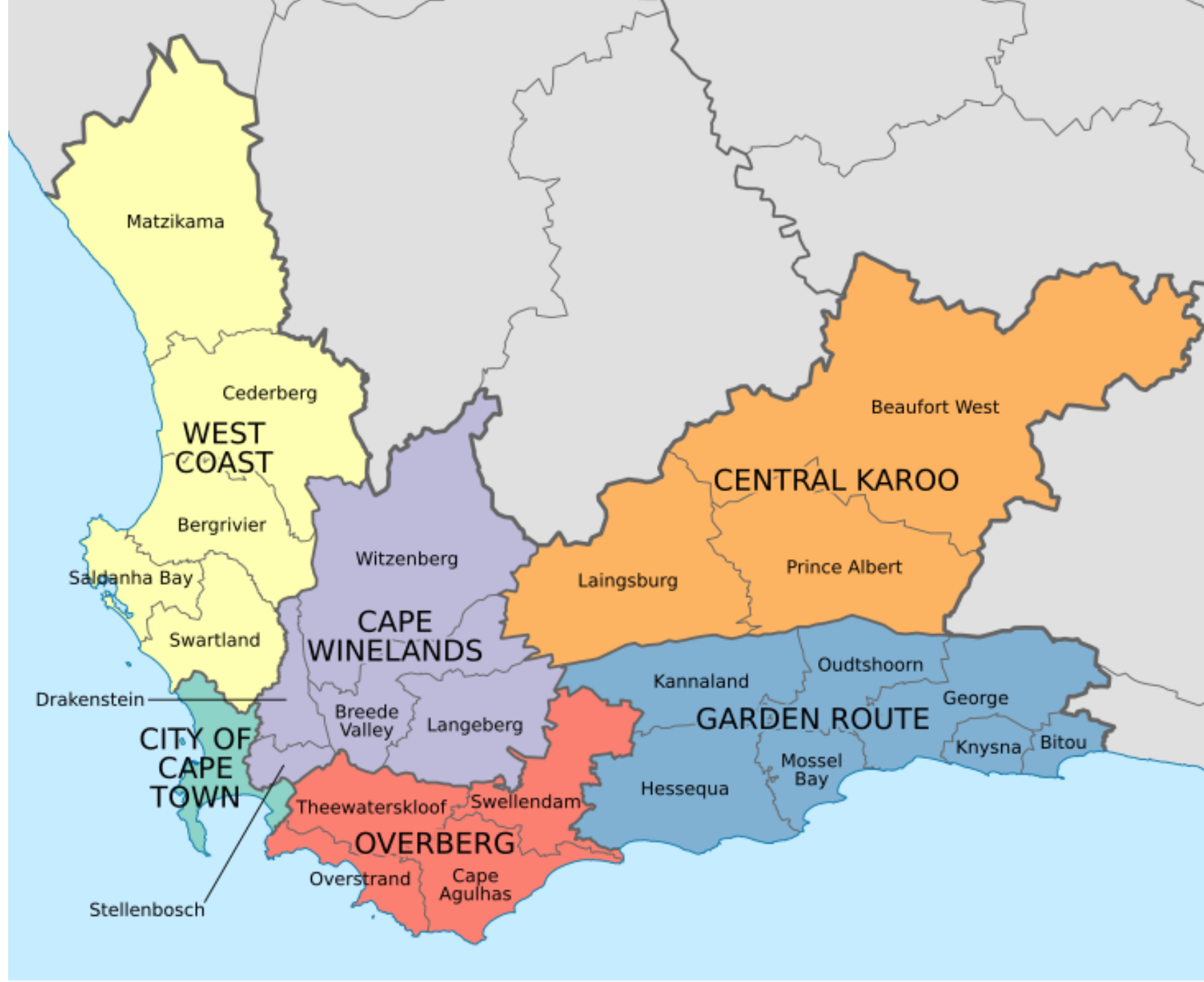
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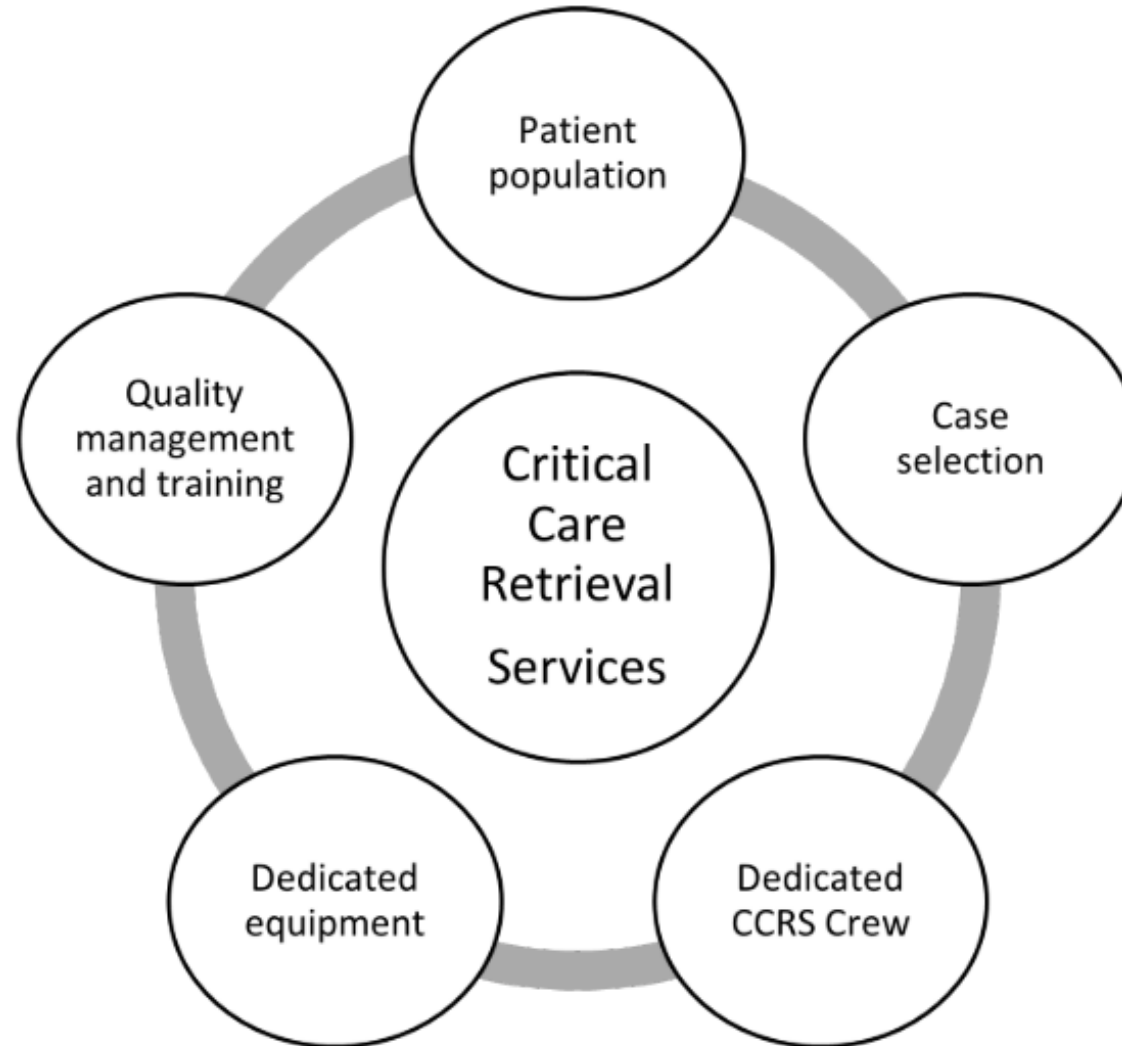


# Background

- Population of WC 7.4 million
- 2/3 in City of Cape Town (CCT)



# Critical Care Retrieval in South Africa





# Aims

Broader study: sedation and analgesia practices in the aeromedical setting.

- Adverse event rate?
- Types of adverse events?



# Methods

- A retrospective chart review of patient care records (PCRs) at an aeromedical service in the Western Cape was conducted.

## ADVERSE EVENT CLASSIFICATION

## EVIDENCE

Hypercapnia: EtCO<sub>2</sub>>45mmHg

A range of 35 – 45mmHg has been recommended in patients with TBI (Bossers *et al.*, 2023)

Hypocapnia: EtCO<sub>2</sub><35mmHg

Brain Trauma Foundation (Bossers *et al.*, 2023) (Lulla *et al.*, 2023)

Hypertension: SBP>150mmHg

Brain Trauma Foundation (Lulla *et al.*, 2023)

Hypotension: SBP<90mmHg

Brain Trauma Foundation (Maiga *et al.*, 2025) (Lulla *et al.*, 2023).

Hypoxia: SpO<sub>2</sub><90%

Brain Trauma Foundation (Lulla *et al.*, 2023)

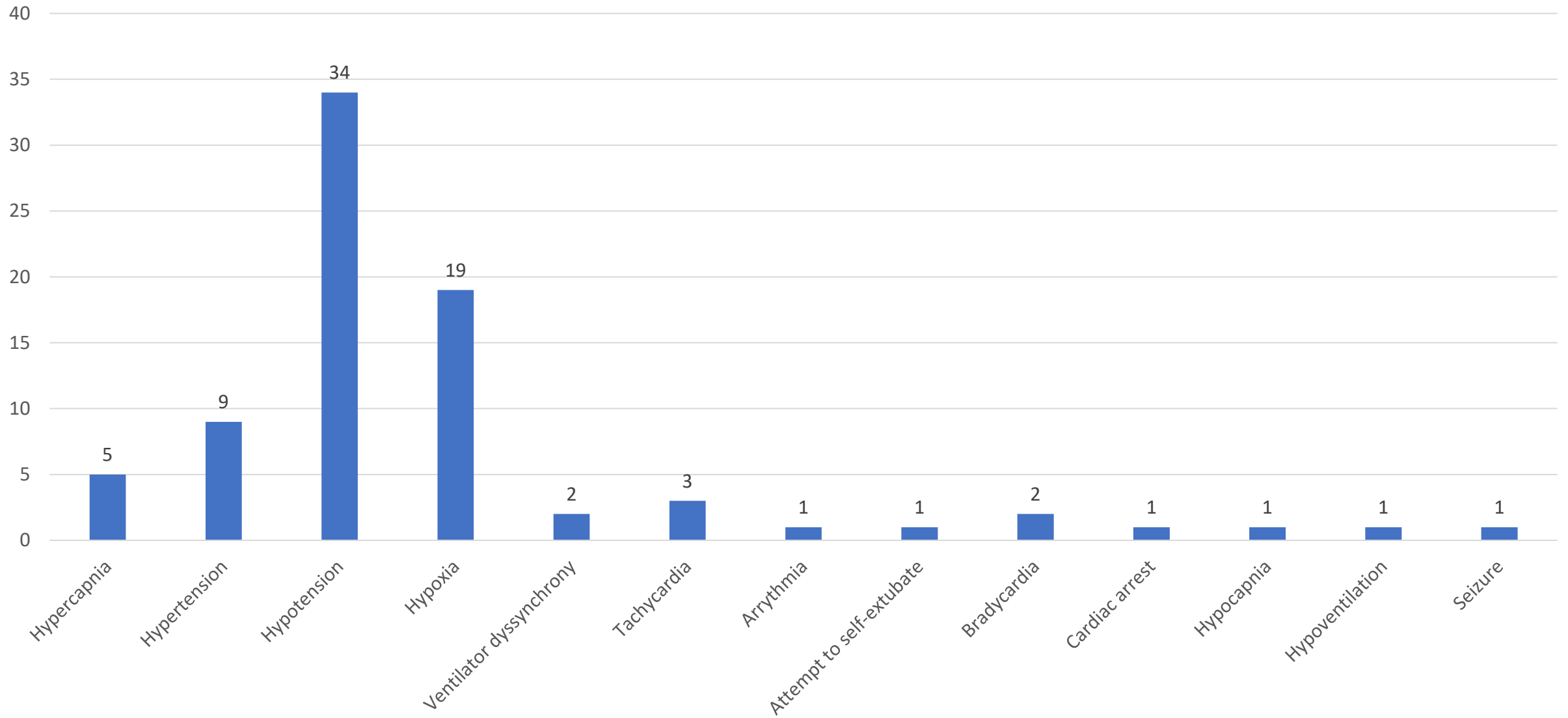
Tachycardia: HR>120

Contextually appropriate.

Bradycardia: HR<60

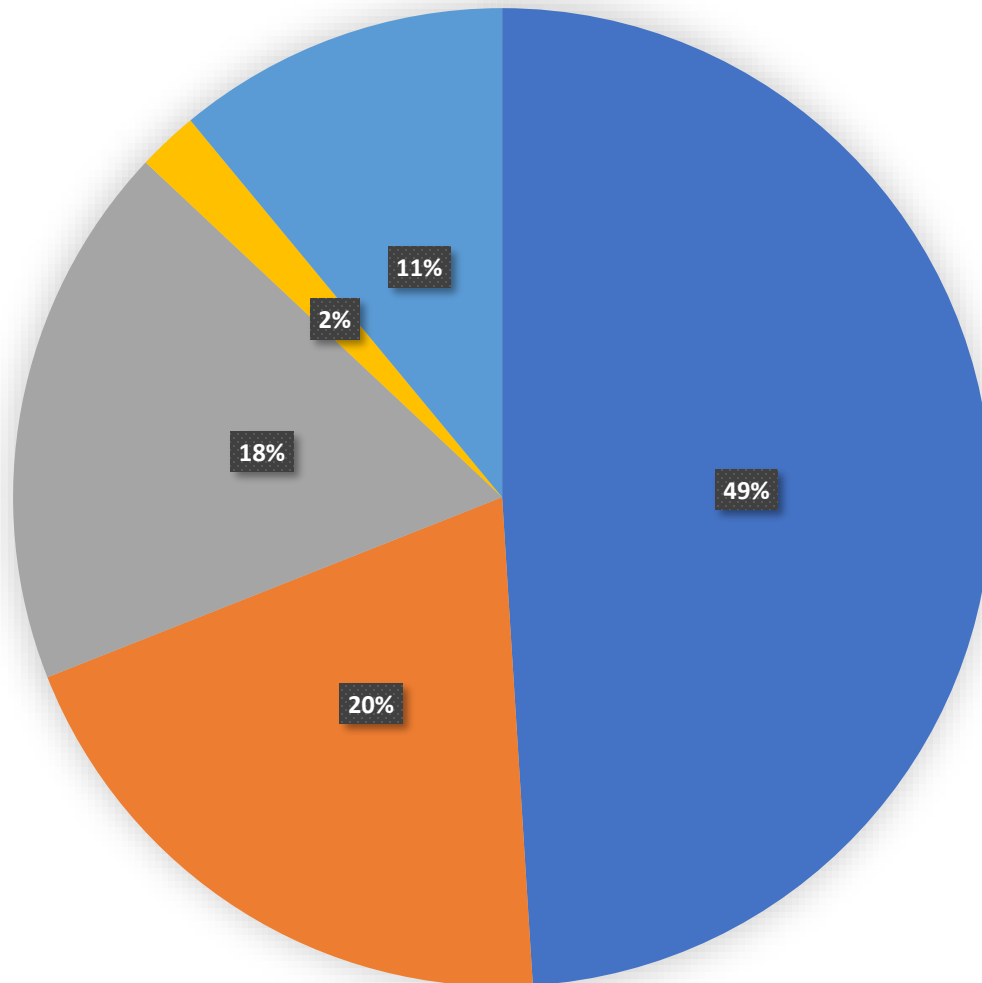
Local evidence from HEMS in South Africa (Stassen *et al.*, 2018)

# Types of Adverse Events



# Results

## Phase of IHT where AEs Occur



- While at referring facility
- While loading patient into aircraft
- During flight
- During handover
- At multiple points



# Future Research

- Phase of transfer.
- Number of interventions.
- Patient physiology score at referring facility vs at handover.
- Helicopter vs aeroplane.
- Intervention type.

# Conclusion

- Limited – data originated from a subgroup analysis.
- Guides further research.
- Useful indicator of where AEs are most likely to occur

