



TO FLY OR NOT TO FLY THE DILEMMA OF TRANSFERRING INTERFACILITY PATENTS



DR VINOD RAJ

DR CHEAH PHEE KENG

DR MUHAMMAD YAAKUB ARIFIN

**SABAH WOMENS AND CHILDREN HOSPITAL
KOTA KINABALU SABAH**

CASE SCENARIO 1



- 45 years old
- BP 160/90 mmhg
- PR 130 bpm
- Requiring urgent neurosurgical intervention

Is he fit for air retrieval ?

CASE SCENARIO 2



- 3 months old
- Intubated for severe respiratory distress
- No ICU backup in rural hospital

What would you do if you are called to retrieve this patient ?

INTRODUCTION

Aeromedical retrieval is safe

Aeromedical accident is 4.38 per 100,000 flying hours

One accident occurred every 16,721 missions

Safety of emergency medical service helicopters. [Med J Aust. 2005]

Mortality rate in flight for transferring critically ill patients is relatively low

16% patients had greater chance of survival when transported by helicopter comparing to ground transport

<http://www.modernhealthcare.com/article/20120721/MAGAZINE/120719982>

April 18 issue of the Journal of the American Medical Association

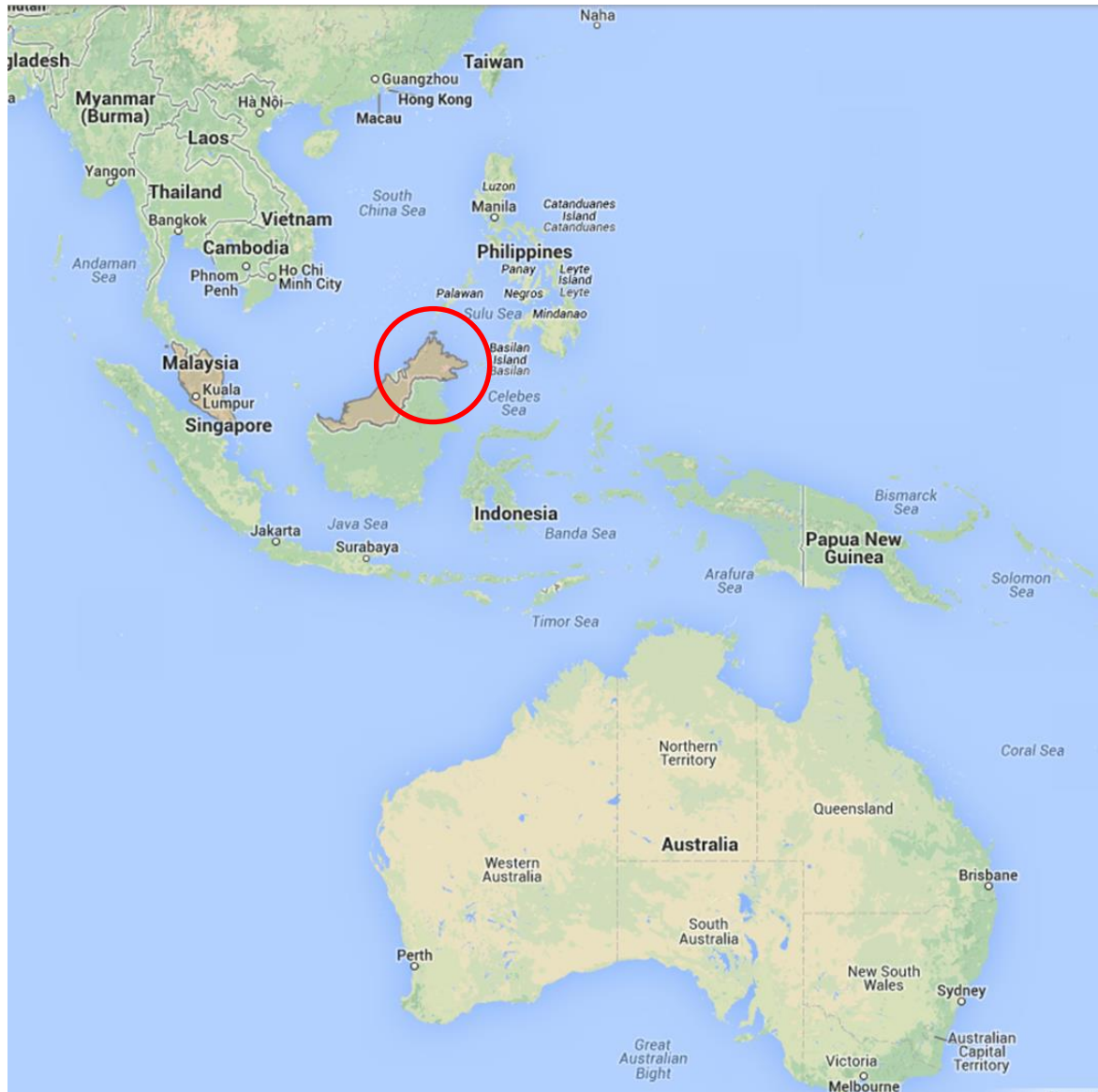
SABAH

Located on borneo island

2ND largest state in malaysia

It covers an area of 72,500 sq. kilometers

Surrounded by the South China Sea, Sulu Sea and The Celebs Sea





THE CASE



- 3 months old infant
- Cyanotic heart disease
- 1 month in PICU
- Intubated and ventilated
- On inotropics support
- Decided for corrective surgery in Kuala Lumpur by paediatric consultants

THE CASE



BP 65/48 mmhg

PR 150 bpm

SPO2 100%

IVI Dobutamine 20mcg/kg/min

IVI Dopamine 20mcg/kg/min

IVI Noradrenaline 0.1/mcg/kg/min

IVI Midamorphine 0.1mg/kg/hour

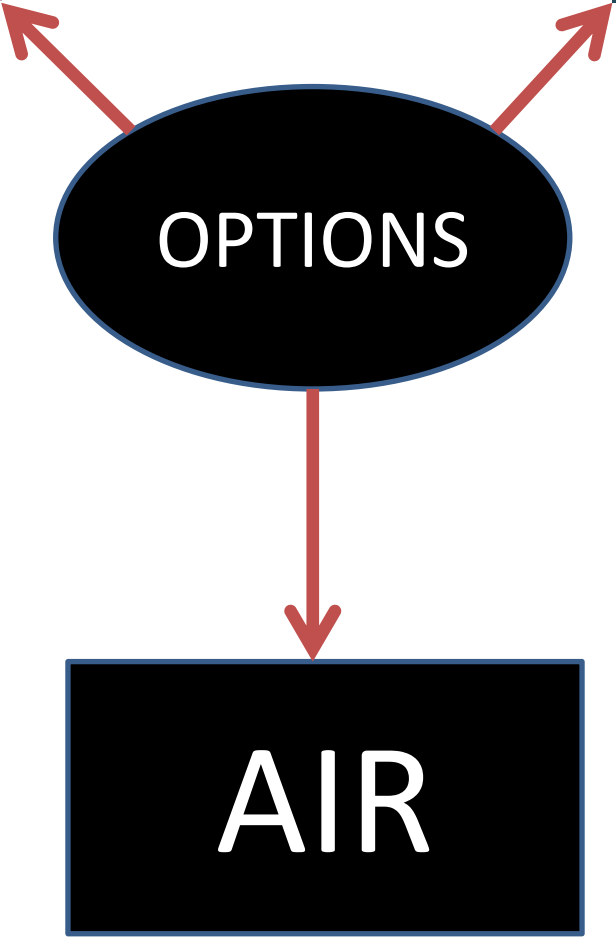
HOW TO TRANSFER ?



Kota Kinabalu-Kuala Lumpur 1621 km



Joseph Jupiol/Insight Sabah



AIR TRANSFER



Are we out of options ?

TURBOPROP C 130





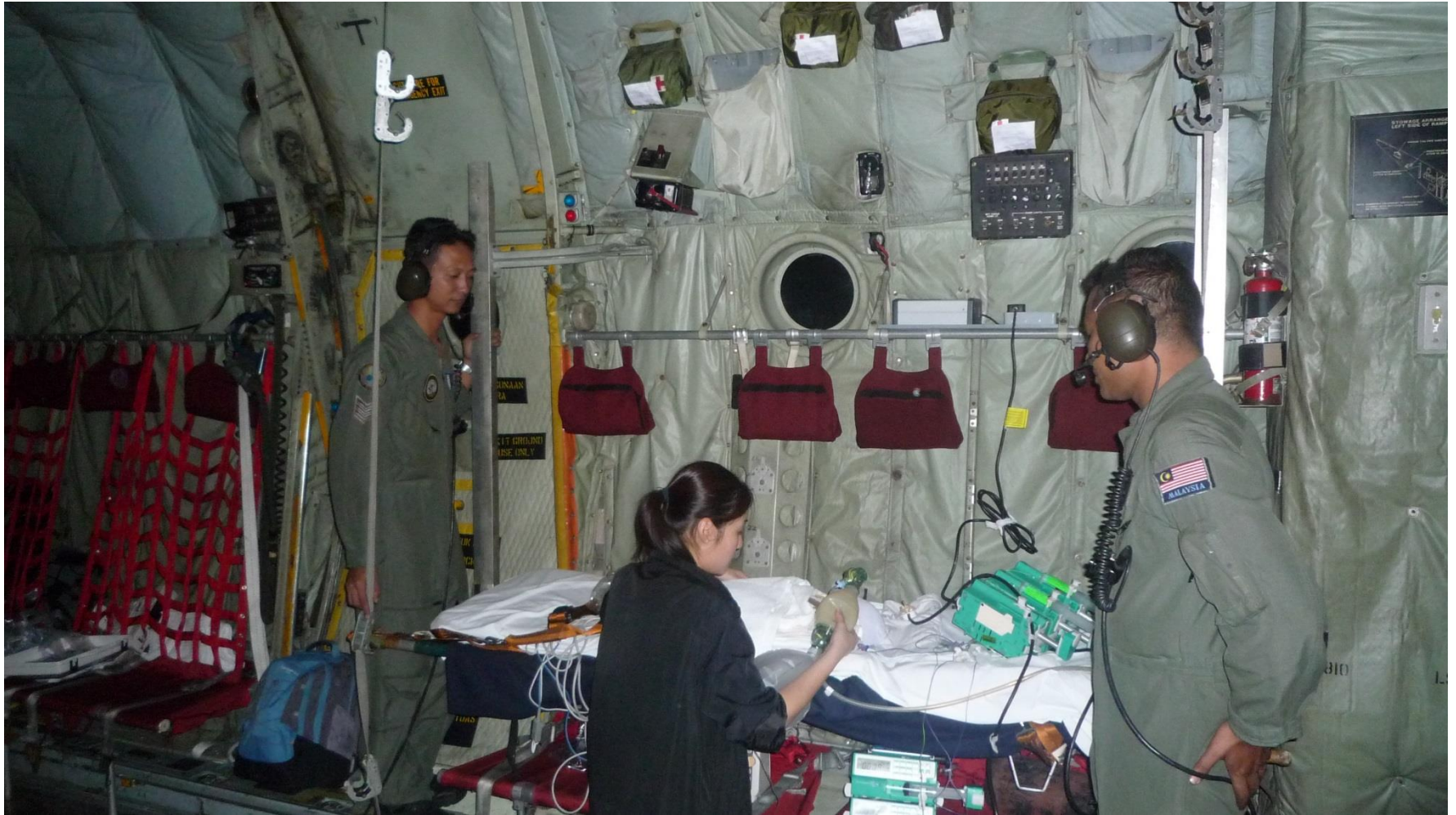
Journey to airport



Arrival at the airport



Oxygen supplies



Power supply failure



3 hours after take off patient deteriorated

DISCUSSION

THE DILEMMAS

1. Should this patient be transferred despite being critically ill ?
2. Should have we abandoned the mission knowing there is power supply failure ?
3. Should have we proceed to Kuala Lumpur when patient deteriorated?

ALTERNATIVE TRANSPORT



Joseph Jupiol/Insight Sabah

Impossible
No road connections to
peninsular Malaysia



Impractical
No service offered
Travel time 7 days

Commercial Flight



Fastest way to travel

Travel time 2 hours

Limited space

Time needed to
make arrangements

EC 145



Expensive

Limited space

Unable to fly at night

Travel time 3 days

Multiple stops

NOMAD



Expensive

Old plane

Travel time 10 hours

Need to make stops
for refuel

PITFALLS

- Timing
- Dealing with other agencies
- Power supply failure

Questions ?

CONCLUSION

- Evaluate the potential risk vs benefit
- Make sure the basics are done well
- Always expect the unexpected

REFERENCE

- Safety of emergency medical service helicopters. [Med J Aust. 2005]
- Johnson D, Luscombe M. Aeromedical transfer of the critically ill patient. J Intensiv Care Soc 2011; 12: 307-12
- Milligan JE, Jones CN, Helm DR, Munford BJ. The principles of aeromedical retrieval of the critically ill. Trends in Anaesth and Crit Care 2011; 1: 22-6.
- <http://www.modernhealthcare.com/article/20120721/MAGAZINE/120719982>
- <http://ceaccp.oxfordjournals.org/content/1/1/12.full.pdf>

**THANK YOU FOR YOUR
ATTENTION**