Dr Claude Preitner

Senior Medical Officer

Civil Aviation Authority of New Zealand

FULLY BOOKED

Saturday, August 13, 2016 (Room 2)

11:00 - 11:55 WS #85: Is your patient fit to fly?

12:05 - 13:00 WS #96: Is your patient fit to fly? (Repeated)

Is your patient fit to fly?

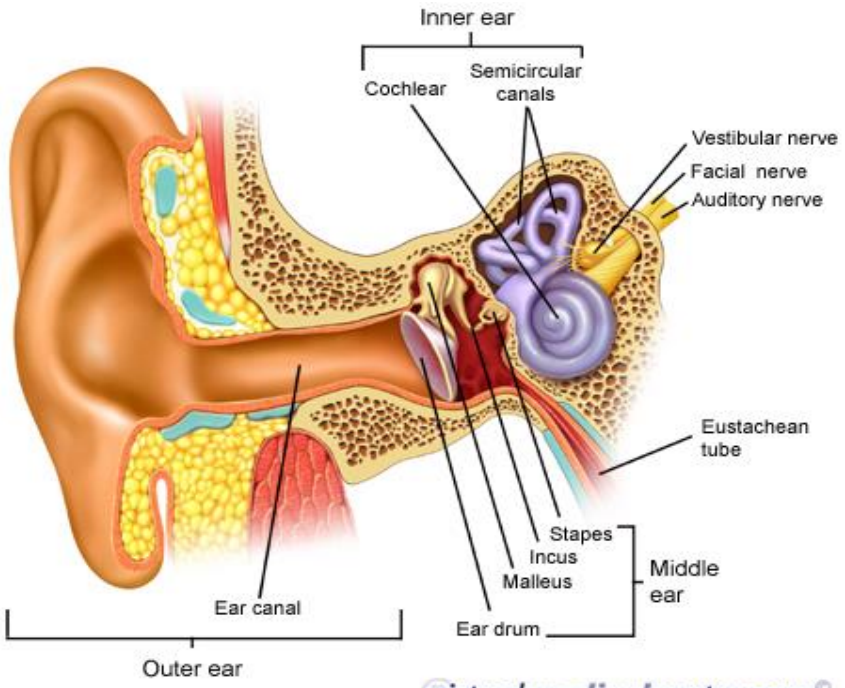
Claude Preitner
Senior Medical Officer CAA

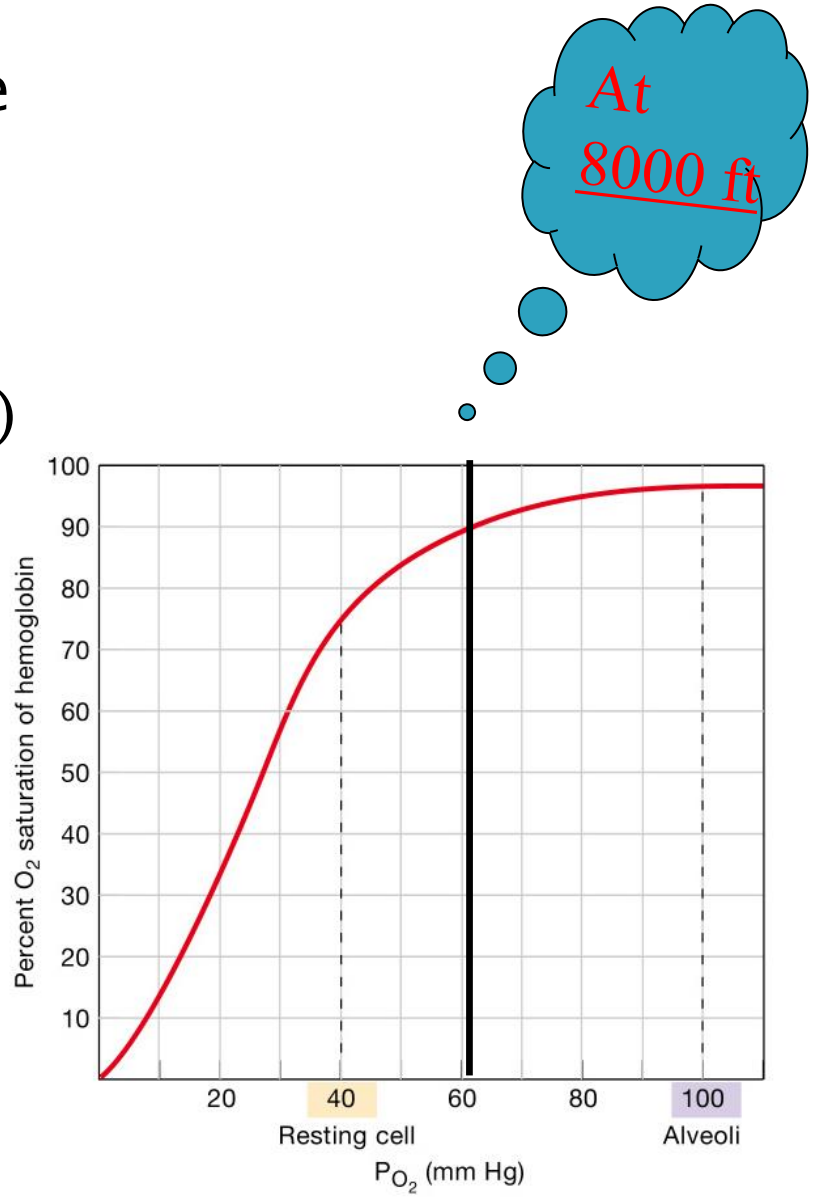
FACASM, FRNZCGP

Your patient as a passenger
NZ is remote – long distances

Your patient as a passenger

- Environment
  - Reduced barometric pressure
  - Reduced paO2
  - Immobilisation
  - Time zones
  - Low humidity 15 % (5 – 35 %)





Your patient as a passenger

- Little room to seat or move
  - Immobilised limb ?
  - Unable to bend knees ?
- Small lavatories
- Immobilisation
  - Stasis, oedema, DVT, PE

General issues to consider

- Stress prior to departure
- Lack of sleep
- Medication **(sufficient for sectors and more)**
  - Forgotten / in wrong luggage / lost luggage
  - Interaction with alcohol
  - Time zone → Timing of medication
- Delayed flights
- Delayed luggage

Diving and flying

- Risk of decompression sickness (Undersea and Hyperbaric Medicine Society workshop – 1990)
  - 12 h for less than 2h diving in past 2 days
  - 24 h after multiday unlimited (in time) dives
  - 24 h but preferably 48 h after any dive requiring decompression stops

Sheffield, PJ, Abstract 20, Supplement to Undersea Biomedical Research, Vol 17, 1990

IATA guidelines
(International Air Transport Association)

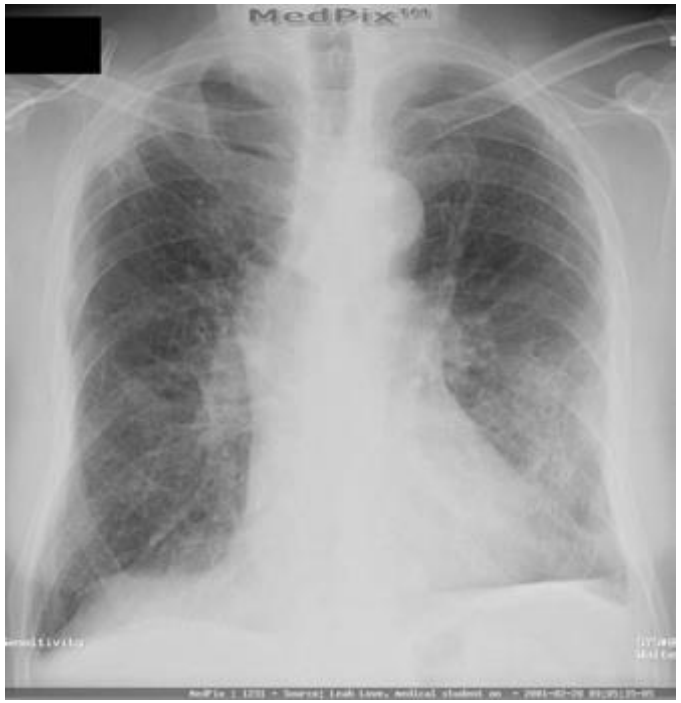
- https://www.iata.org/publications/Documents/medical-manual.pdf
- Or Google: IATA medical manual, April 2016, section 6. p49 – 59)

IATA Guidelines

	Requires Airline medical approval	Accept
COPD, emphysema, pulmonary fibrosis, pleural effusion (fluid in the lung cavity) and hemothorax (Blood in the cavity around the lung) etc.	Supplementary oxygen needed at ground level. PO_2 < 50mmHg Unresolved recent exacerbation	Exercise tolerance (walk) > 50 metres without dyspnea and general condition is adequate. Full recovery if recent exacerbation. No current infection.
Angina	Unstable angina or angina with minimal exertion	Controlled with medication. No angina at rest.
Myocardial infarction	Within last 10 days or high risk (EF<40%, heart failure, pending further investigation, revascularisation or device therapy)	≥10 days if uncomplicated
Cardiac failure	Acute heart failure or uncontrolled chronic heart failure	If cardiac failure is controlled and condition is stable

Respiratory disease

- Pneumothorax
  - 7 – 14 days following full re-inflation, with escort
- COPD
  - Exercise tolerance > 50 – 100 m



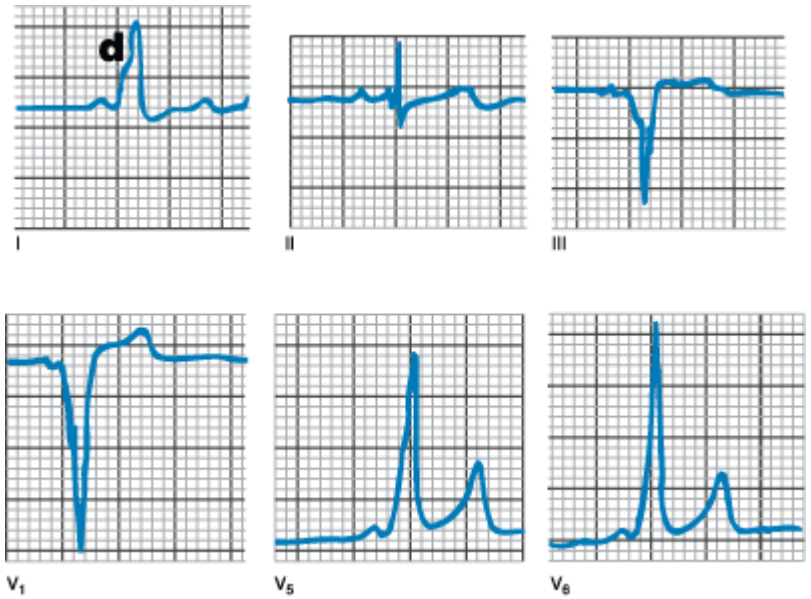
Managing passengers with respiratory disease planning air travel: British Thoracic Society recommendations
Thorax 2002;57: 28-3049

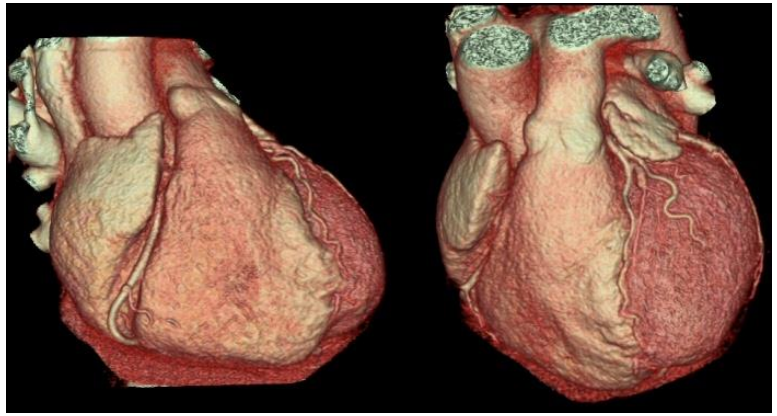
O2 need assessment – COPD

- Scientific
  - Altitude chamber to 8,000 ft.
  - 15 % Oxygen mix trial
  - Prediction formula
- Practical
  - Can patient walk 100 m with hand luggage, unassisted?
  - SatO2 on the ground:
    - < 93 % but >88%, may need O2
    - < 88% does need O2
      - Must book 02 supply with airline (MEDA form)

Cardiovascular disease

- Ischaemic heart disease
  - Angina stable / controlled
  - MI > 10 days if uncomplicated
- Cardiac failure
  - Controlled





British Society Working Group. Fitness to fly for passengers with cardiovascular disease. Heart 2010;96:i1eii16.

Haematology

- Anaemia
  - > 9.5 g/L ok (24 h after bleeding stopped)
  - Symptomatic, or <8.5 g /L
    →Transfusion or O2 supplementation
- → Sickle cell
  →Uncommon in NZ, usually not a problem
  →> 10 days after crisis (+ O2)
- Thrombophilia: No guideline

Diabetes on insulin

- Two blood monitoring devices with extra batteries;
- Enough insulin (regular insulin and short acting)
- Enough syringes and testing equipment;
- No fridge available on aircraft;
- Emergency kit i.e. Carbohydrates & Glucagon;
- Medication for diarrhoea and vomiting;
- Medic Alert;
- Insurance papers;
- GP letter or essential medical records.

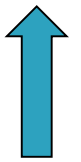
Have Insulin, Will Fly: diabetes Management During Air Travel and Time Zone Adjustment Strategies; Clinical Diabetes, Vol 2, 2003: 82-85.

Metabolic – diabetes

Adjusting insulin injections:

Avoid hypoglycaemia

- Less than 4 – 5 times zone, no adjustment
- Keep the watch at departure time

- Travelling East → shorter day → less Insulin 
- Travel in West → longer day → more insulin 

Have Insulin, Will Fly: diabetes Management During Air Travel and Time Zone Adjustment Strategies; Clinical Diabetes, Vol 2, 2003: 82-85.

Pregnancy

- Foetal haemoglobin favours the foetus
- Flying generally permitted until 36 weeks (certificate if over 28 weeks)
  - Multiple pregnancies?
  - History of pre-term labour ?
  - Complicated pregnancy ?
    - Foetus ?
    - Mother ?
- Consider:
  - Past history
  - Flight – Travel duration
  - Pressure stockings

Surgery

- Laparoscopic surgery;
  - > 5 days
- Major abdominal surgery;
  - > 10 days
- Neurosurgery
  - > 10 days and no air in the skull !
- Intraocular surgery
  - > 7 days, up to 6 weeks (retinal detachment)
- Other considerations: secondary bleed !

IATA Guidelines

- Intra ocular surgery
  - ! Gas insufflation
    - Air: days to absorb
    - SF6: 2 weeks
    - C3F8: 6 weeks

Intra-ocular surgery	6 days or less	≥7 days	Any gas injected in the globe must be resorbed; for injection of SF6, a minimum of 2 weeks is required and for C3F8, a minimum of 6 weeks is required; written specialist fitness to fly commercially is required.

Fractures

- Lower limbs oedema during flight
- Lower limbs cast must be split if < 72 h Cast
- Exit row not permitted
- May not fit in the seat → Business seat needed
- Aircast partially deflated.

Mental health

- Avoid alcohol + Benzos

- Psychosis not under control
  - Medical escort if unstable
  - +/- security

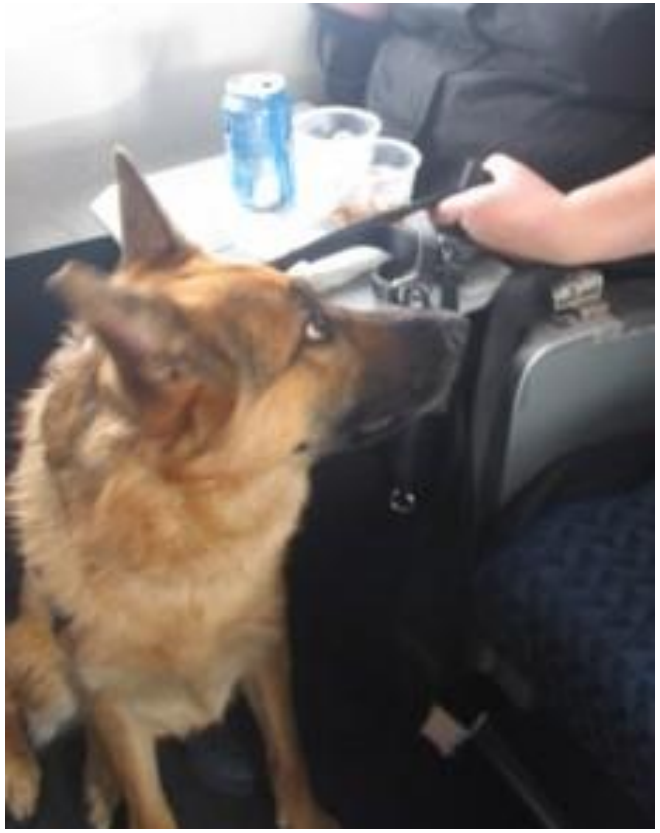
- Anxiety and fear of flying or
- Claustrophobia
  - Hyperventilation
  - Panic
    - Medication ?
    - Alcohol !

Infectious disease

- Active Tb – Viral infections: No flying
- Air conditioning: complete recycle every 3 minutes
- Complete air change every 6 – 7 minutes
- In practice 2 rows in front and behind to be traced

Special needs

- O2 – generators ok for 2 L/min
- Impaired i.e. blind or deaf
- Mobility
  - Assistance – need for wheelchair to aircraft
  - Patient in wheelchair
- Neonates
- Terminally ill
- Stretcher patient

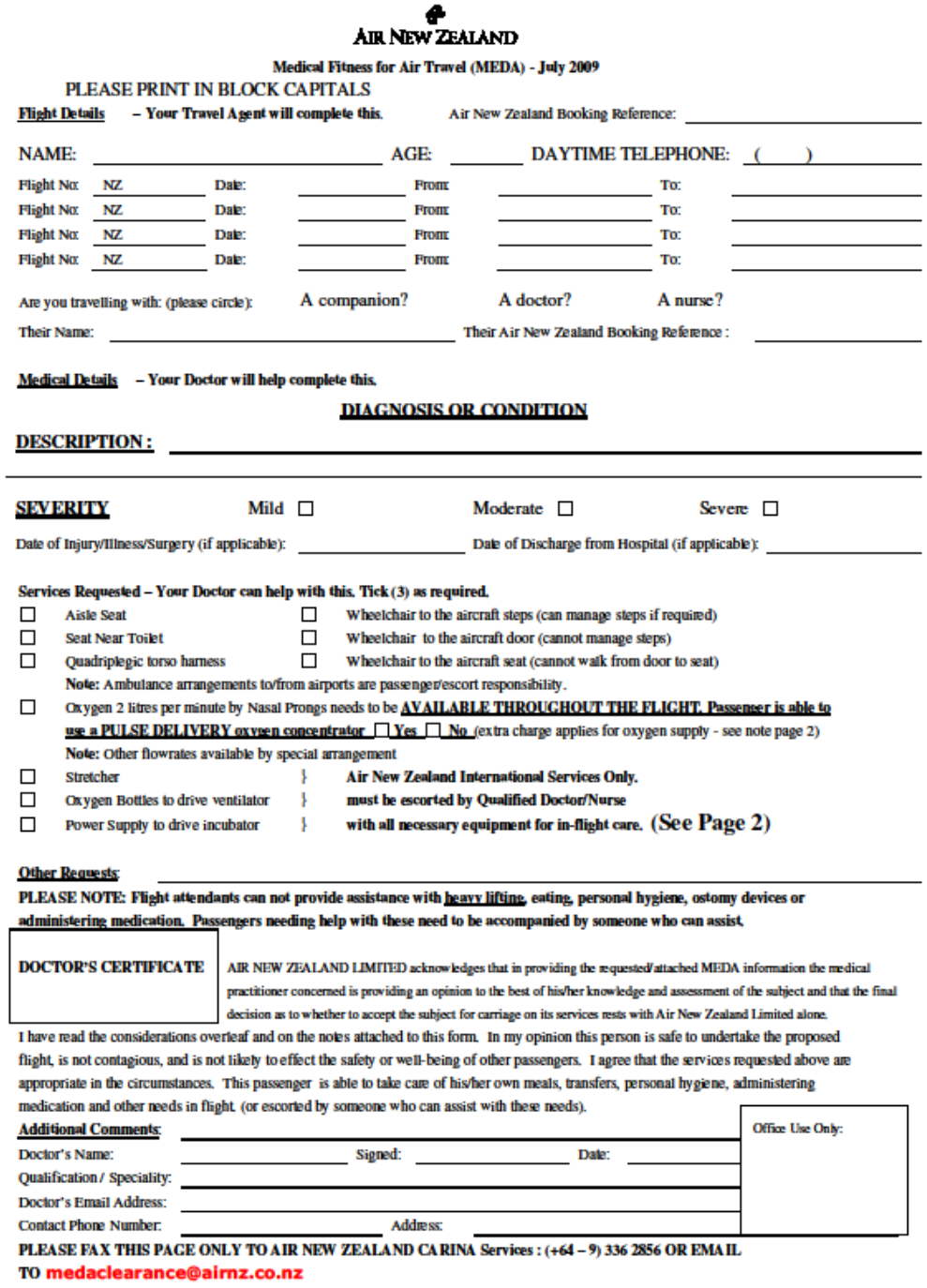


Patient Transport Unit – Lufthansa

www.airnewzealand.co.nz/special-assistance/

www.flypacificblue.co.nz/Personal/Flightinfo/BeforeYouFly.....

Emirates etc.



AIR NEW ZEALAND

Medical Fitness for Air Travel (MEDA) - July 2009

PLEASE PRINT IN BLOCK CAPITALS

Flight Details – **Your Travel Agent will complete this.** Air New Zealand Booking Reference: _____

NAME: _____ AGE: _____ DAYTIME TELEPHONE: ( ) _____

Flight No: NZ _____ Date: _____ From: _____ To: _____
Flight No: NZ _____ Date: _____ From: _____ To: _____
Flight No: NZ _____ Date: _____ From: _____ To: _____
Flight No: NZ _____ Date: _____ From: _____ To: _____

Are you travelling with: (please circle): A companion? A doctor? A nurse?

Their Name: _____ Their Air New Zealand Booking Reference : _____

Medical Details – **Your Doctor will help complete this.**

DIAGNOSIS OR CONDITION

DESCRIPTION : _____

SEVERITY Mild ☐ Moderate ☐ Severe ☐

Date of Injury/Illness/Surgery (if applicable): _____ Date of Discharge from Hospital (if applicable): _____

Services Requested – Your Doctor can help with this. Tick (3) as required.

☐ Aisle Seat
☐ Seat Near Toilet
☐ Quadriplegic torso harness
Note: Ambulance arrangements to/from airports are passenger/escort responsibility.
☐ Oxygen 2 litres per minute by Nasal Prongs needs to be **AVAILABLE THROUGHOUT THE FLIGHT. Passenger is able to use a PULSE DELIVERY oxygen concentrator** ☐ Yes ☐ No (extra charge applies for oxygen supply - see note page 2)
Note: Other flowrates available by special arrangement
☐ Stretcher
☐ Oxygen Bottles to drive ventilator
☐ Power Supply to drive incubator

☐ Wheelchair to the aircraft steps (can manage steps if required)
☐ Wheelchair to the aircraft door (cannot manage steps)
☐ Wheelchair to the aircraft seat (cannot walk from door to seat)

Air New Zealand International Services Only. must be escorted by Qualified Doctor/Nurse with all necessary equipment for in-flight care. (See Page 2)

Other Requests: _____

PLEASE NOTE: Flight attendants can not provide assistance with heavy lifting, eating, personal hygiene, ostomy devices or administering medication. Passengers needing help with these need to be accompanied by someone who can assist.

DOCTOR'S CERTIFICATE

AIR NEW ZEALAND LIMITED acknowledges that in providing the requested/attached MEDA information the medical practitioner concerned is providing an opinion to the best of his/her knowledge and assessment of the subject and that the final decision as to whether to accept the subject for carriage on its services rests with Air New Zealand Limited alone.

I have read the considerations overleaf and on the notes attached to this form. In my opinion this person is safe to undertake the proposed flight, is not contagious, and is not likely to effect the safety or well-being of other passengers. I agree that the services requested above are appropriate in the circumstances. This passenger is able to take care of his/her own meals, transfers, personal hygiene, administering medication and other needs in flight. (or escorted by someone who can assist with these needs).

Additional Comments: _____

Doctor's Name: _____ Signed: _____ Date: _____
Qualification / Speciality: _____
Doctor's Email Address: _____
Contact Phone Number: _____ Address: _____

Office Use Only:

PLEASE FAX THIS PAGE ONLY TO AIR NEW ZEALAND CARINA Services : (+64 – 9) 336 2856 OR EMAIL TO medaclearance@airnz.co.nz

In a nutshell – questions to consider

- Is flying a risk to the traveller (exacerbation) ?
- Condition difficult to handle in flight ?
  - Seizure, cardiac arrest, behaviour / mental
- Traveller a risk to others ?
  - Infectious disease
  - Behaviour
- Special requirements ? Wheelchair / O2 etc.

Travel Health Insurance

- A MUST HAVE !!
- Possible cost of medical mishap: $ 1-2 millions dollars
- Pre-existing conditions often excluded
  - Pre-existing (P.E) condition excluded ! Unless
  - P.E condition declared and accepted
  - Shop around for cover (broker)
  - Medical history disregarded (MHD – corporate) – fit to travel test
- STDs and Alcohol related: excluded

Case study

- Female – age 60 travel to the USA
- Develops some chest discomfort on way to airport, not too concerned → Fly
- MI on board → admission in the US → Stenting
- Has no declared P.E condition
- GP declares: no cardiac condition
- GP notes: Diagnosis of CAD made by angiography 3 years before.
- No Cover, $ 30 – 40 k.

Regularly offending conditions

- History of CAD → MI
- AF → Stroke (big ticket item)
- COPD → Exacerbation
- Cancer → Major complication overseas
- Etc.

Costs $$$$$$$$$

- Hospitalisation
- Intensive care
- Surgery
- Rehab
- Family hotel
- Loss of bookings etc.
- Repatriation

Logistic issues

- Transfer to appropriate local / regional facility ?
- Air ambulance ?
- Return home:
  - Air ambulance – Cost ?
  - Upgrade to Business
  - Nurse or / and doctor escort

Difficulties

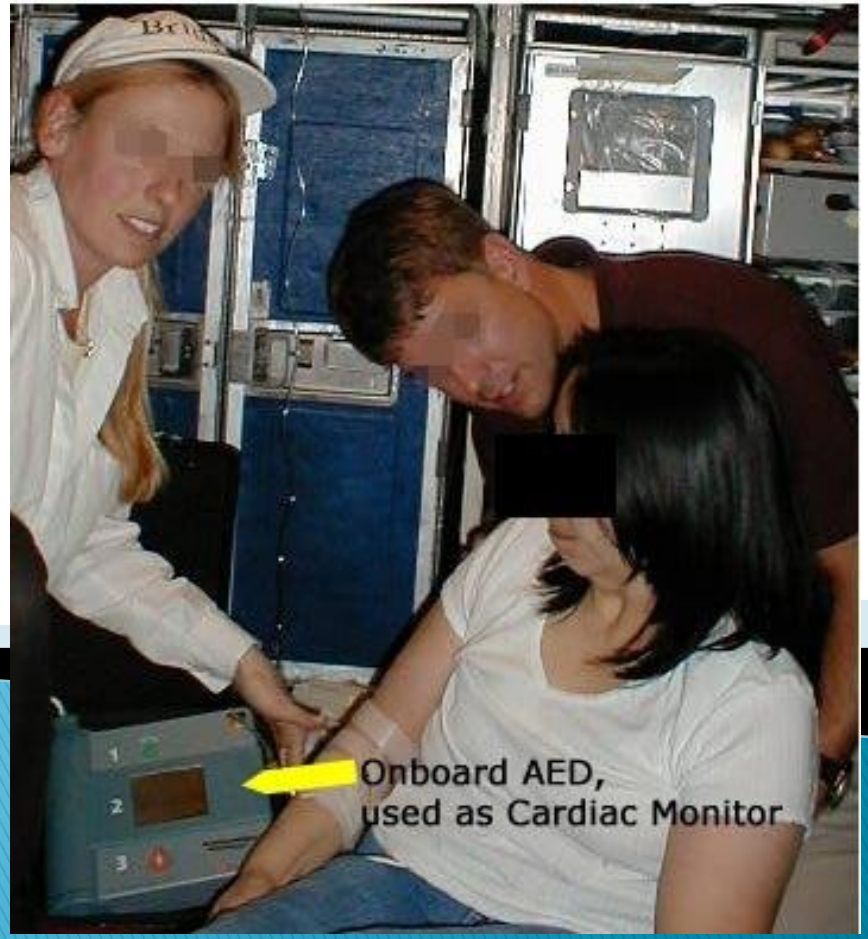
- Treating doctor not familiar with aeromedical issues.
- Obtaining agreement from treating doctor for the patient to fly home; or
- Treating doctor too optimistic.

Key points – GPs can help

- Advising patients appropriately
- Understanding logistic of patients air transport
- Use existing resources to:
  - Decide on fitness to fly
  - Fill in the required MEDA form
  - Liaise with airline if necessary
  - Liaise with travel medical advisor

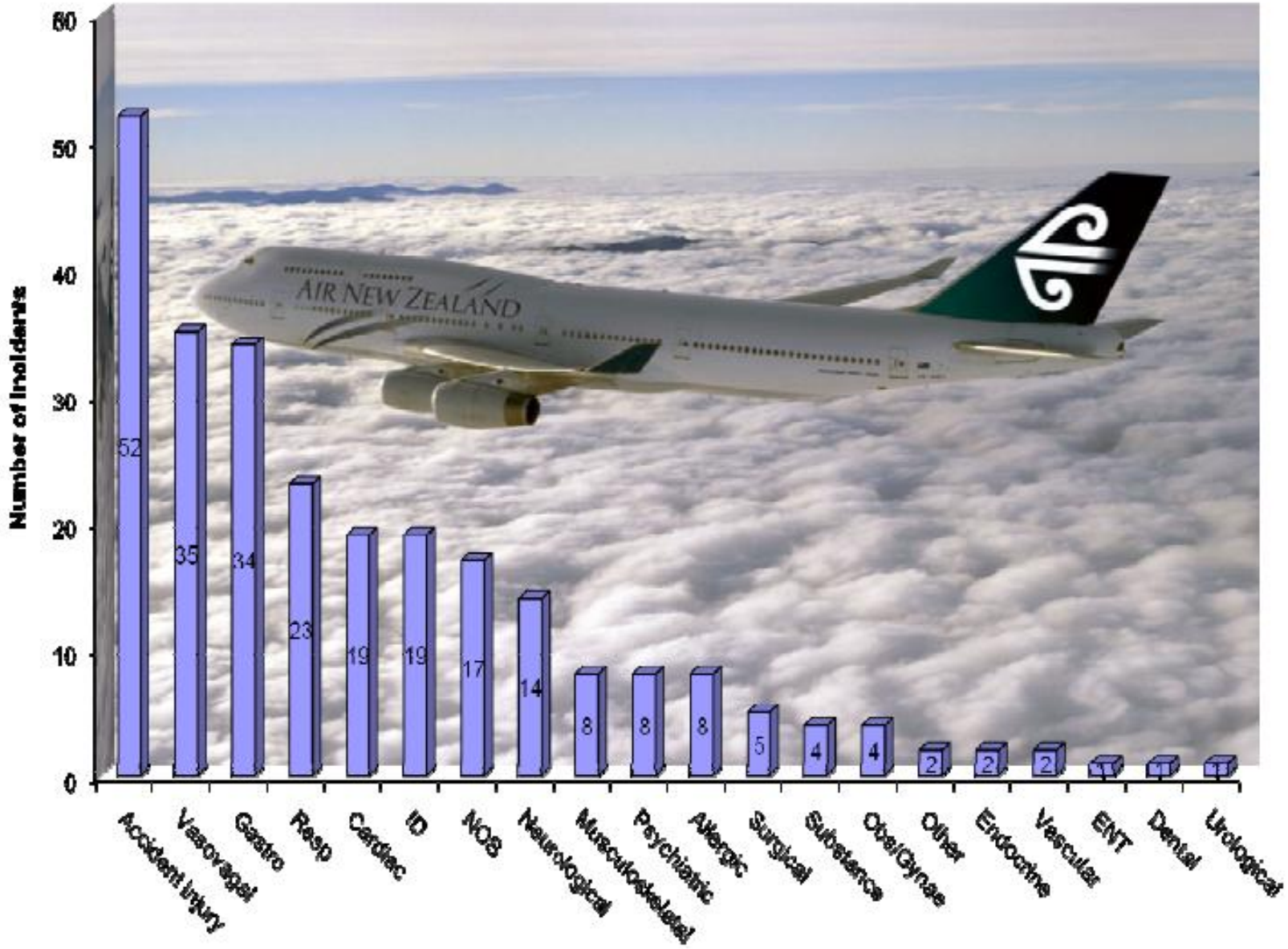
Questions ?

Is there a doctor on board



Large aircraft – lots of people

Air New Zealand In-flight Medical Emergencies From 1 May 08 - 31 May 09



Issues for the Medic

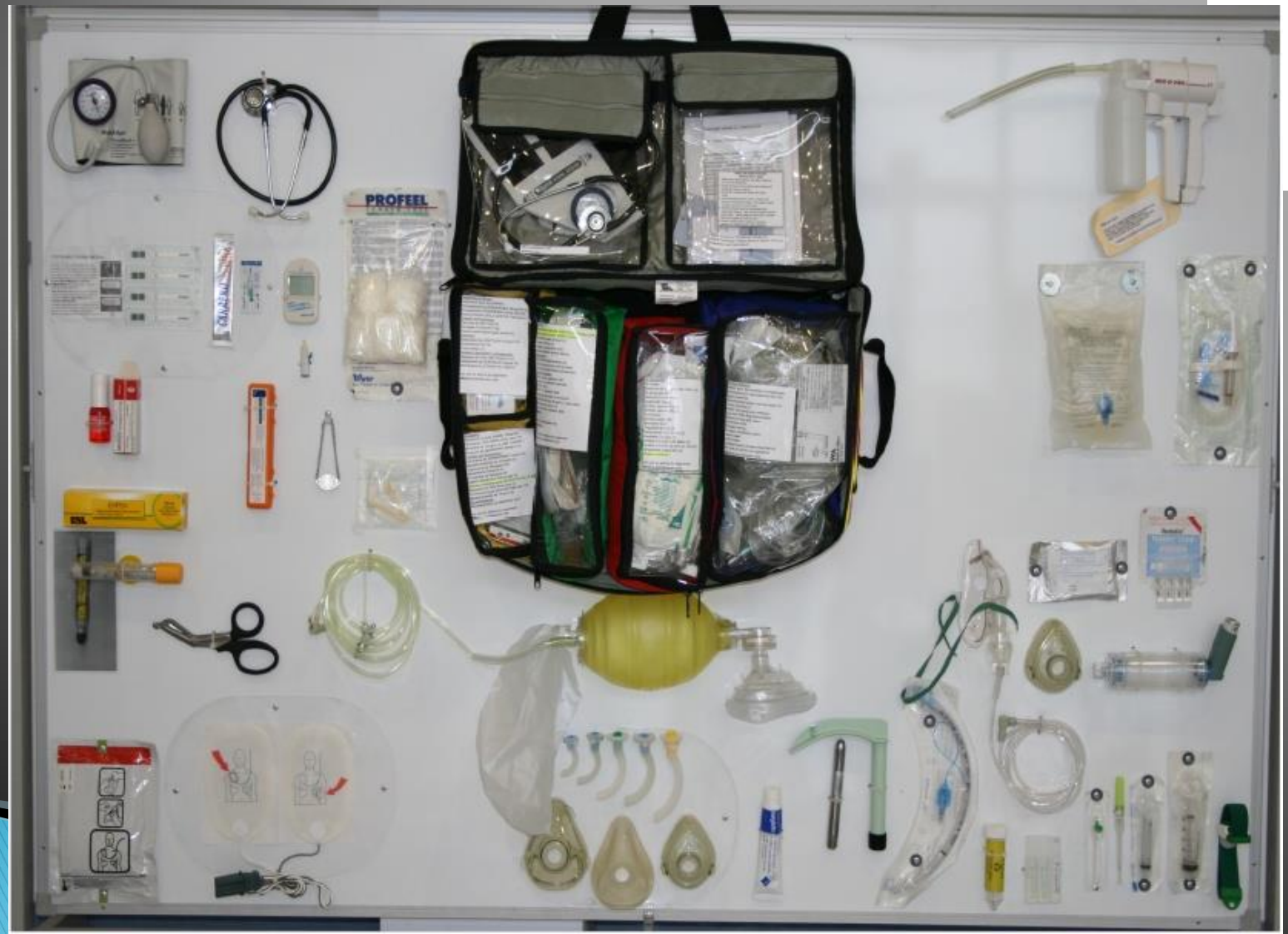
- Obligation to assist
  - Ethical (NZMC)
  - Legal (i.e. France)

- Legal protection
  - ✈ Good Samaritan legislation in US (do not charge – do not seek advantage !!)
  - ✈ Airlines contract to a medical service provider

Ground based assistance

- SOS International
  - Medair
    - **MedLink Global Response Center** Phoenix, Ariz.Medair
- Provides in flight consultancy services
  - You are the eyes, ears and hands

Air NZ medical it



Divert or not

- Decision to Divert
  - The captain's decision, no yours !
  - Considerations:
    - Safety of the other 350 people on board
    - Fuel
    - Weather
    - Ground facilities
      - Accommodation
      - Medical

Key points

- Doctors / nurse mostly well protected
- Doctor kit usually available
- Help is generally available (Medlink)
- Do not seek any reward

Questions ?