GUIDELINES FOR PASSENGER MEDICAL CLEARANCES

NOTE: The information contained in this document is to be used as a guideline and is intended for the use of qualified medical professionals only.

1. CARDIOVASCULAR SYSTEM

a) Angina

Patients with chronic and stable angina on appropriate medical therapy, i.e. patients who don't suffer from angina at rest and/or under emotional stress, or with very mild symptoms easily correctable by one dose of nitroglycerine, can tolerate air travel well.

Patients with angina at rest or patients with true unstable angina (unstable angina not controlled by standard medical therapy) should not travel by commercial aircraft.

Patients presenting with unstable angina that can be stabilized in the emergency room, can travel the next day to a tertiary center in a commercial aircraft only if they are accompanied by a physician with an attached EKG monitor/defibrillator and appropriate medication. The patient will need to travel on oxygen.

b) Myocardial Infarction

Patients should not travel until all complications (residual angina, arrhythmia, left or right heart failure, blood pressure, are appropriately controlled). Ideally patients should wait 6-8 weeks after myocardial infarct, before doing any elective flying.

Exceptions:

1. If a patient had a non complicated myocardial infarction class Killip I, has no significant other illness and has a normal stress electrocardiogram (Bruce protocol > 6 Mets) or is low-risk on invasive studies, the passenger may be permitted to travel by air, after 7 days’ wait.

   N.B. If the cardiologists disagrees, please refer them to the article in the Canadian Journal of Cardiology, Vol. 20, No. 13, November 2004, entitled “Assessment of the cardiac patient for fitness to fly: Flying subgroup executive summary”

   If the above criteria are met, but it is a repatriation case with repat company, and the repat company requests oxygen, then oxygen can be approved as a condition of travel, even if there is normal oxygenation.
2. Patients with a more significant M.I. who need to be repatriated or need a transfer to a tertiary hospital for revascularization must be accompanied by a physician with appropriate medication, oxygen, and monitoring.

c) Heart failure

If a patient is controlled by medication and is in a New York Heart Association functional class 1 or 2, he can travel. Oxygen is required for class 3 patients.

A patient with right heart insufficiency without symptoms of left heart failure can travel.

d) Angioplasty

Cannot fly the same day. Can fly the next day if procedure was successful and the patient is asymptomatic.

**Angioplasty post-M.I.:** If the angioplasty is after a non-complicated M.I., use the same criteria as for non complicated M.I, but the stress EKG can be replaced by a practical test (walk 100 meters at a normal pace or climb 10-12 stairs without symptoms). If procedure is not successful or creates complications, treat as complicated M.I. (See 1b.1, exception 2).

e) Cardiac Surgery

**Coronary bypass:** Patient can fly 4 days after surgery for short trips (less than 2 hours) if the haemoglobin is higher than 90 gm/l. However, if a patient has a longer trip (jet lag, extended relative hypoxia, lack of sleep, fatigue) he/she may fly 7 days after surgery, if well controlled with haemoglobin higher than 90 gm/l.

Note: If the coronary bypass is after an uncomplicated MI, the stress EKG can be replaced by a practical test (walk 100 meters at a normal pace or climb 10-12 stairs without symptoms).

**Valve replacement:** Patient in New York Heart Association functional class 1 and 2 can fly under the same criteria as bypass surgery.

**NOTE:** any open chest surgery requires a chest xray to document no residual pneumothorax

f) Patients with arrhythmia or post-electrophysiologic study (invasive)

Patients can travel the next day post-therapeutic (ex: ablation of abnormal pathways) or diagnostic procedure if they have a supra-ventricular arrhythmia well controlled and 48 hours post-therapeutic or diagnostic procedure if they have a ventricular arrhythmia well controlled.

Patients with hemodynamically symptomatic episodes (ex: syncope) of ventricular tachycardia even of short duration should not fly on commercial aircraft.
Patients with chronic episodes of ventricular tachycardia can travel if they have an implanted functional defibrillator.

g) Pacemaker insertion

Patients can fly one day after the insertion of a pacemaker, if the procedure was uncomplicated and there is no pneumothorax.

h) Venous Thrombo Embolism (VTE)

Patients at risk of developing thrombophlebitis should be advised to consult their treating physicians and move their legs often when sitting.

Patients with deep vein thrombosis (DVT) will require 7 days of adequate anticoagulation prior to flying.

Following Pulmonary Embolism (PE), cannot travel by air within 5 days, after which patients may be allowed to travel if stabilized, asymptomatic and as long as the PO₂ has returned to normal.

For a passenger with a history of VTE who is no longer on an anti-coagulant, consideration could be given to one dose of low molecular weight heparin which protects the patient for approximately 24 hours.

2. RESPIRATORY SYSTEM

a) Active pneumothorax

Patients cannot travel unless they have a chest tube and are accompanied by a qualified medical attendant for the situation. Otherwise the lung must have re-expanded fully for at least seven (7) days before air travel is allowed.

b) Asthma

No problem if stable and well controlled. Patients should be fully recovered and asymptomatic if they have had a recent exacerbation. Patients should be advised to carry their medication on board.

c) Respiratory insufficiency

Acute: no travelling

Chronic: Patients with chronic bronchitis, emphysema, bronchiectasis and pulmonary hypertension will usually require oxygen at least to bring them to a ground equivalent. The measurement of arterial blood gas is the single most helpful test because the PaO₂ is considered the best predictor of altitude PaO₂ and tolerance. A stable ground level PaO₂ greater than 70 mm Hg is adequate in most cases but a
lesser PaO2 may be effectively managed with in-flight medical oxygen. This can be done by using a nasal canula with a flow of 2-3 liters per minute. If the patient needs oxygen on the ground, he/she will require more in the air.

If no arterial blood gas is available, a room air saturation of ≥94% is required for safe travel at cabin altitude. Passengers with saturations below this should travel with oxygen.

d) Acute pneumonia

Cannot travel by air.

e) Active tuberculosis

According to the World Health Organization (WHO) Persons with infectious TB must postpone travel until they become non-infectious (at least two weeks of adequate treatment) and according to the recommendations of their physicians.

Persons with MDR-TB must postpone travel until advised by their physician that they are culture negative. (See SOP special guidelines for passengers travelling from the north.)

f) Pulmonary Emboli

See Venous Thromboembolism, 1.h, above.

g) Chest surgery

Patients who had lung surgery (lobectomy, pleurectomy, open lung biopsy) must wait for at least ten (10) days before air travel is allowed.

3. HEMATOLOGY

a) Anemia

If anemia is not complicated by another problem, patients can tolerate it fairly well, but since severe anemia may be accompanied by other illnesses that can increase tissue hypoxia, we generally recommend supplemental oxygen for hemoglobin below 9.0 gm/L.

b) Sickle cell anemia

Patients require oxygen at least at 4 LPM regardless of hemoglobin level. Patients with Sickle Cell Trait do not require oxygen.
4. CENTRAL NERVOUS SYSTEM

For all passengers with diseases of the central nervous system, the level of deficit will determine the capacity to travel and the need for, and qualifications of, an escort.

a) Ischemic Stroke/Cerebrovascular Accident (CVA)
Patients should not travel for a minimum of 4-5 days while they stabilize and undergo some basic investigations (cerebral CT scan, EKG, basic hematological and biochemical blood tests).

After 5 days, if medically/neurologically stabilized, investigated and on required treatment (e.g., antiplatelets, anticoagulants, antihypertensives, etc), patients can travel. Patients travelling in the first two weeks post stroke, and patients with cardiac comorbidity should receive supplemental oxygen.

b) Sub-arachnoid hemorrhage
Generally speaking, patients should not travel before surgery. In the rare case that the hemorrhage was minimal but there is a significant aneurysm that will require surgery in a tertiary centre, the risk of travel should be evaluated in consultation with the treating neurosurgeon before clearance is given.

If the subarachnoid hemorrhage is stable on a repeat CT and the patient has been discharged from hospital by the neurosurgeon, the passenger is fit to fly.

c) Transient Ischemic Attack (TIA)
Patients should not travel for a minimum of 48 hours after the attack.

Patients suffering from TIA can travel once they have been stabilized on proper medication including appropriate antithrombotics (antiplatelets, oral anticoagulants) and antihypertensives.

d) Seizure Disorders
Patients with uncontrolled seizure disorders should not travel.

Patients with poorly controlled seizure disorders need an attendant that is familiar with the condition. The treating physician may consider adjusting the anti-epileptic medication before the flight, taking transmeridian travel in consideration.

Passengers should not travel less than 24 hours from the time of the last seizure.

Patients well-controlled on medication usually tolerate flying well.
e) **Organic Brain Syndrome**

Passengers with organic brain syndrome (including damage or disease to the brain causing symptoms such as problems with attention, memory, confusion, anxiety and agitation) should be medicated if the stress of travel will exacerbate the symptoms. An escort familiar with the passenger’s case should accompany the passenger.

f) **Craniotomy**

Patients who have undergone a craniotomy for whatever reason cannot travel for 10 days.

g) **Skull Fracture**

If a fracture extends through a sinus or a middle ear cavity, imaging is needed to rule out air in the cranium. If air is present, travel should be postponed for 10 days. The same limitation applies if air is introduced in the cranial cavity by a medical procedure.

5. **GASTROINTESTINAL SYSTEM**

a) **Intestinal Obstruction or Incomplete Intestinal Obstruction**

Absolute contraindication of travelling by commercial airlines.

b) **Abdominal Surgery**

Patients with ileus should not travel.

At least ten (10) days should elapse before flight when the lumen of the G.I. tract has been opened.

After an open appendectomy, passengers can fly 5 (five) days post-operation if they are able to eat and have had a bowel movement.

Travel is usually acceptable 48 hours after laparoscopy (laparoscopic appendectomy, laparoscopic cholecystectomy, laparoscopic gynaecologic procedures).

c) **Gastrointestinal hemorrhage**

Patients with active G.I. bleeding cannot travel by commercial airlines. If the bleeding coming from an ulcer has stopped for at least one week and the patient is on appropriate medication, he/she can travel. Oxygen may be required if hemoglobin is too low.
d) **Hernia**

If an hernia sac is demonstrated as opposed to an hernia orifice only, gas expansion may lead to strangulation and therefore the hernia should be repaired before flight is contemplated.

e) **Colostomy**

Patients should be advised to carry extra bags.

f) **Acute colitis or diverticulitis**

Patients should not travel by commercial airlines.

### 6. EAR, NOSE, THROAT

a) **Acute otitis media or sinusitis**

Patients should not travel by air.

If patients have to travel with any congestion, they should take appropriate decongestants.

b) **Surgery**

In any middle ear surgery, the middle ear should be dry and well aerated before any flying.

Stapedectomy is especially important. One should consult an ENT specialist to make sure the patient can equilibrate the pressure in the middle ear because permanent damage could be caused. There is no specific time frame.

c) **Tonsillectomy**

Patient must wait 4 days after their surgery before any flying.

### 7. OPHTHALMOLOGY

After eye surgery consult with ophthalmologist to make sure air has not been introduced in the globe.

For pneumatic retinopexy:

- with SF6 - No flying for 2 weeks
- with C₃F₈ - No flying for 6 weeks

A passenger may fly 24 hours after cataract surgery.
8. PSYCHIATRIC DISORDERS

Uncontrolled severely disturbed psychiatric patients should not travel by commercial airlines; when stabilized, they should be accompanied by an attendant. If there is a remote chance the patient may become agitated, the attendant should be a physician or psychiatric nurse.

9. FRACTURES/DISLOCATIONS/INJURIES

a) Extremities, Pelvis & Spine

- All new fractures and/or casts less than 48 hours require a medical clearance
- All femur, hip, pelvis and spine fractures require a medical clearance (if less than 3 months).
- All casts less than 48 hours must be bivalved.

Any lower extremity impairment, where the knee cannot bend, such as a long leg cast or splint, may be unfit to travel in a seat. The issue in such circumstances is safety. A leg where the knee cannot bend might not be accommodated in the space ahead of the seat. The leg cannot be in the aisle because of obstruction. If the leg can fit, travel is permitted. Matters regarding fit need to be referred to the MEDA Desk for conclusion.

b) Skull

See Central Nervous System

c) Mandibular

A patient whose jaw is wired must carry wire cutters and be escorted by a companion who is able to cut the wires. Alternatively, the tie wires could be replaced by elastic bands or have a quick release mechanism.
Patients susceptible to motion sickness should also be prescribed appropriate medication.

d) Traction with weights is unacceptable.
10. CONTAGIOUS DISEASES

A passenger with active contagious diseases cannot travel in commercial aircraft. More specifically, a passenger with:

1) Varicella Zoster (Chicken Pox): cannot fly until all lesions are crusted, typically 4-7 days after the onset of rash in immunocompetent persons, but this period may be longer in immunocompromised persons.
2) Herpes Zoster (shingles): cannot fly until all lesions are crusted, or if any active lesions (not yet scabbed) are exposed. (i.e. any active lesions must be covered).
3) German Measles (Rubella): cannot fly until 7 days after the onset of the rash.
4) Red Measles (Rubeola): cannot fly until 4 days after the onset of signs and symptoms
5) Mumps: cannot fly until 5 days after the onset of parotitis
6) Infectious Tuberculosis: 2 weeks after beginning of treatment (See under Respiratory)

Other infectious diseases such as HIV infections and hepatitis B may travel in commercial aircraft provided that they do not need active medical care during the trip.

Passengers with Methicillin Resistant Staphylococcus Aureus (MRSA), may not travel whenever a moderate or heavy abundance of staphylococcus is known or suspected to be present in draining pus, or the sputum of a patient with pneumonia. Travel would be permitted when wound drainage is resolved, or in the case of pneumonia, the pneumonia with productive cough is resolved.
11. DECOMPRESSION SICKNESS

Absolute contraindication to commercial air travel.
- A patient cannot fly for 3 days after treatment for Type 1 DCS
- A patient cannot fly for 7 days after treatment for Type 2 DCS
- A patient cannot fly for 10 days if repeat treatment is required

Advise patients who scuba dive not to fly before 24 hours have elapsed.

12. TERMINALLY ILL PATIENTS

Consult with Dr. Anna Carvalho or Dr. Vincent Poirier at Occupational Health Services or one of the Senior Medical Advisors in Occupational Health Services.

13. PREGNANCY

Passengers with normal pregnancies and no previous history of premature labour can travel up to and including the 36th week. After that time, only short trips (<2 hours) will be considered and after assurance by the treating physician that there is no sign of imminent delivery.

Passengers pregnant with multiples can travel up until the 32nd week of pregnancy.

14. NEWBORNS

It is preferable for newborns not to travel for the first 7 days of life to allow for ventilation, perfusion and temperature to stabilise. For short haul flights (less than 2 hours) a newborn of 48 hours of age may travel.

15. PERITONEAL DIALYSIS

Patients with peritoneal dialysis may travel but should be advised to complete all dialysis procedures prior to travel.
PROTOCOL FOR THE TRANSPORTION OF INDIVIDUALS WITH SUSPECTED OR CONFIRMED TUBERCULOSIS ABOARD AIR CANADA FLIGHTS IN THE NORTH

Introduction
Exposure to infectious tuberculosis (TB) on commercial aircraft is a real concern for passengers and crew. There is however, some evidence of limited transmission of TB (TB infection\(^1\)) aboard an aircraft from persons with very contagious forms of TB.\(^2\). Occurrences of transmission appear to be rare and all reported cases occurred on flights of more than eight hours. It is important to note that in these instances the infectious person’s disease status was unknown at the time of air travel and no precautionary measures were in place.

The northern territories of Canada – the Yukon, the Northwest Territories, Nunavut and Nunavik (hereinafter referred to as “the North”) - present unique challenges in accessing advanced medical care. Many individuals diagnosed with or suspected of active TB disease in the North must travel by air to obtain access to appropriate medical care.

Given the established low risk of transmission of TB on commercial aircraft, particularly on short haul flights, we believe that most TB patients from the North can be safely transported on commercial flights provided that certain precautions are observed.

The following protocol is designed to ensure the protection of all individual involved during air transport of an individual with suspected or confirmed active TB disease, whilst ensuring that the individual receives the necessary medical care as soon as possible.

Protocol
1. There will be a medical clearance in all cases. To facilitate this process, the health care professional will have direct access to our Meda desk at 1-800-667-4732 and will be required to fill the proper clearance form (Appendix I – Air Canada. Fitness for Air Travel – Medical Information).
2. Patients who require oxygen will not be considered under this protocol.
3. If medical clearance is granted, the patient will travel with a responsible escort (designated by the health authority) who will ensure the protocol is respected.
4. The patient will wear a mask (NIOSH approved, e.g., N95) and have a container capable of tight closure, for the disposal of tissues.
5. The patient and the escort will be seated in the last row of the economy class cabin. The patient and the escort will board the plane first and will be the last to deplane.
6. No other special precautions need to be taken. For longer flights, meals may be taken normally, except that the patient must cover the mouth with a paper tissue if coughing occurs during eating and dispose of the tissue in the sealable container. There is no need for isolation procedures for any utensils or dishes.

\(^1\)TB infection is acquired through inhalation of M. tuberculosis in aerosolized respiratory secretions from an infectious person. Sometimes the immune system is able to kill the TB bacteria. If the person’s immune system is unable to kill the bacteria, then this person has TB infection. A person with TB infection has a five to ten per cent risk of developing TB later in life. A person who has TB infection does not feel sick and cannot spread TB to others.

\(^2\)An infectious person is an individual who has active TB disease of the lungs or vocal cords. This individual may spread TB to others when they cough or sneeze.