

## Appendix Indications, contraindications, and preparation for air ambulance transport in Canada

<b>Indications</b>
<ul style="list-style-type: none"><li>• Transportation of patients for management of time-sensitive illnesses (e.g., ST-elevation myocardial infarction, trauma, stroke) or higher-level care</li><li>• Transportation of specialized equipment and/or teams to the patient or facility (e.g., vasopressors, inotropes, mechanical ventilation, transvenous pacing, point-of-care ultrasound, mobile extracorporeal membrane oxygenation, neonatal/pediatric transport team)</li><li>• Provision of medical services or medical rescue in austere or remote environments (e.g., mountainous terrain, avalanches)</li><li>• Scene response in major trauma</li><li>• Interfacility transport</li></ul>
<b>Relative contraindications</b>
<ul style="list-style-type: none"><li>• Active cardiac arrest</li><li>• Untreated pneumothorax (depending on the aircraft pressurization ability)</li><li>• Large patient weight and/or width<sup>1</sup></li><li>• Aggressive, uncooperative, or hostile patient</li><li>• Active labour (weighing the likelihood and risks of in-flight delivery)</li></ul>
<b>Absolute contraindications</b>
<ul style="list-style-type: none"><li>• Moribund patient (i.e., patient not expected to survive transport or patient close to the end-of-life)</li><li>• Advance directive expressing limitations to transport or higher-level care</li><li>• Inclement weather (e.g., thunderstorms, freezing rain, icing, poor visibility, high winds)</li></ul>
<b>Preparation checklist prior to transportation<sup>2</sup></b>
<ul style="list-style-type: none"><li><input type="checkbox"/> Communication with the patient and/or next-of-kin regarding the plan to transport and discussion of goals of care/treatment preferences/cardiopulmonary resuscitation/intubation</li><li><input type="checkbox"/> Measurement of the patient's height and weight<sup>1</sup></li><li><input type="checkbox"/> Communication of pertinent patient information to the receiving facility <b>and</b> transport team (i.e., history of presenting illness, past medical history, medications, allergies, recent vital signs, physical examination, laboratory investigations, diagnostic imaging, advance directives for medical care, infection control precautions including COVID-19 status, treatment provided)</li><li><input type="checkbox"/> Coordination with local emergency medical services/dispatch to ensure landing zone available and free of debris/hazards (as applicable or as needed)<sup>3</sup></li><li><input type="checkbox"/> Copies of pertinent chart information available</li><li><input type="checkbox"/> Large bore intravenous access (i.e., two 18-gauge or larger peripheral intravenous catheters, or intraosseous/central venous catheter if difficult intravenous access)</li><li><input type="checkbox"/> Stabilization of hemodynamics pre-transport (i.e., initiation of vasopressors, fluid boluses)</li><li><input type="checkbox"/> Consider elective stabilization or securing of airway pre-transport in unstable patients. For intubated patients, documentation regarding endotracheal tube position and size</li><li><input type="checkbox"/> Medications available and/or administered prior to transport (e.g., antiemetics, analgesics, sedation, vasopressors, inotropes). Minimize any unnecessary infusions.</li><li><input type="checkbox"/> Foley catheter for hemodynamically unstable patients or flights longer than 2 hours</li><li><input type="checkbox"/> Treatment of large pneumothoraces with tube thoracostomy placement</li><li><input type="checkbox"/> Medical escorts (e.g., physicians, nurses, paramedics, respiratory therapists) from the sending facility (if accompanying the patient) should be prepared for potential in-flight clinical deterioration with emergency airway equipment, monitoring devices, pumps, and medications.</li></ul>

<sup>1</sup>Aircraft across Canada have different weight capacity limits.

<sup>2</sup>A sample checklist can be found through Ornge (<https://www.ornge.ca/healthcare/transporting-a-patient>)

<sup>3</sup>Further information on landing zone training and preparation can be found through STARS (<https://stars.ca/education-and-training/landing-zone-training>)

### References:

1. Transporting a patient. Mississauga (ON): Ornge; 2021. Available: <https://www.ornge.ca/healthcare/transporting-a-patient> (accessed 2021 May 25).
2. Powell DG, McCallum AL. Canadian transport medicine: waypoints and destinations. *Can J Emerg Med* 2020;22(Suppl 2): S1-3.