Provincial Equipment Standards for Ontario Ambulance Services

Version 3.3

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Emergency Health Services Branch
Ministry of Health and Long-Term Care

Ontario

To all users of this publication:

The information contained in this standard has been carefully compiled and is believed to be accurate at date of publication.

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Document Control

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2.3	April 20, 2015	February 1, 2016	Finalized version 2.3
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3.1	October 2016	December 11, 2017	Version 3.0 with the equipment considerations required for BLS PCS v3.0
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3.3	July 2017	December 11, 2017	Amends 3.1. See accompanying Summary of Changes

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Provincial Equipment Standards for Ontario Ambulance Services

Version 3.3

Preamble

Preamble

Preface

Part A of this document contains the following equipment lists:

1. List 1(a) – Land Ambulance Accessory Equipment
2. List 1(b) – ERV Accessory Equipment
3. List 2 – Land Ambulance Primary Care Paramedic Equipment
4. List 3(a) – ERV Equipment - Responder
5. List 3(b) – ERV Equipment - Support/Command
6. List 4 – Land Ambulance/ERV Advanced Care Paramedic Equipment and Medication
7. List 5 – Land Ambulance Auxiliary Equipment and Medication

Lists 1 - 4 specify the minimum quantities of each piece of equipment that are required to be carried on a land ambulance or emergency response vehicle to provide care for a **minimum of two (2) patients**, and to transport a **minimum of one (1) patient**. The lists also identify standards that apply to specific equipment items. Where a standard has been developed by Emergency Health Services Branch (EHSB), the applicable EHSB Equipment Standards Reference Number has been provided. The lists, in some cases, reference standards developed by an external organization (*e.g.* CSA). In such cases, the equipment identified shall meet or exceed these referenced standards.

Part B and C of this document contain the actual equipment standards for those items in Part A identified as having to meet minimum standards developed by EHSB.

Scope of the Standards

1. The *Provincial Equipment Standards for Ontario Ambulance Services* describe, where established, the acceptable minimum requirements for medical and accessory equipment required to be carried in land ambulances and emergency response vehicles (ERVs) for use in the Province of Ontario. These minimum requirements reflect current pre-hospital care practices in Ontario. Their purpose is to ensure that:
   a. equipment is consistent with current patient care standards as established by the Ministry of Health and Long-Term Care (MOHLTC), EHSB;
   b. a uniform level of patient care is provided throughout the province;
   c. equipment meets current medical standards and practices; and
   d. equipment is compatible for use in an ambulance or ERV that meets the current standards for those vehicles in Ontario.
2. Equipment lists found in Part A of the *Provincial Equipment Standards for Ontario Ambulance Services* describe the minimum quantities of medical and accessory equipment to be carried for use in land ambulances and ERVs in the Province of Ontario. Ambulance service operators may determine the location where the equipment is stored

in an ambulance or ERV to meet their operational and patient care needs, except in cases where the quantity and location of the equipment has been described in a specific standard.

3. Each ambulance service operator may determine the appropriateness of disposable versus non-disposable medical and accessory equipment when selecting equipment; however, the equipment selected and carried shall meet any applicable standards.
4. Each ambulance operator may determine the appropriateness of personal issue equipment to their staff in lieu of stocking the equipment in an ambulance or ERV (*e.g.* helmets). All equipment provided to staff as personal issue shall meet any applicable standards indicated in this document.
5. The minimum quantities of medical and accessory equipment are intended to ensure that each type of ambulance has adequate inventory to provide typical patient care for a minimum of two (2) patients.
6. An ambulance service operator is fully responsible for any equipment carried on an ambulance or ERV, including any equipment that is not contained in the lists set out in Part A. This responsibility will include:
   a. the cost of acquiring and maintaining the equipment;
   b. ensuring that the use of the equipment is within the scope of practice of the staff using the equipment;
   c. ensuring that their staff are adequately trained in the use of the equipment;
   d. the cost of providing any necessary training to their staff; and
   e. ensuring that the equipment is safely stored in the ambulance or ERV.

General Requirements for Equipment

1. Ambulance service operators are responsible to ensure that all medical and accessory equipment purchased for use on an ambulance or ERV are approved or licensed by Health Canada for sale in Canada, where applicable.
2. All equipment carried in an ambulance or ERV shall comply with any applicable Acts, regulations and standards.
3. The installation of the equipment in an ambulance or emergency response vehicle shall:
   a. promote the safety of paramedics utilizing equipment; and
   b. permit ease of accessibility for servicing, replacement, and adjustment of component parts and accessories with minimum disturbance to other components and systems.
4. Ambulance service operators shall ensure that all electrical medical and accessory equipment being operated, either on 110/120 volt (AC) or low voltage, have been approved or inspected for use by CSA or C-UL.
5. Ambulance service operators shall ensure that controlled substances (opiates and benzodiazepines) are stored in different carrying cases than other medications.

Modifications

1. Modifications shall not be made that would adversely affect the safety or other performance characteristics of any piece of equipment. Documentation from the original equipment manufacturer shall be kept on file confirming the acceptability of any modifications.
2. Any accessory components added to a piece of equipment (*e.g.* brackets, shelves, *etc.*) shall be able to support a minimum of ten (10) times the weight of the component plus any item it is intended to hold or carry.

Equipment Testing and Maintenance

All applicable medical and accessory equipment shall, at a minimum, be inspected and maintained in accordance with the original equipment manufacturers inspection, maintenance and quality assurance requirements.

Equipment Manuals

Manufacturer's equipment manuals shall be readily available as local reference documents. These references will assist quality assurance personnel, management staff, paramedics and review teams in determining the appropriate use, maintenance and compliance of applicable medical and accessory equipment.

Materials

Latex

Equipment used in an ambulance or emergency response vehicle shall be latex-free, where available.

Hypoallergenic Materials

Equipment shall be hypoallergenic, where available.

Commonly Used Abbreviations

Table 1 below outlines abbreviations commonly used in this standard.

Table 1. Abbreviations commonly used in the Standard

Word/Phrase	Abbreviation
Advanced Care Paramedic	ACP
American Association of Respiratory Care	AARC
Association for the Advancement of Medical Instrumentation	AAMI
American Heart Association	AHA
Association of Air Medical Services	AAMS
American National Standards Institute	ANSI
American Society for Testing and Materials	ASTM
Canadian Standards Association	CSA
Carbon Dioxide	CO_2
Centimetre	cm
Compressed Gas Association	CGA
Diameter index safety system	DISS
Electrocardiogram	ECG
Emergency Health Services Branch	EHSB
Emergency Response Vehicle	ERV
End-tidal Carbon Dioxide	$ETCO_2$
Endotracheal tube	ETT
Feet	ft
French	F
Gauge	G
Gram	g
International Standards Organization	ISO
Intravenous	IV
Kilogram	kg
Metre	m

Word/Phrase	Abbreviation
Metered Dose Inhaler	MDI
Microgram	mcg
Milliequivalent	mEq
Millilitre	ml
Millimetre	mm
Multi-casualty incident	MCI
Ministry of Health and Long-Term Care	MOHLTC
Pound	lbs
Pounds per square inch	psi
Primary Care Paramedic	PCP
Underwriters Laboratories of Canada	C-UL
United States National Institute for Occupational Safety and Health	NIOSH
United States Pharmacopoeia	USP
Water	H_20

Definitions

Approximately

means a range within 10% (plus or minus) of the specified figure.

Disposable

means a product that is designed for a single use or application.

Sterile

means free from bacteria.

Part A – Land Ambulance/ERV Equipment

Part A – Land Ambulance/ERV Equipment

List 1 – Land Ambulance/ERV Accessory Equipment

List 1 (a) – Land Ambulance Accessory Equipment

	Equipment Description	EHSB Standard No.	Minimum Quantity
1.	portable hand lights (with batteries) – Meets or exceeds CSA standard (C22.2 No. 12)	N/A	2
2.	radio equipment: type and power, approved by the Director	N/A	1

List 1(b) – ERV Accessory Equipment

	Equipment Description	EHSB Standard No.	Minimum Quantity
1.	portable hand lights (with batteries) – Meets or exceeds CSA standard (C22.2 No. 12)	N/A	1
2.	radio equipment: type and power, approved by the Director	N/A	1

List 2 – Land Ambulance Primary Care Paramedic Equipment

	Equipment Description	EHSB Standard No.	Minimum Quantity
	Cots, Stretchers and Accessories		
1.	cot, lift assist **OR** cot, multi-level, lift in	080 **OR** 085	1
2.	restraining straps, cot	300	1
3.	infant restraint device	165	1

	Equipment Description	EHSB Standard No.	Minimum Quantity
4.	lifting chair	205	1
5.	stretcher, adjustable break-away	345	1
6.	restraining straps, adjustable break-away & spinal board	305	1
7.	stretcher, portable	355	1
	Immobilization Equipment		
8.	cervical collars, adult	070	2 each size **or** equivalent multi-size
9.	cervical collars, pediatric	070	2 each size **or** equivalent multi-size
10.	spinal board, quick connect	325	1
11.	spinal immobilization extrication device	330	1
12.	splint, multipurpose or malleable	335	4
13.	splint, traction	340	1
	Kits		
14.	burn kit	035	1
15.	first response kit	125	1
16.	mass casualty incident kit	220	1
17.	obstetrical kit	245	1
18.	symptom relief kit	400	1
	Oxygen/Suction Equipment and Accessories		
19.	airways, nasopharyngeal (complete range of sizes to accommodate adult patients)	005	2 sets
20.	airways, oropharyngeal (complete range of sizes - infant to large adult)	010	1 set
21.	bag-valve-mask resuscitator, adult	015	1

	Equipment Description	EHSB Standard No.	Minimum Quantity
22.	bag-valve-mask resuscitator, pediatric	020	1
23.	hydrophobic submicron filter	160	2
24.	lubricant, water-based	N/A	4
25.	nebulized medication delivery mask	235	2
26.	oxygen cylinders, portable	247	2
27.	oxygen cylinder(s), vehicle	248	N/A
28.	oxygen flowmeter, vehicle	250	1
29.	oxygen mask, adult high concentration	255	1
30.	oxygen mask, high concentration/low flow	260	2
31.	oxygen mask, pediatric simple	265	2
32.	oxygen nasal cannula	270	1
33.	oxygen pressure regulator, vehicle (for use with "M" cylinder)	280	1
34.	oxygen supply tubing	285	2
35.	resuscitation mask, adult	310	1
36.	resuscitation mask, pediatric	315	2
37.	suction catheters	360	2 each size
38.	suction tip, wide bore type	365	2
39.	suction tip, Yankeur type	370	2
40.	suction unit, collection container (Vehicle)	375	2
41.	suction unit, tubing	390	2
42.	suction unit, vehicle	395	1
	Cardiac Monitor/Defibrillator and Supplies		
43.	cardiac monitor/defibrillator and patient care monitoring devices (PCP)	045	1
44.	cardiac monitor/defibrillator, defibrillation pads	050	2 sets of 2 adult pads
45.	cardiac monitor/defibrillator, ECG cable	055	1
46.	cardiac monitor/defibrillator, ECG monitoring electrodes	060	2 sets

	Equipment Description	EHSB Standard No.	Minimum Quantity
47.	cardiac monitor/defibrillator, ECG paper	N/A	2 (includes 1 spare)
48.	razor, disposable	N/A	2
	Wound Management/Patient Care Supplies		
49.	adhesive tape, medical	N/A	2
50.	alcohol swab	N/A	10
51.	bandage, conforming gauze roll	N/A	5
52.	bandage, triangular	N/A	6
53.	blood pressure cuff/manometer (manual), adult	025	1
54.	blood pressure cuff/manometer (manual), adult XL	025	1
55.	blood pressure cuff/manometer (manual), pediatric	030	1
56.	cold pack	N/A	2
57.	dressing, abdominal	N/A	4
58.	dressing, hemostatic	092	2
59.	dressing, pressure	N/A	4
60.	eye pad	N/A	6
61.	gauze pad	N/A	10
62.	irrigation fluid	195	1,000 ml total
63.	pediatric emergency tape	N/A	1
64.	shears	N/A	1
65.	stethoscope	N/A	1 **or** personal issue
66.	thermometer	406	1
67.	tourniquet, arterial	011	1
	Personal Protective Equipment		
68.	contaminated material containment bag	N/A	6
69.	coveralls/gowns, disposable	090	4

	Equipment Description	EHSB Standard No.	Minimum Quantity
70.	eyewear, protective (safety)	115	2 **or** personal issue
71.	face shield	120	2 or personal use
72.	gloves, non-sterile	130	10 pairs each size
73.	gloves, safety	135	2 pairs **or** personal issue
74.	hand rub, antiseptic	150	3
75.	helmet, safety	155	2 **or** personal issue
76.	particulate respirator mask	290	10
77.	sharps container	320	1
78.	surgical mask	N/A	4
79.	vests, high visibility	415	2 **or** personal issue
Blankets/Linens			
80.	blanket	N/A	2
81.	blankets, disposable	N/A	2
82.	pillow	N/A	2
83.	pillow case	N/A	2
84.	sheets	N/A	2
85.	towel	N/A	4
Miscellaneous			
86.	bed pan	N/A	1
87.	emesis bag	N/A	4

	Equipment Description	EHSB Standard No.	Minimum Quantity
88.	tissues, facial	N/A	2 boxes
89.	tissue, toilet	N/A	1 roll
90.	urinal	N/A	1

List 3 – ERV Equipment

List 3(a) – ERV Equipment - Responder

	Equipment Description	EHSB Standard No.	Minimum Quantity
1.	burn kit	035	1
2.	cardiac monitor/defibrillator and patient care monitoring devices (PCP)	045	1
3.	cardiac monitor/defibrillator, defibrillation pads	050	2 sets of 2 adult pads
4.	cardiac monitor/defibrillator, ECG cable	055	1
5.	cardiac monitor/defibrillator, ECG monitoring electrodes	060	2 sets
6.	cardiac monitor/defibrillator, ECG paper	N/A	2 (includes 1 spare)
7.	eyewear, protective (safety)	115	1 **or** personal issue
8.	face shield	120	2 or personal use
9.	first response kit (fully stocked)	125	1
10.	gloves, non-sterile	130	2 pairs each size
11.	gloves, safety	135	1 pair **or** personal issue
12.	helmet, safety	155	1 **or** personal issue

	Equipment Description	EHSB Standard No.	Minimum Quantity
13.	mass casualty incident kit	220	1
14.	obstetrical kit	245	1
15.	razor, disposable	N/A	1
16.	spinal immobilization extrication device	330	1
17.	splint, multi-purpose/malleable	335	2
18.	splint, traction	340	1
19.	symptom relief kit	400	1
20.	vest, high visibility	415	1

List 3(b) – ERV Equipment – Support/Command

	Equipment Description	EHSB Standard No.	Minimum Quantity
1.	eyewear, protective (safety)	115	1 **or** personal issue
2.	face shield	120	2 or personal use
3.	first response kit	125	1
4.	gloves, safety	135	1 pair **or** personal issue
5.	helmet, safety	155	1 **or** personal issue
6.	mass casualty incident kit	220	1
7.	vest, high visibility	415	1

List 4 – Land Ambulance/ERV Advanced Care Paramedic Equipment and Medication

In addition to equipment contained in the Land Ambulance Primary Care Paramedic Equipment List (List 2), ambulances designated as Advanced Care Paramedic (ACP) ambulances shall carry the following equipment in the quantities listed. ERVs staffed with one (1) ACP shall carry the following equipment in the quantities listed.

Ambulances staffed with two (2) ACPs or ERVs staffed with one (1) ACP are **exempt** from having to carry a separate Symptom Relief Kit (MOHLTC Standard #400).

	Equipment Description	EHSB Standard No.	Minimum Quantity
Advanced Airway Kit			
1.	kit - Soft sided, maximum loaded weight 12.244 kilograms (27 lbs)	N/A	1
2.	atomization device, intranasal	012	2
3.	chest drain valve	075	1
4.	endotracheal tubes – oral	095	1 each size except 7.0, 7.5 & 8.0 (2 each)
5.	endotracheal tube, extender device	100	2
6.	endotracheal tube, securing device	105	2
7.	endotracheal tube, stylette	110	2
8.	laryngoscope blades	200	1 each size
9.	laryngoscope handle	200	2
10.	lubricant, water-based	N/A	2
11.	magill forceps	215	1
12.	metered dose inhaler (MDI), aerosolization adapter	225	2
13.	metered dose inhaler (MDI), valved holding chamber	230	2

	Equipment Description	EHSB Standard No.	Minimum Quantity
14.	qualitative end-tidal CO2 detector	295	2
15.	suction catheter	360	2 each size
16.	thoracostomy device	410	2
	Cardiac Monitor/Defibrillator and Accessories		
17.	cardiac monitor/defibrillator and patient care monitoring devices (ACP)	040	1
18.	cardiac monitor/defibrillator, defibrillation pads	050	2 sets of 2 adult pads
19.	cardiac monitor/defibrillator, ECG cable	055	1
20.	cardiac monitor/defibrillator, ECG monitoring electrodes	060	sufficient quantities to monitor 2 patients
21.	cardiac monitor/defibrillator, ECG paper	N/A	2 (includes 1 spare)
22.	razor, disposable	N/A	2
	Intravenous and Medication Kit		
23.	kit - Soft sided, maximum loaded weight 9.07 kilograms (20 lbs). Shall include separate and clearly identifiable protective cases for both controlled substances (e.g. opiates and benzodiazepines) and other medications.	N/A	1
	Intravenous Supplies		
24.	alcohol preps	N/A	10
25.	atomization device, intranasal	012	2
26.	dressing, clear sterile	N/A	6
27.	intraosseous (IO) needles	170	2 each size
28.	intravenous catheters	175	2 each size
29.	intravenous drip tubing	180	2
30.	intravenous drip tubing, pediatric	181	2

	Equipment Description	EHSB Standard No.	Minimum Quantity
31.	intravenous pressure infuser	185	1
32.	intravenous solution (0.9% Sodium Chloride)	190	2 litres, any combination
33.	needles	240	2 each size
34.	pediatric emergency tape	N/A	1
35.	saline flush solutions	N/A	2
36.	syringe, medical	405	2 each size
37.	tourniquet	N/A	2

Medications

The quantity of medications listed below is the minimum total amount to be carried in an ALS ambulance and includes medications carried in the Intravenous/Medication Kit and medications stored within the vehicle. A minimum of 50% of each medication listed (enough to treat one [1] patient) shall be carried in the Intravenous/Medication Kit.

38.	acetaminophen (960 – 1,000 mg/dose)	N/A	1920 mg
39.	adenosine (6 mg and/or 12 mg preparations)	N/A	36 mg total
40.	ASA (81 mg/tablet)	N/A	6 tablets
41.	atropine sulphate injection	N/A	2 mg
42.	calcium gluconate (1 g/10 mL = 10%)	N/A	4 g
43.	10% dextrose in water injection (10 g/100 ml) **OR** 50% dextrose in water injection (25 g/50 ml)	N/A	4
44.	dopamine HCL solution (200 mg/250 ml) OR dopamine HCL injection (200 mg/5 ml)	N/A	2 bags **or** 2
45.	epinephrine 1 mg/ml = 1:1,000	N/A	10 mg
46.	epinephrine 0.1 mg/ml = 1:10,000	N/A	10 mg
47.	glucagon	N/A	2 mg
48.	glucose, oral (paste, tablets or other formulation) 15 g/dose	N/A	2
49.	ibuprofen (400 mg/dose)	N/A	800 mg
50.	ketorolac (10-15 mg/dose)	N/A	2

	Equipment Description	EHSB Standard No.	Minimum Quantity
			vials/amps
51.	lidocaine injection **OR** amiodarone injection	N/A	600 mg **or** 600 mg
52.	lidocaine spray (10 mg/spray) with 2 spray nozzles/canister	N/A	2
53.	midazolam injection	N/A	20 mg
54.	morphine sulphate injection	N/A	20 mg total
55.	naloxone injection (0.4-0.8 mg/dose)	N/A	6 doses
56.	nitroglycerin, lingual aerosol (0.4 mg/dose) **OR** nitroglycerin, tablets (0.3 or 0.4 mg/dose)	N/A	2 canisters **or** 2 bottles
57.	salbutamol inhalation aerosol (100 mcg/puff)	N/A	2 canisters
58.	salbutamol inhalation solution	N/A	25 mg total
59.	sodium bicarbonate injection (50 mEq/50 ml)	N/A	2

List 5 – Land Ambulance Auxiliary Equipment and Medication

A land ambulance that carries any of the following items shall follow the applicable EHSB Standard and Minimum Quantity with respect to those items.

	Equipment Description	EHSB Standard No.	Minimum Quantity
Equipment			
1.	Continuous Positive Airway Pressure Unit	A-910	N/A
2.	Endotracheal Tube – Nasal	A-912	1 each size
3.	Meconium Aspirator Adapter	A-915	N/A
4.	Restraining Straps, Folding Stretcher	A-918	1
5.	Stretcher, Folding	A-920	1

	Equipment Description	EHSB Standard No.	Minimum Quantity
Medication			
6.	dimenhydrinate	N/A	100 mg
7.	diphenhydramine	N/A	100 mg
8.	furosemide	N/A	200 mg
9.	topical antibiotic	N/A	sufficient quantities to treat 2 patients
10.	xylometazoline 0.1%	N/A	2 bottles
Intravenous and Medication Kit / Intravenous Supplies for PCP Autonomous IV			
11.	kit - Soft sided, maximum loaded weight 9.07 kilograms (20 lbs).	N/A	1
12.	alcohol preps	N/A	10
13.	dressing, clear sterile	N/A	6
14.	intravenous catheters	175	2 each size
15.	intravenous drip tubing	180	2
16.	intravenous drip tubing, pediatric	181	2
17.	intravenous pressure infuser	185	1
18.	intravenous solution (0.9% Sodium Chloride)	190	2 litres, any combination
19.	needles	240	2 each size
20.			
21.	saline flush solutions	N/A	2
22.	syringe, medical	405	2 each size
23.	tourniquet	N/A	2

	Equipment Description	EHSB Standard No.	Minimum Quantity
Intravenous Medication for PCP Autonomous IV			
	The quantity of medications listed below is the minimum total amount to be carried in an ambulance and includes medication carried in the Intravenous and Medication Kit for PCP Autonomous IV and medication stored within the vehicle for ambulances staffed with a PCP authorized for PCP Autonomous IV. A minimum of 50% (enough to treat one [1] patient) shall be carried in the Intravenous and Medication Kit for PCP Autonomous IV.		
24.	10% dextrose in water injection (10 g/100 ml) **OR** 50% dextrose in water injection (25 g/50 ml)	N/A	4

Part B – Equipment Standards

B

Part B – Equipment Standards

Airway, Nasopharyngeal - No. 005

Minimum requirements

Nasopharyngeal airways shall:

1. be constructed of a soft, medical grade material;
2. be for single patient use;
3. be constructed to minimize kinking in use;
4. be designed with the buccal end of the airway that is flanged and expected to fit against the external nares and the pharyngeal end shall be beveled;
5. be provided in a range of sizes suited for use with adults;
6. be compatible with all resuscitation masks meeting MOHLTC Standard #310;
7. be individually packaged;
8. have the size of the airway readily apparent on examination of the package;
9. be packaged as sterile in properly sealed packages capable of maintaining the sterile integrity of the airway under normal conditions of shipping and storage. The word "Sterile" shall be readily apparent on examination of the package.

Reference

ANSI Z79.3 Anaesthetic Equipment-Oropharyngeal and Nasopharyngeal Airways

Airway, Oropharyngeal - No. 010

Minimum requirements

Oropharyngeal airways shall:

1. be constructed of pliable, transparent, medical grade material;
2. be for single patient use;
3. be designed to keep the base of the tongue in a forward position while the airway is in use;
4. be designed to minimize collapse when bitten by the patient;
5. be a one-piece design;
6. be available in sizes ranging from infant to large adult;
7. be a single (Gudel) or double lumen (Berman) type;
8. be designed to allow easy recognition and clearing of blockage of the lumen by secretions, blood, emesis, *etc*.;
9. be individually packaged;
10. have the size of the airway readily apparent on examination of the package;
11. be packaged as sterile in properly sealed packages capable of maintaining the sterile integrity of the airway under normal conditions of shipping and storage. The word "Sterile" shall be readily apparent on examination.

Reference

ANSI Z79.3 Anaesthetic Equipment-Oropharyngeal and Nasopharyngeal Airways

Arterial Tourniquet - No. 011

Minimum requirements

Arterial tourniquets shall:

1. be constructed of lightweight/durable materials;
2. be single use, disposable;
3. provide circumferential pressure to any extremity with complete occlusion of arterial blood flow;
4. allow for incremental increases in tension;
5. provide a lock or securing mechanism to ensure maintenance of desired tension; and
6. allow for rapid release of tension when necessary.

Reference

N/A

Atomization Device, Intranasal - No. 012

Minimum requirements

Intranasal atomization device shall:

1. be constructed with a soft, conical plug;
2. be constructed to form a seal within the nostril and medication being delivered;
3. be capable of delivering atomized drugs into a fine mist of particles (<100 microns in size);
4. be individually packaged;
5. be for single patient use;
6. be in a sealed package, capable of maintaining the clean integrity of the atomizer under normal conditions of shipping and storage; and;
7. attach to or is part of a device (*e.g.* syringe) that allows appropriate unit dose measurements.

Bag-Valve-Mask Resuscitator, Adult - No. 015

Minimum requirements

Bag-Valve-Mask resuscitators shall include all of the following components:

1. one (1) adult ventilation bag with a minimum capacity sufficient to adequately ventilate a large adult;
2. one (1) non-rebreathing valve with single diaphragm;
3. one (1) intake valve;
4. one (1) way exhalation port that vents expired gases to the atmosphere;
5. one (1) reservoir assembly with a capacity equal to or greater than the ventilation bag capacity.

Bag-valve-mask resuscitators shall:

1. maintain the normal dimensions, configuration and operational performance characteristics of all components, by resisting deterioration caused by ageing, storage conditions, temperature extremes and atmospheric conditions;
2. be suitable for manual operation and meet the current AHA and AARC guidelines for resuscitation;
3. be constructed of materials capable of being cleaned and disinfected, utilizing methods and agents normally and readily available to ambulance service operators when reusable equipment is utilized;
4. be constructed of transparent medical grade materials;
5. have a standard 15 mm inside diameter and 22 mm outside diameter fitting to attach to resuscitation masks and endotracheal tubes;
6. admit air rapidly through the inlet valve and not allow it to escape unless the bag is compressed;
7. have an integral oxygen stem attached to the inlet valve which shall allow gas to flow into the intake valve when used with oxygen and vent excess oxygen to the atmosphere;
8. have a non-rebreathing valve which includes a single diaphragm to prevent rebreathing of the patient's exhaled gas;
9. allow the patient to breathe freely from the atmosphere should the device become occluded;
10. resist jamming due to the presence of debris;
11. be easy to disassemble and clean, with components designed to prevent incorrect assembly when reusable equipment is utilized;
12. not exceed 10 ml valve dead space;
13. have a dead space for the valve and mask not exceeding 175 ml;

14. not allow the non-rebreathing valve to jam despite temperature extremes, moisture, or supplemented oxygen inflow as great as 15 litres per minute;
15. supply oxygen concentrations in excess of 40% with supplemental oxygen when used without an oxygen reservoir;
16. maintain an oxygen concentration not less than 100% with the reservoir assembly attached and supplied with an oxygen inflow of 12 litres per minute, a tidal volume of 500 ml and a cycle rate of 12 cycles per minute.

Reference

AARC Guidelines, September 2004, Vol 49/9

AHA Guidelines for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care, 2015

Bag-Valve-Mask Resuscitator, Pediatric - No. 020

Minimum requirements

Bag-valve-mask resuscitators shall include of the following components:

1. one (1) child ventilation bag with a minimum capacity sufficient to adequately ventilate a pediatric patient;
2. pop-off pressure relief valve;
3. one (1) patient non-rebreathing valve with single diaphragm;
4. one (1) intake valve;
5. one (1) reservoir assembly with a capacity equal to or greater than the ventilation bag capacity.

Bag-valve-mask resuscitators shall:

1. maintain the normal dimensions, configuration and operational performance characteristics of all components, by resisting deterioration caused by ageing, storage conditions, temperature extremes and atmospheric conditions;
2. be constructed of materials capable of being cleaned and disinfected, utilizing methods and agents normally and readily available to ambulance service operators when reusable equipment is utilized;
3. be constructed of transparent medical grade materials;
4. be suitable for manual operation and meet the current AHA and AARC guidelines for resuscitation;
5. provide a minimum volume of 300 ml;
6. be capable of re-expanding fully from a complete compression at least 50 times per minute;
7. have a standard 15 mm inside diameter and 22 mm outside diameter fitting to attach to resuscitation masks and endotracheal tubes;
8. admit air rapidly through the inlet valve and not allow it to escape unless the bag is compressed;
9. have an integral oxygen stem attached to the inlet valve which shall allow gas to flow into the intake valve when used with oxygen and vent excess oxygen to the atmosphere;
10. have a non-rebreathing valve which includes a single diaphragm to prevent rebreathing of the patient’s exhaled gas;
11. allow the patient to breathe freely from the atmosphere should the device become occluded;
12. not allow the non-rebreathing valve to jam despite temperature extremes, moisture, or supplemented oxygen inflow as great as 15 litres per minute;
13. have a valve assembly capable of releasing excess pressure within the bag;

14. resist jamming due to the presence of debris;
15. be easy to disassemble and clean, with components designed to prevent incorrect assembly when reusable equipment is utilized;
16. not exceed 10 ml valve dead space;
17. have a dead space for the valve and mask not exceeding 175 ml;
18. supply oxygen concentrations in excess of 40% with supplemental oxygen when used without an oxygen reservoir;
19. maintain an oxygen concentration not less than 100% with the reservoir assembly attached and supplied with an oxygen inflow of 12 litres per minute, a tidal volume of 300 ml and a cycle rate of 12 cycles per minute.

Reference

AARC Guidelines, September 2004, Vol 49/9

AHA Guidelines for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care, 2015

Blood Pressure Cuff/Manometer (Manual), Adult - No. 025

Minimum requirements

Adult blood pressure devices shall:

1. be constructed of materials capable of being easily cleaned and disinfected;
2. have a cuff and closure system suitable for range of adult sizing/positioning;
3. have a non-pin-indexed pneumatic pressure gauge capable of displaying readings in the range of 0-300 mmHg;
4. have an inflation bulb equipped with a pressure release control.

Reference

ISO 81060 – 1:2007

Blood Pressure Cuff/Manometer (Manual), Pediatric – No. 030

Minimum requirements

Pediatric blood pressure devices shall:

1. be constructed of materials capable of being easily cleaned and disinfected;
2. have a cuff and closure system suitable for a range of pediatric sizing/positioning;
3. have a non-pin indexed pneumatic pressure gauge capable of displaying readings in the range of 0-300 mmHg;
4. have an inflation bulb equipped with a pressure release control.

Reference

ISO 81060 – 1:2007

Burn Kit - No. 035

Minimum requirements

The contents of the Burn Kit shall be sterile and contain the following:

	Equipment Description	EHSB Standard No.	Minimum Quantity
1.	bandage, conforming gauze roll	N/A	4
2.	burn sheet, approximately 150 cm x 225 cm	N/A	1
3.	burn sheets, approximately 37 cm x 37 cm	N/A	2
4.	burn sheets, approximately 75 cm x 75 cm	N/A	2
5.	gloves, sterile	140	2 pairs
6.	irrigation fluid	195	Minimum 1,000 ml

Burn sheet material shall:

1. be strong enough when wet or dry to not tear easily during application or removal;
2. be non-adherent to the site of the injury, and shall not readily decompose, polymerize, or react;
3. not repel water;
4. contain no known hazardous materials;
5. be individually wrapped, lint free with the size marked clearly on the packaging.

The burn kit container shall:

1. be constructed of sturdy, crush-resistant material;
2. be able to be safely stored and secured in the vehicle;
3. be labeled “Burn Kit” with the contents itemized;
4. be labeled with expiry date;
5. be sealed in a way to ensure contents remain sterile.

Reference

N/A

Cardiac Monitor/Defibrillator and Patient Monitoring Devices (ACP) - No. 040

Minimum requirements

Cardiac monitor/defibrillators and patient monitoring devices shall:

1. be capable of patient monitoring, defibrillation, and synchronized cardioversion;
2. have monitoring technologies with diagnostic measurements for S-T segment analysis for 12-lead ECG acquisition;
3. be able to monitor oxygen saturation of arterial hemoglobin (SpO_2);
4. be able to monitor end-tidal CO_2, including numeric value and waveform;
5. be programmable to energy settings for defibrillation, transcutaneous pacing and synchronized cardioversion as described in the current MOHLTC *Advanced Life Support Patient Care Standards*;
6. be able to automatically analyze electrocardiographic rhythms to determine if defibrillation is required;
7. be easy to clean and disinfect;
8. be water-resistant;
9. be capable of '3', '4' or '5' lead ECG monitoring through electrodes and/or ECG monitoring through defibrillation pads;
10. have data collection capability and provide specific event summary reports;
11. have a strip chart printer and ECG paper designed for the device;
12. have internal operational checks;
13. have individual, adjustable volume of QRS beeper, voice prompts, and other standard alerts;
14. have both AC and DC power modules;
15. have one spare battery;
16. have a software configuration mode;
17. have a diagnostic mode;
18. be equipped with a carrying case.

Reference

ANSI/AAMI IEC 60601-2-4:2010

ANSI/AAMI EC13:2002 (R2007)

Cardiac Monitor/Defibrillator and Patient Monitoring Devices (PCP) - No. 045

Minimum requirements

Cardiac monitor/defibrillators and patient monitoring devices shall:

1. be capable of patient monitoring and defibrillation;
2. have monitoring technologies with diagnostic measurements for S-T segment analysis for 12-lead ECG acquisition;
3. be able to monitor oxygen saturation of arterial hemoglobin (SpO_2);
4. be programmable to energy settings for defibrillation as described in the current MOHLTC *Advanced Life Support Patient Care Standards*;
5. be able to automatically analyze electrocardiographic rhythms to determine if defibrillation is required;
6. be easy to clean and disinfect;
7. be water-resistant;
8. be capable of '3', '4' or '5' lead ECG monitoring through electrodes and/or ECG monitoring through defibrillation pads;
9. have data collection capability and provide specific event summary reports;
10. have a strip chart printer and ECG paper designed for the device;
11. have internal operational checks;
12. have individual, adjustable volume of QRS beeper, voice prompts, and other standard alerts;
13. have both AC and DC power modules;
14. have one spare battery;
15. have a software configuration mode;
16. have a diagnostic mode;
17. be equipped with a carrying case.

Reference

ANSI/AAMI IEC 60601-2-4:2010

ANSI/AAMI EC13:2002 (R2007)

Cardiac Monitor/Defibrillator, Defibrillation Pads - No. 050

Minimum requirements

Defibrillation pads shall:

1. be disposable;
2. be soft and flexible;
3. be able to function in a variety of temperature and environmental conditions;
4. be constructed of a thin flexible conductor, protective polymer backing and a hydro-gel adhesive;
5. provide delivery of current for defibrillation, transcutaneous pacing and synchronized cardioversion;
6. be soft, flexible and oval-shaped to conform to body contours for larger surface contact and adhesion;
7. serve various functions: ECG monitoring, defibrillation, transcutaneous pacing and synchronized cardioversion;
8. be individually packaged;
9. be labeled with size.

Reference

ANSI/AAMI DFSO:2003

ANSI/AAMI/ISO EC13:2002 (R) 2007

Cardiac Monitor/Defibrillator, ECG Cable - No. 055

Minimum requirements

ECG cables shall:

1. provide ‘3’, ‘4’ or ‘5’ lead ECG monitoring through electrodes;
2. provide 12-lead ECG monitoring through electrodes;
3. be easy to clean and disinfect;
4. be water-resistant;
5. be colour-coded and/or labeled to designate appropriate limb designation.

Reference

ANSI/AAMI EC53:2002 (R) 2007

Cardiac Monitor/Defibrillator, ECG Monitoring Electrodes - No. 060

Minimum requirements

ECG monitoring electrodes shall:

1. be capable of monitoring neonatal, pediatric and adults patients;
2. be disposable;
3. have fluid resistant adhesive;
4. be capable of interfacing with ECG cable;
5. have a conductive gel centre;
6. provide for general purpose monitoring and diagnostics;
7. be flexible and conform to body surfaces;
8. be sealed in light resistant packaging.

Reference

ANSI/AAMI EC53:2002 (R) 2007

Cervical Collar - No. 070

Minimum requirements

Cervical collars shall:

1. have sufficient padding at all points of contact with the patient to ensure patient comfort and prevent possible injury;
2. have an anterior opening to allow visualization of the anterior area of the neck and palpation of the carotid pulse;
3. incorporate a method (either as part of the collar or via a separate external device) for determination of the required collar size, prior to application;
4. be x-ray translucent;
5. be available in a variety of sizes to fit infants, children and adults while accommodating various neck types or be of a design such that a single collar can be adjusted to accommodate various neck sizes and types.

Reference

ASTM F1559-94 (2007)

Chest Drain Valve - No. 075

Minimum requirements

Chest drain valves shall:

1. be disposable;
2. let air and fluids out of the chest cavity, without any reflux back into the chest cavity;
3. either connect directly to, or over, the thoracostomy device;
4. be constructed of transparent material;
5. be individually wrapped and sealed.

Reference

N/A

Cot, Lift Assist - No. 080

Minimum requirements

Lift assist cots shall:

1. have the ability to be shortened as to facilitate its use in confined areas (*e.g.* elevators, tight corners, *etc*.);
2. have an adjustable back rest that allows patient positioning from supine to fully sitting;
3. have lockable side rails that can be positioned in such a way as to facilitate the safe movement of a patient on or off the cot;
4. be manufactured with materials that can be easily cleaned and disinfected;
5. be compatible with a cot retention system that is compliant with the performance requirements contained in the current version of the *Ontario Provincial Land Ambulance and Emergency Response Vehicle Standard*;
6. have at least four (4) omni-directional wheels with solid rubber or equivalent tires; wheels mounted to ensure balanced weight distribution;
7. be equipped with a patient securing system (MOHLTC Standard #300);
8. have an integrated, or removable intravenous pole that securely locks in place when in the upright position;
9. have the following dimensions/tolerances:
    a. loading wheel height to be sufficient to allow cot to be loaded into all ambulances approved for use in the Province of Ontario, without manually lifting the front end of the cot off the ground;
    b. be capable of carrying, as a minimum, the weight of a 90th percentile male;
    c. physical dimensions of the cot bed to accommodate, as a minimum, a 90th percentile male.

Reference

Canadian Community Health Survey

Cot, Lift-in - No. 085

Minimum requirements

Lift-in cots shall:

1. have the ability to be shortened as to facilitate its use in confined areas (*e.g.* elevators, tight corners, *etc*.);
2. have an adjustable back rest that allows patient positioning from supine to fully sitting;
3. have lockable side rails that can be positioned in such a way as to facilitate the safe movement of a patient on or off the cot;
4. be manufactured with materials that can be easily cleaned and disinfected;
5. be compatible with a cot retention system that is compliant with the performance requirements contained in the current version of the *Ontario Provincial Land Ambulance and Emergency Response Vehicle Standard*;
6. have at least four (4) omni-directional wheels with solid rubber, or better tires; wheels mounted to ensure balanced weight distribution;
7. be equipped with a patient securing system (MOHLTC Standard #300);
8. have an integrated, or removable intravenous pole that securely locks in place when in the upright position;
9. have the following dimensions/tolerances:
   a. be capable of carrying, as a minimum, the weight of a 90th percentile male;
   b. physical dimensions of the cot bed to accommodate, as a minimum, a 90th percentile male.

Reference

Canadian Community Health Survey

Coveralls/Gowns, Disposable - No. 090

Minimum requirements

Coveralls/gowns shall:

1. be disposable;
2. be elasticized at the wrists and ankles (for coveralls);
3. cover the wearer front and back;
4. have ties that are easily accessible for the user (for gowns);
5. be fluid resistant to splashes and sprays;
6. be available in sizes to accommodate wearer.

Reference

ANSI/ISEA 101-1996 standards

Dressing, Hemostatic - No. 092

Minimum requirements

Hemostatic dressings shall be:

1. able to accelerate the clotting process of blood;
2. single use, disposable;
3. sterile;
4. approved for this indication by Health Canada, Therapeutic Products Directorate.

Reference

N/A

Endotracheal Tube – Oral - No. 095

Minimum requirements

Endotracheal tubes shall:

1. be disposable;
2. have a 15 mm compatible adapter with push and twist connections;
3. be constructed of pliable, medical grade material that resists kinking and is transparent;
4. be designed to allow for insertion via the oral pharynx into the trachea;
5. allow a full magill curve;
6. have a radiopaque line running the length of the tube;
7. have an angled cut end with an extra hole or eye;
8. have graduated measurement markers along the length of the tube;
9. have a high-volume, low-pressure cuff (cuffed endotracheal tubes only);
10. have a self-sealing cuff valve for inflating the cuff (cuffed endotracheal tubes only);
11. have a visual indicator to confirm the cuff is inflated (cuffed endotracheal tubes only);
12. be individually packaged and sealed;
13. be sterile;
14. be clearly labeled with size of endotracheal tube;
15. be stocked in the following sizes:
    a. Non-cuffed Endotracheal Tubes: #3, #3.5, #4, #4.5, #5, #5.5
    b. Cuffed Endotracheal Tubes: #6, #6.5, #7, #7.5, #8

Reference

ISO 5361:1999

Endotracheal Tube, Extender Device - No. 100

Minimum requirements

Endotracheal tube extenders shall:

1. be disposable;
2. have 22 mm female/15 mm male device end connector and 15 mm male patient end connector;
3. include 360° swivel head adapter and double swivel elbow;
4. be made with corrugated tubing that can direct the weight of the airway tree away from the end of an endotracheal tube;
5. have a length up to a maximum of 210 mm;
6. have “push and twist” connections;
7. be sterile.

Reference

ISO 5361:1999

Endotracheal Tube, Securing Device - No. 105

Minimum requirements

Endotracheal tube securing devices shall be:

1. disposable;
2. capable of limiting the movement of an endotracheal tube to less than 1 cm in any direction;
3. adjustable to various sizes;
4. stocked clean.

Reference

N/A

Endotracheal Tube, Stylette - No. 110

Minimum requirements

Endotracheal tube stylettes shall:

1. be disposable;
2. cap or hoop at operator end to maintain desired length;
3. be easy to telescope through an endotracheal tube;
4. be made from semi-rigid, malleable material;
5. have a soft distal tip;
6. be individually wrapped in sterile packaging;
7. be available in sizes appropriate to fit standard endotracheal tubes;
8. have the size clearly visible on the package.

Reference

N/A

Eyewear, Protective (Safety) - No. 115

Minimum requirements

Protective safety eyewear shall:

1. be capable of being cleaned and disinfected;
2. be able to fit a variety of head sizes;
3. contain scratch-resistant lenses;
4. contain side-shields or be wrap-around style;
5. be splash resistant;
6. be capable of being used in conjunction with corrective lenses;
7. be able to withstand high-impact collisions.

Reference

CSA Standard Z94.3 Eye and Face Protectors
ANSI/ISEA Z87.1 Personal Eye and Face Protection Devices

Face Shield - No. 120

Minimum requirements

Face shields shall:

1. cover the entire face of the user by extending from the top of the forehead to below the chin;
2. be manufactured of a clear, anti-fog, scratch resistant material;
3. be easy to clean and disinfect, or be disposable;
4. be available in sizes that can accommodate a broad range of users, or be adjustable to accommodate a broad range of users;
5. be capable of being worn over prescription eye glasses.

Reference

CSA Standard Z94.3 Eye and Face Protectors
ANSI/ISEA Z87.1 Personal Eye and Face Protection Devices

First Response Kit - No. 125

Minimum requirements

Ambulance services may utilize one (1) or more carrying cases for the purpose of transporting the required oxygen, accessory and first aid equipment described in this standard. Each case used shall meet the applicable minimum requirements for carrying cases described in this standard.

The case, or combination of cases, shall contain the following oxygen and accessory equipment:

	Equipment Description	EHSB Standard No.	Minimum Quantity
1.	airway, oropharyngeal	010	1 each size
2.	bag-valve-mask resuscitator, adult	015	1
3.	bag-valve-mask resuscitator, pediatric	020	1
4.	hydrophobic submicron filter	160	1
5.	blood pressure cuff/manometer (manual), adult	025	1
6.	blood pressure cuff/manometer (manual), pediatric	030	1
7.	oxygen cylinder, portable	247	1
8.	oxygen mask, adult high concentration	255	1
9.	oxygen mask, pediatric simple	265	1
10.	oxygen nasal cannula	270	1
11.	oxygen pressure regulator, first response kit	275	1
12.	resuscitation mask, adult	310	1
13.	stethoscope	N/A	1 **or** personal issue
14.	suction unit, hand operated **OR** suction unit, portable electric	380 **OR** 385	1

The case, or combination of cases, shall contain the following first aid supplies:

	Equipment Description	EHSB Standard No.	Minimum Quantity
1.	bandage, conforming gauze roll	N/A	2
2.	bandage, triangular	N/A	6

	Equipment Description	EHSB Standard No.	Minimum Quantity
3.	cervical collar	070	1 each size **or** multi-size
4.	dressing, hemostatic	092	2
5.	dressing, pressure	N/A	2
6.	eye pad	N/A	2
7.	gauze pad	N/A	4
8.	gloves, non-sterile	130	2 pairs
9.	hand rub, antiseptic	150	1
10.	irrigation fluid	195	Minimum 1,000 ml
11.	tape, adhesive	N/A	2 rolls
12.	tourniquet, arterial	011	1

All carrying cases shall:

1. allow for the contents to be contained while the kit is transported and during opening;
2. not exceed 12.25 kg (27 lbs) when fully loaded;
3. have a shoulder strap and carrying handle(s). If used to secure the case in the vehicle, carry handle(s) shall be capable of restraining a minimum of ten (10) times the weight of the bag and its contents;
4. allow the kit to remain stable when placed on the ground or other flat surfaces and should not tip over easily;
5. be easily cleaned and disinfected;
6. remain water resistant under normal operating conditions.

Cases designed to carry oxygen equipment shall:

1. allow for continued provision of oxygen via both therapy and resuscitation adjuncts during transportation of the patient;
2. safely restrain the oxygen cylinder when a force equal to twenty-five (25) times the weight of a fully loaded oxygen tank, is applied to the oxygen tank holder in any direction;
3. protect the cylinder, regulator and gauge from damage when dropped on the corner nearest the oxygen tank valve from a height of 1.3 m (4 ft) to a concrete surface.

Reference

N/A

Gloves, Non-sterile - No. 130

Minimum requirements

Non-sterile gloves shall be:

1. single use, disposable;
2. manufactured of medical grade material;
3. ambidextrous;
4. powder-free;
5. latex free;
6. supplied in sizes to accommodate the hand size of various users.

Reference

ISO 11193-2:2006

Gloves, Safety - No. 135

Minimum requirements

Safety gloves shall:

1. be constructed of a tear-resistant material;
2. have a minimum 10 cm cuff;
3. be flame and heat resistant;
4. be fluid resistant to splash and splatter of blood and infectious materials;
5. be available to fit a wide range of hand sizes.

Reference

ANSI/ISEA 105-2005

Gloves, Sterile - No. 140

Minimum requirements

Sterile gloves shall be:

1. single use, disposable;
2. manufactured of medical grade material;
3. ambidextrous;
4. powder-free;
5. supplied in sizes to accommodate the hand size of various users;
6. packaged as sterile in properly sealed packages capable of maintaining the sterile integrity of the gloves under normal conditions of shipping and storage;
7. clearly labeled with the word “sterile”.

Reference

ISO 10282

Glucometer - No. 145

Minimum requirements

Glucometers shall:

1. be small and portable;
2. be battery powered;
3. provide results within 10 seconds of starting test;
4. be able to provide results with a minimal blood sample (approx. 0.3 microlitre);
5. have an easily readable display;
6. be able to have quality control tests applied to device;
7. have available control solutions for quality control testing;
8. have a functional error range not exceeding +/- 15%.

Reference

ISO 15197:2003

Diabetes Care (2000) 23:1143 – 1148

Hand Rub, Antiseptic - No. 150

Minimum requirements

Antiseptic hand rub shall:

1. be a minimum of 99.9% effective against a broad range of bacteria (including MRSA and VRE) using a minimum of 2.5 ml of solution per 15 second application;
2. be alcohol based (isopropanol or ethanol) - minimum concentration 60%;
3. be available in personal size containers.

Reference

Infection Prevention and Control Best Practices Manual for Land Paramedics, Version 1.0 – March 2007

Helmet, Safety - No. 155

Minimum requirements

Safety helmets shall:

1. be constructed of crush-resistant material;
2. consist of a shell and suspension that is adequate to protect a person's head against impact and against flying or falling small objects;
3. have a removable liner unless the helmet is personal issue;
4. be adjustable to fit a variety of head sizes;
5. have a chin strap;
6. have accessory eye protection that is scratch and impact resistant (MOHLTC Standard #115 or MOHLTC Standard #120);
7. meet or exceed applicable standards for Type 2 (or Type II), Class E helmet as referenced below.

Reference

CSA Standard Z94.1-2005 (R 2013) for Type 2, Class E helmets
ANSI/ISEA Z89.1 – 2009 for Type II safety helmets

CSA Standard Z94.3 Eye and Face Protectors
ANSI/ISEA Z87.1 –Personal Eye and Face Protection Devices

Hydrophobic Submicron Filter - No. 160

Minimum requirements

Hydrophobic submicron filters shall:

1. be for single patient use and disposable;
2. be supplied clean and individually packaged;
3. have a viral and bacterial filtration efficiency of at least 99.99%;
4. have ISO Standard 15 mm inside diameter and 22 mm outside diameter fittings;
5. be available in sizes that are appropriate for adult, pediatric and infant applications.

Reference

ISO 23328-1:2003

Infant Restraint Device - No. 165

Minimum requirements

Infant restraint devices shall:

1. be easy to clean and disinfect;
2. be constructed with one-piece webbing straps with quick-release buckles which securely attach the device to the ambulance cot frames at the minimum of three points;
3. be constructed with a five-point harness system that consists of shoulder, chest, and crotch restraints that secure with a single, quick release buckle. All restraints shall be fully adjustable;
4. be able to be stored and secured safely in an ambulance;
5. be compatible for use with cots carried in the ambulance;
6. be capable of accepting additional head and body support to ensure patient security;
7. meet or exceed CSA standards.

Reference

AAMS Pediatric Restraint Position Paper, October 2007

Intraosseous (IO) Needle - No. 170

Minimum requirements

Intraosseous needles shall:

1. be disposable after one use;
2. be available in sizes appropriate for use in neonates, infants, and children;
3. have a beveled needle with the exact gauge outside diameter that is capable of boring through a bone;
4. have a passageway through the needle to facilitate infusion of fluids and medication;
5. have a rigid needle with removable inner stylet design;
6. have a handle that provides an adequate grip;
7. have a leak-proof twist-lock fitting to attach syringes or IV tubing;
8. be sterile.

Reference

O. Reg. 474/07: Needle Safety under the *Occupational Health and Safety Act*

Intravenous Catheter - No. 175

Minimum requirements

Intravenous catheters shall:

1. be disposable after one use;
2. be available in sizes to support the administration of approved medications and solutions in all patient populations;
3. have an "over the needle" catheter design with the exact gauge outside diameter;
4. have beveled-end needles;
5. be supplied with a protective plastic sheath;
6. have an easy identifiable label and/or coding system (*i.e.* colour) to indicate size;
7. have a leak-proof twist-lock fitting to attach syringes or IV tubing;
8. be sterile.

Reference

ISO 10555-5:1996

Intravenous Drip Tubing - No. 180

Minimum requirements

Intravenous drip tubing shall:

1. be for single use only and disposable;
2. have a minimum of two (2) "Y" medication ports (ideally luer lock to minimize sharps risk);
3. include a spike to access the fluid delivery port;
4. include a roller clamp with groove to adjust flow rate;
5. have a male luer lock adapter at the distal end;
6. be compatible for use with medications or solutions;
7. include a slide clamp / Robert clamp (occlusion clamp) safety clamp;
8. have a compressible drip chamber;
9. be constructed of transparent material;
10. be individually packaged;
11. be labeled "Sterile";
12. be labeled with the drip factor.

Reference

N/A

Intravenous Drip Tubing, Pediatric - No. 181

Minimum requirements

Intravenous drip tubing shall:

1. be for single use only and disposable;
2. have a minimum of two (2) “Y” medication ports (ideally luer lock to minimize sharps risk);
3. include a spike to access the fluid delivery port;
4. include a roller clamp with groove to adjust flow rate;
5. have a male luer lock adapter at the distal end;
6. be compatible for use with medications or solutions;
7. include a slide clamp / Robert clamp (occlusion clamp) safety clamp;
8. have a compressible drip chamber;
9. be constructed of transparent material;
10. be individually packaged;
11. be labeled “Sterile”;
12. be labeled with the drip factor of 60 gtts/ml;
13. have an inline volumetric cylinder to prevent inadvertent administration when not being used with an infusion pump.

Reference

N/A

Intravenous Pressure Infuser - No. 185

Minimum requirements

Intravenous pressure infuser bags shall:

1. have an infusion sleeve for an intravenous solution bag that can be pressurized to increase flow rate;
2. have a pressure limiter to prevent over inflation;
3. have a pressure gauge that is easy to read in low-light conditions;
4. be made of material that permits visualization of the IV solution;
5. be capable of attaching to an IV pole while securing the intravenous solution;
6. be capable of rapid deflation;
7. be easy to clean and disinfect, or be disposable.

Reference

N/A

Intravenous Solution (0.9% Sodium Chloride) - No. 190

Minimum requirements

Intravenous solutions shall:

1. be disposable after one use;
2. be a physiological solution of 0.9% Sodium Chloride, containing 154 mEq/L of sodium+ and chloride;
3. have at least one sealed medication port;
4. have a sealed drip set attachment port;
5. be supplied in a sealed double bag;
6. have easily readable volume calibration;
7. be contained in material that is transparent;
8. be sterile;
9. be labeled with volume enclosed;
10. have the expiry date clearly indicated on the package.

Reference

ISO 15747:2003

Irrigation Fluid - No. 195

Minimum requirements

Irrigation fluid includes USP approved Sterile Saline or Sterile Water.

If in a bottle, the bottle shall:

1. have a leak-resistant closure;
2. be labelled “For Irrigation or Injection Purposes Only”.

If in a bag, the bag shall be:

1. double-bagged;
2. labeled “For Irrigation or Injection Purposes Only”.

Reference

The United States Pharmacopeia (USP)

Laryngoscope, Handle & Blades - No. 200

Minimum requirements

Laryngoscope handles & blades shall:

1. possess a lock fitting if the blade and handles are separate;
2. be available in sizes to accommodate patients from infant to large adult;
3. be made of material that can easily be cleaned and disinfected, or be disposable;
4. have a textured, non-slip surface on the handle;
5. have an energy source (*e.g.* battery).

Reference

ISO 7376:2003

Lifting Chair - No. 205

Minimum requirements

Lifting chairs shall:

1. be manufactured with materials that can be easily cleaned and disinfected;
2. have non-slip handgrips on all carrying handles;
3. have wheels, or tracks, or other method to roll the device;
4. have patient securing straps (MOHLTC Standard #210)
5. have the following dimensions/tolerances:
    a. be capable of carrying, as a minimum, the weight of a 90th percentile male;
    b. physical dimensions of the lifting chair to accommodate, as a minimum, a 90th percentile male.

Reference

ISO 7176-24:2004

Canadian Community Health Survey

Lifting Chair, Restraining Straps - No. 210

Minimum requirements

The lifting chair restraining system shall:

1. consist of two (2) quick release press mechanism “Tang & Receiver” assemblies, [one (1) set to secure the chest/torso, attached to the chair back, one (1) set attached to the seat, to secure patient’s upper legs];
2. be constructed of materials that are easily cleaned and disinfected, minimum two inches in width;
3. have a minimum extended Tang and strap length of 114 cm (45 inches);
4. have a minimum extended Receiver and strap length of 38 cm (15 inches);
5. be capable of restraining, as a minimum, the weight of a 90th percentile male.

Reference

ISO 7176-24:2004

Canadian Community Health Survey

Magill Forceps - No. 215

Minimum requirements

Magill forceps shall:

1. be made out of corrosion resistant medical grade stainless steel or plastic;
2. possess a bent blunt tip forcep;
3. have an eye on the blunt end with a ridged area on the facing surface areas;
4. be designed to conform to adult and pediatric anatomy;
5. reach the base of the hypopharynx under direct laryngoscopy;
6. be easy to clean and disinfect, or be disposable.

Reference

ASTM F1638-95(2008) E1

Mass Casualty Incident Kit - No. 220

Minimum requirements

The Mass Casualty Incident Kit shall contain the following:

	Equipment Description	EHSB Standard No.	Minimum Quantity
1.	light sticks	N/A	6
2.	markers, permanent ink	N/A	2
3.	multi-casualty incident (MCI) reference card	N/A	1
4.	site co-ordinator vest	415	1
5.	Transport Canada Emergency Response Guidebook	N/A	1
6.	triage tags	N/A	50
7.	vests, high visibility	415	3

The above components shall be contained in a readily identifiable kit.

Reference

N/A

Metered Dose Inhaler (MDI) Aerosolization Adapter - No. 225

Minimum requirements

MDI adapters shall:

1. include a 15 mm compatible adapter for use with endotracheal tubes and bag-valve-mask respirators;
2. accept plastic or metal tipped MDIs;
3. be designed to optimize medication delivery;
4. provide a direct medication route;
5. be capable of being used within an ETT circuit;
6. be rigid or collapsible;
7. be constructed of transparent materials;
8. be disposable;
9. be individually packaged and sealed;
10. be sterile.

Reference

ISO 5361:1999

Metered Dose Inhaler (MDI), Valved Holding Chamber - No. 230

Minimum requirements

MDI valved holding chambers shall:

1. have a universal MDI adapter;
2. have a size-optimized chamber;
3. have a standard 22 mm outside diameter for tracheal tube connections;
4. have a valve system and exhaust ports to prevent exhaled air from entering the chamber;
5. have adult and pediatric silicone masks or mouthpiece;
6. be constructed of crush-resistant polymer material;
7. be easy to clean and disinfect.

Reference

ISO/DIS 27427:2009

Nebulized Medication Delivery Mask - No. 235

Minimum requirements

The nebulized medication delivery mask shall:

1. be disposable;
2. be constructed of transparent medical grade material;
3. be an “under-chin” style;
4. be available in adult and pediatric sizes;
5. include oxygen supply tubing (MOHLTC Standard #285);
6. be individually packaged;
7. be capable of nebulizing liquids at a rate of 1 ml per minute at 6 litres per minute of oxygen flow;
8. have a detachable medication chamber that holds a minimum of 5 millilitres of fluid.

Reference

ISO/DIS 27427:2009

Needles - No. 240

Minimum requirements

Needles shall:

1. be disposable after one use;
2. be provided in a minimum of three sizes (#18, #22, and #25 G);
3. have blunt tip (non-coring) for #18 G;
4. have beveled end needles with the exact gauge outside diameter for #22 G and available in 1½ inch size;
5. have beveled end needles with the exact gauge outside diameter for #25 G and available in 1 inch and ⅝ inch sizes;
6. be supplied with a protective plastic sheath;
7. have an easy identifiable label and/or coding system (*i.e.* colour) to indicate size;
8. have a leak-proof twist-lock fitting to attach syringes or IV tubing;
9. be sterile.

Reference

ISO 9626:1991

O. Reg. 474/07: Needle Safety under the *Occupational Health and Safety Act*

Obstetrical Kit - No. 245

Minimum requirements

The obstetrical kit shall contain the following (items that shall be packaged sterile are identified):

	Equipment Description	EHSB Standard No.	Minimum Quantity
1.	alcohol preps	N/A	2
2.	blanket, receiving, heat retaining, 100% cotton flannelette, white, with no tattered edges	N/A	1
3.	forceps, sterile, disposable	N/A	2 pairs
4.	gauze pads, sterile (minimum 10 cm x 10 cm)	N/A	1
5.	gloves, sterile	140	2 pairs
6.	incontinent pad, sterile and disposable (approximately 60 cm x 120 cm)	N/A	1
7.	obstetrical pad, sterile	N/A	1
8.	obstetrical towelettes	N/A	2
9.	plastic bags	N/A	2
10.	scissors, blunt-tipped, sterile, disposable	N/A	1 pair
11.	suction device (manual) meeting current AHA guidelines for neonatal suctioning	N/A	1
12.	towels, disposable	N/A	4
13.	twist ties (to secure bags)	N/A	2
14.	umbilical cord clamps, sterile	N/A	2

The obstetrical kit container shall be:

1. constructed of sturdy, crush-resistant material;
2. able to be safely stored and secured in the vehicle;
3. labeled “Obstetrical Kit” with the contents itemized;
4. labeled with expiry date;
5. sealed in a way to ensure contents remain clean and sterile, where applicable.

Reference

AHA Guidelines for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care, 2015

Oxygen Cylinder, Portable - No. 247

Minimum requirements

The portable oxygen cylinder shall:

1. be capable of containing at least an equivalent volume of oxygen to provide continuous therapy for a period of no less than 20 minutes, calculated at a rate setting of 12 liters per minute;
2. be compatible with the oxygen pressure regulator requirements in MOHLTC Standard #275.

Reference

N/A

Oxygen Cylinder(s), Vehicle - No. 248

Minimum requirements

The vehicle oxygen cylinder(s) shall:

1. be capable of containing at least an equivalent volume of oxygen to provide continuous therapy for a period of no less than 3.5 hours, calculated at a rate setting of 12 litres per minute;
2. be compatible with the oxygen pressure regulator requirements in MOHLTC Standard #280.

Reference

N/A

Oxygen Flowmeter, Vehicle - No. 250

Minimum requirements

The wall oxygen flowmeter shall:

1. comply with current CGA specification where not otherwise detailed within these minimum requirements;
2. fit within the ambulance conversion design;
3. be constructed of materials compatible with high pressure oxygen use;
4. have input connections that conform to current international standards and be female 9/16 inch diameter index safety system (DISS) hand or wrench-tight style;
5. ensure any additional working pressure outlets are equipped with (9/16 inch) DISS "check-valve" fitting to prevent the escape of oxygen should the fitting not be connected to ancillary equipment;
6. be backpressure compensated and calibrated to provide a minimum 0 - 15.0 litre per minute flow range. "Flush" flow shall be at least 75 litres per minute. Flow rates shall be maintained with a +/- 10% band of tolerance across the operating range of the cylinder (2,200 psi – 500 psi);
7. have the flowmeter free flow outlet be male 9/16 inch DISS located at the bottom of the Thorpe tube, and compatible with commercially available "barb-style" nipple adapters and humidifiers;
8. include an operator's manual and a manufacturer's test sheet indicating final performance values.

Reference

N/A

Oxygen Mask, Adult High Concentration - No. 255

Minimum requirements

Adult high concentration oxygen masks shall:

1. be disposable;
2. be constructed of transparent medical grade material;
3. be individually wrapped;
4. include oxygen supply tubing (MOHLTC Standard #285);
5. provide high concentration oxygen (minimum 90%) at a 10-15 litres per minute flow rate of oxygen.

Reference

ISO 15001:2003

Oxygen Mask, High Concentration/Low Flow - No. 260

Minimum requirements

High concentration/low flow oxygen masks shall:

1. be disposable;
2. be constructed of transparent medical grade materials;
3. be individually wrapped;
4. be outfitted with or be capable of being outfitted with a hydrophobic submicron filter on the exhaust port;
5. include oxygen supply tubing (MOHLTC Standard #285);
6. be capable of providing a minimum oxygen concentration of 80% with an oxygen flow rate of 8 litres per minute or less.

Reference

ISO 15001:2003

Oxygen Mask, Pediatric Simple - No. 265

Minimum requirements

Pediatric simple oxygen masks shall:

1. be disposable;
2. be constructed of transparent medical grade material;
3. be individually wrapped;
4. include oxygen supply tubing (MOHLTC Standard #285);
5. provide minimum oxygen concentrations of 40-60%, at an 8-10 litres per minute flow rate of oxygen.

Reference

ISO 15001:2003

Oxygen Nasal Cannula - No. 270

Minimum requirements

Oxygen nasal cannulas shall:

1. be disposable;
2. be constructed of crush-resistant and kink-resistant medical tubing;
3. be individually packaged;
4. be a minimum of 2 m (7 ft) in length or compatible for use with oxygen supply tubing (MOHLTC Standard #285);
5. be capable to provide a range of oxygen concentrations between 24% and 44%, at oxygen flow rates of between 2 to 6 litres per minute.

Reference

ISO 15001:2003

Oxygen Pressure Regulator, First Response Kit - No. 275

Minimum requirements

Oxygen pressure regulators shall:

1. reduce the operating pressure from the high (2,200+ psi) pressure in an oxygen cylinder, to the consistent static working pressure necessary for the oxygen delivery equipment being used;
2. be constructed of materials that are CGA approved for high pressure oxygen use;
3. have input connections that conform to CGA standards and be "pin-indexed" for oxygen;
4. have a pin indexed yoke attachment that is a "T-Bar" handle or knob secured to the regulator body;
5. have at least one working pressure (55 psi) outlet, capable of supporting an automatic transport ventilator;
6. ensure that where applicable, additional working pressure (55 psi) outlets are equipped with 9/16 inch diameter index safety system (DISS) "check-valve" fitting to prevent the escape of oxygen when not connected to other equipment;
7. have a cylinder contents gauge marked in both "psi" and "bar" values and provide a clearly visible indicator of the need to refill the cylinder;
8. be equipped with a protective "gauge guard";
9. provide output performance from the 9/16 inch DISS outlet(s) with a minimum output pressure of 45 psi at a 100 litre per minute flow rate across the operating range of the cylinder (2,200 psi - 500 psi);
10. have a therapy free flow control providing flow rates between 2.0 – 15.0 litres per minute (or equivalent). Flow rates shall be maintained within a +/- 10% band of tolerance across the operating range of the cylinder (2,200 psi - 500 psi);
11. have a therapy free flow outlet that is a "barb-style" which is compatible with oxygen supply tubing meeting MOHLTC Standard #285.

NOTE: Oxygen regulators intended for aeromedical use shall only be used in conjunction with devices intended and tested for the aeromedical environment.

Reference

ASTM G175-03

CGA

Oxygen Pressure Regulator, Vehicle - No. 280

Minimum requirements

Oxygen pressure regulators shall:

1. be capable of reducing the operating pressure from the high (2,200+ psi) pressure in an oxygen cylinder, to the consistent static working pressure necessary for the oxygen delivery equipment being used;
2. fit into the ambulance conversion design;
3. be constructed of materials that are CGA approved for high pressure oxygen use;
4. have input connections that conform to current international standards and have a CGA 540 nut and stem fitting for oxygen;
5. have at least one working pressure (55 psi) outlet, equipped with a 9/16 inch DISS male outlet. No check valve is required;
6. have the cylinder contents gauge marked in both “psi” and “bar” values;
7. provide output performance from the 9/16 inch DISS outlet(s) that maintain a minimum output pressure of 45 psi at a 100 litre per minute flow rate across the operating range of the cylinder (2,200 psi – 500 psi);
8. include an operator’s manual and a manufacturer’s test certificate indicating final performance values.

Reference

ASTM G175-03

CGA

Oxygen Supply Tubing - No. 285

Minimum requirements

Oxygen supply tubing shall:

1. be disposable;
2. be constructed of crush-resistant and kink-resistant medical grade material;
3. be a minimum of 2 m (7 ft) in length;
4. be able to facilitate connection with oxygen delivery supply and delivery devices;
5. be able to ensure unimpeded delivery of oxygen at a flow rate of 15 litres per minute to the patient.

Reference

ISO 15001:2003

Particulate Respirator Mask - No. 290

Minimum requirements

Particulate respirator masks shall:

1. be disposable;
2. have a system to affix the mask to the user's face that provides an adequate facial seal;
3. be fluid resistant to splash and splatter of blood and infectious materials;
4. fit a wide range of face sizes;
5. have a filter efficiency level of 95% or greater against particulate aerosols free of oil in a size range of .1 to >10 microns.

Reference

NIOSH Standard 42 CFR 84 or better

Qualitative End-Tidal CO_2 Detector - No. 295

Minimum requirements

Qualitative $ETCO_2$ detectors shall:

1. be disposable;
2. have an appropriately sized connector port on the patient and circuit end;
3. be capable of indicating the presence of CO_2 on a breath to breath response for no less than 30 minutes;
4. be packed sterile.

Reference

N/A

Restraining Straps, Cot - No. 300

Minimum requirements

The complete restraining system shall:

1. consist of two (2) complete two (2) piece "Tang & Receiver" assemblies, [*i.e.* two (2) shoulder, one (1) waist, and one (1) leg];
2. be constructed of materials that are easily cleaned and disinfected, minimum two (2) inches in width;
3. employ the automotive style "Tang & Receiver" fastening device configuration (quick release press mechanism);
4. have a minimum extended Tang and strap length of 114 cm (45 inches);
5. have a minimum extended Receiver and strap length of 38 cm (15 inches);
6. be capable, as a system, of restraining, as a minimum, ten (10) times the weight of a 90th percentile male.

Reference

Canadian Community Health Survey

Restraining Straps, Adjustable Break-away Stretcher & Spinal Board - No. 305

Minimum requirements

The complete restraining system shall:

1. consist of two (2) complete two (2) piece "Tang & Receiver" assemblies, [*i.e.* two (2) shoulder, one (1) waist and one (1) leg];
2. be constructed of materials that are easily cleaned and disinfected, minimum two (2) inches in width;
3. have a minimum extended Tang and strap length of 122 cm (48 inches);
4. have a minimum extended Receiver and strap length of 33 cm (13 inches);
5. be capable of restraining, as a minimum, the weight of a 90th percentile male;
6. have quick release hooks that:
   a. are corrosion resistant and have a spring loaded snap closure;
   b. fit over a maximum 10 mm (3/8 inch) rod;
   c. have a 360^{o} swivel capability.

Reference

Canadian Community Health Survey

Resuscitation Mask, Adult - No. 310

Minimum requirements

Adult resuscitation masks shall:

1. be constructed of transparent, flexible medical grade materials;
2. have an ISO Standard 15 mm inside diameter and 22 mm outside diameter connection compatible with the oxygen delivery system;
3. be of a design that will seal effectively in a wide variety of facial shapes and sizes;
4. have a valve capable of allowing the introduction of additional air or to remove air from the cuff if equipped with an inflatable cuff;
5. be capable of being cleaned and disinfected, or be disposable.

Reference

ISO 15001:2003

Resuscitation Mask, Pediatric - No. 315

Minimum requirements

Pediatric resuscitation masks shall:

1. be constructed of transparent, flexible medical grade material;
2. be available in pediatric and infant sizes that will seal effectively in a wide variety of facial shapes and sizes;
3. have an ISO Standard 15 mm inside diameter and 22 mm outside diameter connection compatible with the oxygen delivery system;
4. have a valve capable of allowing the introduction of additional air or to remove air from the cuff if equipped with an inflatable cuff;
5. be capable of being cleaned and disinfected, or be disposable.

Reference

ISO 15001:2003

Sharps Container - No. 320

Minimum requirements

The sharps container shall:

1. be of puncture resistant construction;
2. be manufactured of materials capable of being incinerated;
3. have temporary and permanent lid closure capability;
4. have tapered slots and bevelled edge openings that allow for safe disposal of needles, plus include one all-purpose opening;
5. be labeled with a “Biohazard” label, the colour of which is consistent with current legislative requirements;
6. not contain colouring with heavy metals.

Reference

ISO/NP 23908-3

Spinal Board, Quick Connect - No. 325

Minimum requirements

The quick connect spinal board shall:

1. be constructed of material able to support a minimum 182 kg (400 lbs) weight when supported at ends;
2. have a surface finish that can be cleaned and disinfected;
3. be capable of carrying, as a minimum, the weight of a 90th percentile male;
4. be capable of allowing easy access to handholds with minimum pinch hazards;
5. have each anchor pin for the straps rated at a minimum pull strength of 136 kg
6. (300 lbs);
7. be capable for use with restraining straps (MOHLTC Standard #305);
8. have a sufficient number of hand slots to be able to lift the spinal board safely;
9. have all edges, including hand slots smooth and impervious to workplace fluids;
10. have the following dimensions/tolerances:
    a. physical dimensions of the spinal board to accommodate, as a minimum, a 90th percentile male.

Reference

ASTM F1557-94(2007)

Canadian Community Health Survey

Spinal Immobilization Extrication Device - No. 330

Minimum requirements

The spinal immobilization extrication device shall:

1. be of a wrap-around design which facilitates safe patient handling;
2. be constructed of materials that are easily cleaned and disinfected;
3. ensure vertical rigidity;
4. be fully adjustable to accommodate the maximum scope and array of field applications;
5. be capable of carrying, as a minimum, the weight of a 90th percentile male;
6. be x-ray translucent;
7. incorporate lifting handles on each side.

Reference

ASTM F1556-94(2007)

Canadian Community Health Survey

Splint, Multi-purpose/Malleable - No. 335

Minimum requirements

A multi-purpose splint shall:

1. be capable of being cleaned and disinfected, or be disposable;
2. be constructed of rigid material and have rounded edges;
3. be adjustable for arm or lower leg use in adults and arm or leg use in children;
4. be x-ray translucent;
5. be individually packaged with easy to understand instructions for use;
6. under normal use conditions, support and stabilize injured extremities and maintain alignment in as near neutral position as possible, or maintain the position of splinting.

A malleable splint shall:

1. be capable of being cleaned and disinfected, or be disposable;
2. be constructed of a semi-rigid material that will conform when applied to a patient's extremity, shall provide rigid support;
3. be x-ray translucent;
4. be individually packaged with easy to understand instructions for use;
5. under normal use conditions, support and stabilize injured extremities and maintain alignment in as near neutral position as possible, or maintain the position of splinting.

Reference

ASTM F1555-94 (2007)

Splint, Traction - No. 340

Minimum requirements

The traction splint shall:

1. be compatible with spinal boards and cots/stretchers carried in the ambulance;
2. be of a size and shape that can be safely and easily stored in the ambulance;
3. have a mechanism that allows the paramedic to determine and document exactly how much traction is being applied;
4. automatically adjust to degree of muscle spasm (counter force) in the leg in response to the traction being applied (dynamic traction);
5. allow for orthopedic and vascular assessment of a patient when applied;
6. be easily cleaned and disinfected.

Reference

ASTM F1555-94 (2007)

Stretcher, Adjustable Break-away - No. 345

Minimum requirements

The break-away stretcher shall:

1. be adjustable to accommodate patients of various sizes;
2. be equipped with quick connect pins with an individual pull rating of 136 kg (300 lbs) allowing the use of restraining straps (MOHLTC Standard #305);
3. be capable of being safely stored in an ambulance;
4. have a surface that cradles the patient providing support and minimizing lateral movement;
5. be capable of carrying, as a minimum, the weight of a 90th percentile male;
6. be manufactured with materials that can be easily cleaned and disinfected;
7. have the following dimensions/tolerances:
   a. the physical dimensions of the adjustable break-away stretcher to accommodate, as a minimum, a 90th percentile male.

Reference

Canadian Community Health Survey

Stretcher, Portable - No. 355

Minimum requirements

The portable stretcher shall:

1. include a transport surface of approved medical grade material that can accommodate the size of the 90th percentile male and have pole channels or handgrips;
2. be capable of carrying, as a minimum, the weight of a 90th percentile male;
3. have poles constructed of minimum 2.5 cm diameter tubing with non-slip handles at each end (if using poles);
4. have pole ends with reduced diameter and spring loaded pin locking mechanism. Poles to be minimum 188 cm (74 inches) long assembled, minimum 101.5 cm long disassembled (if using poles);
5. be manufactured with materials that can be easily cleaned and disinfected;
6. have the following dimensions/tolerances:
    a. the physical dimensions of the portable stretcher to accommodate, as a minimum, a 90th percentile male.

Reference

N/A

Suction Catheter - No. 360

Minimum requirements

Suction catheters shall:

1. be for single patient use and be disposable;
2. be constructed of medical grade material;
3. have a finger control valve to facilitate intermittent suctioning;
4. be individually packaged;
5. be available in the following sizes: #6F, #10 F and #14 F;
6. be approximately 50 – 55 cm in length;
7. be packaged as sterile in properly sealed packages capable of maintaining the integrity of the suction catheter under normal conditions of shipping and storage. The word “Sterile” shall be readily apparent on examination of the package.

Reference

ISO 8836:2007

Suction Tip, Wide Bore (Oral) - No. 365

Minimum requirements

Wide bore (oral) suction tips shall:

1. be disposable;
2. be constructed of appropriate medical grade material;
3. be a minimum 15 cm long;
4. have an internal diameter of approximately 1 cm at the distal end of the tip, and an external diameter at the proximal end to facilitate attachment of suction tubing;
5. have a thumb activated suction control port near the proximal end;
6. have a flexible and fluted distal end to facilitate safe suctioning;
7. be able to safely and efficiently clear the oropharynx of large particulate matter and other types of thick emesis and minimize risk of damage to the teeth and the soft tissues of the mouth and oropharynx;
8. be supplied clean and packaged to maintain the integrity of the suction tip under normal conditions of shipping and storage.

Reference

ISO 8836:2007

Suction Tip, Yankeur - No. 370

Minimum requirements

Yankeur suction tips shall:

1. be disposable and individually packaged;
2. be constructed of rigid, transparent, medical grade material;
3. have a thumb activated suction control port near the proximal end;
4. have a main inlet port at the distal end, with an opening of not less than 5 mm;
5. have an external diameter at the proximal end to facilitate attachment of suction tubing;
6. be able to safely and efficiently clear the oropharynx of mucus, fluid, liquid emesis and small particulate matter and minimize risk of damage to the teeth and the soft tissues of the mouth and oropharynx;
7. be supplied clean and packaged to maintain the integrity of the suction tip under normal conditions of shipping and storage.

Reference

ISO 8836:2007

Suction Unit, Collection Container (Vehicle) - No. 375

Minimum requirements

The collection container shall:

1. be compatible with vehicle mounted suction units currently in use in land ambulance vehicles;
2. be constructed of materials and designed to ensure no spillage or leakage of suctioned fluids or matter;
3. provide a sealed, airtight container for transport of potentially biohazardous material;
4. be disposable or allow cleaning and disinfection of all components that are not disposable.

Reference

ISO 8836:2007

Suction Unit, Hand Operated - No. 380

Minimum requirements

Hand operated suction units shall:

1. be capable of rapid disassembly and assembly, if applicable;
2. be designed to minimize potential incorrect assembly;
3. continue to operate even when collection canister is full;
4. be compatible with industry standard suction catheters and connectors;
5. be operable by one (1) paramedic, using one hand;
6. have a minimum collection capacity of 200 ml;
7. have a suction tip, minimum 8 mm internal diameter;
8. have a suction tip designed to minimize risk of damage to the teeth and the soft tissues of the mouth and oropharynx;
9. be designed for use with the infant, child and adult patients;
10. provide a vacuum range that meets current AHA guidelines;
11. provide a minimum 20 litres per minute airflow;
12. be disposable or allow cleaning and disinfection of all components that are not disposable.

Reference

N/A

Suction Unit, Portable Electric - No. 385

Minimum requirements

The portable electric suction unit shall:

1. be capable of being operated from an integral battery supply that will allow the unit to meet the minimum airflow and suction requirements listed in this standard for at least twenty (20) minutes of continuous operation;
2. be capable of operating utilizing the 12-V DC electrical system in an ambulance;
3. provide, with all tubing, filter(s) and collection containers connected, a minimum of 16 litres per minute airflow at 200 mmHg and 20 litres per minute airflow at 550 mmHg. Measurement shall be at the patient end of the suction tube;
4. provide a vacuum level of >300 mmHg to be reached within 4 seconds, with all tubing, filter(s) and collection containers connected. Measurement shall be made when the patient end of the suction tube is clamped;
5. include a vacuum control and shutoff mechanism, or combination thereof, to adjust vacuum levels and to discontinue aspiration instantly;
6. include a vacuum indicator with numerical markers at least every 100 mmHg and having a total range of 0 to 550 mmHg;
7. be provided with one (1) 2 metre length of suction tubing, that is translucent, non kinking, will not collapse when subjected to a continuous minimum vacuum of 550 mmHg at a temperature of 45 degrees Celsius for a minimum of five (5) minutes;
8. include tubing and fittings in the airflow path not less than 6.4 mm in diameter;
9. include a disposable collection container system that resists breaking and is transparent. The container system shall have a minimum total capacity of 600 ml (single container or multiple containers). Each individual collection container shall have a minimum capacity of 300 ml. Collection containers shall be constructed of a material that is impact resistant. All containers, including those contained within a protective frame, shall not inhibit the viewing of the container's contents;
10. be equipped a hydrophobic submicron filter with a minimum viral and bacterial filtration efficiency of 99.99% at the exhaust end.

With regards to batteries and electrical power supply for the suction unit:

1. If the integral battery is rechargeable, it shall be rechargeable from the ambulance's 12V DC electrical system and from 115V AC. The 115-V AC charging system need not be integral to the portable suction unit.
2. The battery shall be rechargeable while installed in the aspirator case. Batteries shall not be physically disconnected in order to initiate their recharge.

3. External battery chargers shall be CSA approved for “Electro-medical Use” and bear the applicable CSA file number.
4. The suction unit shall include electrical cords and plugs that will interface within the ambulance conversion design.

Reference

ANSI / ISO10079.1

AHA Guidelines for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care, 2015

Suction Unit, Tubing - No. 390

Minimum requirements

Suction unit tubing shall:

1. be disposable;
2. be constructed from clear, non-conductive medical grade material;
3. be a minimum 182 cm in length (6 ft);
4. have a minimum inside diameter of 7.0 mm;
5. be capable of withstanding a vacuum of 560 mmHg without the walls collapsing.

Reference

N/A

Suction Unit, Vehicle - No. 395

Minimum requirements

The vehicle suction unit shall:

1. be compatible with industry standard suction catheters, tubing and connectors;
2. have a bag type or collection jar system, minimum capacity of 1.0 litres, that allows for easy disposal of aspirate;
3. be supplied with a control panel complete with on / off switch that will control power supply, a 'power on' light, a vacuum gauge control switch and circuit breaker;
4. be supplied with a vacuum gauge that will register a minimum 0 - 550 mmHg;
5. allow a minimum 16 litre per minute airflow at 200 mmHg, and 31 litre per minute airflow at 550 mmHg.

Reference

ANSI / ISO10079.1

AHA Guidelines for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care, 2015

Symptom Relief Kit - No. 400

Minimum requirements

Ambulance services shall utilize one (1) or more carrying cases for the purpose of transporting the required medications and administration supplies described in this standard.

The Symptom Relief Kit shall contain the following medications and accessory equipment; along with any auxiliary medications as applicable:

	Equipment Description	EHSB Standard No.	Minimum Quantity
Medications			
1.	acetaminophen (960 – 1,000 mg/dose)	N/A	1920 mg
2.	acetylsalicylic acid (ASA) (81 mg/tablet)	N/A	6 tablets
3.	epinephrine 1 mg/ml = 1:1,000	N/A	10 mg
4.	glucagon	N/A	2 mg
5.	glucose, oral (paste, tablets or other formulation) 15 g/dose	N/A	2
6.	ibuprofen (400 mg/dose)	N/A	800 mg
7.	ketorolac (10-15 mg/dose)	N/A	2 vials/amps
8.	nitroglycerin, lingual aerosol (0.4 mg/dose) **OR** nitroglycerin, tablets (0.3 or 0.4 mg/dose)	N/A	2 canisters **or** 2 bottles
9.	salbutamol, inhalation aerosol (100 mcg/puff)	N/A	2 canisters
10.	salbutamol, inhalation solution	N/A	25 mg total
11.	naloxone injection (0.4-0.8 mg/dose)	N/A	6 doses
Accessory Equipment			
12.	alcohol preps	N/A	10
13.	atomization device, intranasal	012	2
14.	glucometer	145	1
15.	metered dose inhaler (MDI), valved holding chamber	230	2
16.	needles	240	2 each size
17.	syringe, medical	405	2 each size

Reference

N/A

Syringe, Medical - No. 405

Minimum requirements

Medical syringes shall:

1. be disposable;
2. have molded syringe barrels and plunger rods with flexible stoppers;
3. be translucent for visibility of material quality and have visible graduated markings indicating fluid levels;
4. be made from biocompatible materials which are pharmacologically inert, chemically resistant, and non-toxic;
5. have a leak-proof twist-lock fitting;
6. be individually packaged;
7. be sterile;
8. be available in 1 ml, 3 ml, and 10 ml sizes.

Reference

ISO 7886-1:1993

Thermometer - No. 406

Minimum requirements

Thermometers* shall be:

1. capable of infrared non-contact or contact-based tympanic , temporal artery or oral thermometry;
2. accurate to +/- 0.2°C when measuring temperatures between 36°C and 39°C, and +/- 0.3°C when measuring temperatures less than 36°C or greater than 39°C, under an operating temperature range between 16°C and 33°C at minimum. Wider operating temperature ranges are acceptable;
3. approved for use in a professional clinical setting;
4. constructed of materials capable of being easily cleaned and disinfected; and/or be designed for single patient use as applicable.

***NOTE: where available, onboard temperature monitoring devices associated with cardiac monitors may be used in place of portable/handheld devices, including core temperature monitoring devices.**

Reference

ISO 80601-2-56: 2009

ASTM E1965-98

Thoracostomy Device - No. 410

Minimum requirements

Thoracostomy devices shall:

1. consist of a 14 gauge catheter-over-needle with a minimum length of 6.35 centimetres (2.5 inches) **OR** be a similar device with the same minimum length and internal diameter.

Reference

N/A

Vest, High Visibility - No. 415

Minimum requirements

High visibility safety apparel (vests) shall:

1. be made of fluorescent or bright coloured background material;
2. have retro-reflective striping that:
   a. is located on the outside of the garment;
   b. measures at least 50 mm in width;
   c. completely encircles the waist;
   d. is arranged in the form of an "X" on the back of the garment, extending from the shoulders and down to the waist;
   e. is arranged in two vertical lines on the front of the garment, extending over the shoulders and down to the waist;
3. be fitted to the worker but large enough to be comfortably fastened over winter apparel if winter apparel does not meet the high visibility standard;
4. have fabric hook & loop fasteners;
5. have side and back tear-away features;
6. accommodate belt-mounted equipment.

Reference

CSA-Z96-15 High Visibility Safety Apparel

ANSI/ISEA 207-2011 High Visibility Public Safety Vests

Ministry of Labour, EMS Subcommittee Guidance Note #5 Traffic Safety and Worker Visibility

Part C – Auxiliary Equipment Standards

C

Part C – Auxiliary Equipment Standards

Continuous Positive Airway Pressure Unit - No. A-910

Minimum requirements

Continuous positive airway pressure (CPAP) units shall:

1. be driven/powered by oxygen with an anti-suffocation valve;
2. have independent adjustable settings CPAP pressure from 5 – 10 cm H_2O;
3. have an airway pressure relief mechanism;
4. have the ability to provide a minimum FIO_2 of 50% with optional FIO_2 of 100% oxygen;
5. use a disposable circuit including mask and head harness for CPAP delivery;
6. include oxygen hose/tubing that will allow the device to be attached to an oxygen source at a minimum distance of two (2) metres;
7. have the ability to provide nebulized and/or metered dose inhaler medication;
8. have a method for attaching a hydrophobic submicron filter to decrease the risk of airborne contagion.

Reference

N/A

Endotracheal Tube – Nasal - No. A-912

Minimum requirements

Nasal Endotracheal tubes shall:

1. be disposable;
2. have a 15 mm compatible adapter with push and twist connections;
3. be constructed of pliable, medical grade material that resists kinking and is transparent;
4. be designed to allow for insertion via the nasal pharynx into the trachea, with a guide to control the distal tip;
5. allow a full magill curve;
6. have a radiopaque line running the length of the tube;
7. have an angled cut end with an extra hole or eye;
8. have graduated measurement markers along the length of the tube;
9. have a high-volume, low-pressure cuff;
10. have a self-sealing cuff valve for inflating the cuff;
11. have a visual indicator to confirm the cuff is inflated;
12. be individually packaged and sealed;
13. be sterile;
14. be clearly labeled with size of endotracheal tube;
15. be stocked in the following sizes:
    a. Cuffed Nasotracheal Tubes: #6, #7, #8

Reference

ISO 5361:2012

Meconium Aspirator Adapter (Endotracheal Tube) - No. A-915

Minimum requirements

Meconium aspirator adapter tubing shall:

1. be disposable;
2. attach to an endotracheal tube;
3. have an internal diameter size of 15 mm;
4. have a thumb port that allows for intermittent suctioning;
5. be individually packaged;
6. be sterile.

Reference

N/A

Restraining Straps, Folding Stretcher - No. A-918

Minimum requirements

The complete restraining system shall:

1. consist of two (2) complete two (2) piece "Tang & Receiver" assemblies, [*i.e.* two (2) shoulder, one (1) waist, and one (1) leg];
2. be constructed of materials that are easily cleaned and disinfected, minimum two (2) inches in width;
3. employ the automotive style "Tang & Receiver" fastening device configuration (quick release press mechanism);
4. have a minimum extended Tang and strap length of 114 cm (45 inches);
5. have a minimum extended Receiver and strap length of 38 cm (15 inches);
6. be capable, as a system, of restraining, as a minimum, ten (10) times the weight of a 90th percentile male.

Reference

Canadian Community Health Survey

Stretcher, Folding - No. A-920

Minimum requirements

The folding stretcher shall:

1. be manufactured with materials that can be easily cleaned and disinfected;
2. fold in half longitudinally for easy storage;
3. have an adjustable back rest that allows patient positioning from supine to fully sitting;
4. have a telescoping handle at the head end that will manually telescope in when the head of the stretcher is raised or for storage and out when head is lowered and when in use;
5. have a minimum of two (2) fixed wheels with solid rubber, or better tires, one mounted at each of the head end corners of the frame;
6. allow for the use of restraining straps (MOHLTC Standard #A-918);
7. be manufactured with materials that can be easily cleaned and disinfected;
8. have high visibility colour;
9. have the following dimensions/tolerances:
    a. be capable of carrying, as a minimum, the weight of a 90th percentile male;
    b. physical dimensions of the folding stretcher to accommodate, as a minimum, a 90th percentile male.

Reference

Canadian Community Health Survey

Ontario