

## InterManager's recommended quantities and procedures concerning carriage of Medical Oxygen.

### Present regulations regarding Oxygen Carriage on board ships:

### International Medical Guide:

International Medical Guide for Ships

The ship's medicine chest

	Category	Recommended item	Quantity per 10 crew
1	RESUSCITATION EQUIPMENT		
	Appliance for the administration of oxygen	Portable oxygen set, complete, containing:	1
		1 oxygen cylinder, 2 l/200 bar	1
		1 spare oxygen cylinder, 2 l/200 bar*	1
		Pressure regulating unit and flow meter with tubes such that ship's industrial oxygen can also be used	1
		3 disposable face masks of choice: including simple face mask and non-rebreathing mask	3
	Oropharyngeal airway	Guedel airway (Mayo-tube): sizes medium and large	2
	Mechanical aspirator	Manual aspirator to clear upper airways, including 2 catheters	1
	Bag and mask resuscitator	Ambubag (or equivalent); supplied with large, medium and small masks	1
	Cannula for mouth-to-mouth resuscitation	Brook Airway, Lifeway, pocket face mask or equivalent	1



# InterManager

International Ship Managers' Association  
Promoting Excellence In Ship Management

## MFAG requirements for ships carrying dangerous goods:

Medical First Aid Guide

### List of equipment

**Column A** of the following table shows the recommended minimum requirements for ships when casualties cannot be hospitalized on shore within 24 hours.

**Column B** shows the recommended minimum requirements for ships when casualties can be hospitalized on shore within 24 hours.

**Column C** shows the recommended minimum requirements for ships when casualties can be hospitalized on shore within 2 hours.

Equipment	Recommended minimum quantity			Reference
	A	B	C	
Guedel airway size 2 size 3 size 4	2 2 2	2 2 2	2 2 2	Appendix 3
IV cannula (size 1.2)	10	10	none	Appendix 13
IV set	10	10	none	Appendix 13
Needles size 0.8	100	50	10	
Simple face mask (allowing up to 60% oxygen), disposable	10	10	2	Appendix 3
Valve and bag manual resuscitator	2	2	2	Appendix 3
Oxygen cylinder	40 L/200 bar*	40 L/200 bar*	none	Appendix 3
Portable oxygen-giving set ready for use	1* (2 L/200 bar)	1* (2 L/200 bar)	1	
Spare portable oxygen cylinder	1* (2 L/200 bar)	1* (2 L/200 bar)	1	
Rectal infusion set catheter (26 French gauge)	1 6	none none	none none	Appendix 13
Syringes 2 mL 5 mL	100 10	50 10	10 none	

\* A minimum of 44 L/200 bar oxygen of which there should be at least:

- One complete portable set with 2 L/200 bar oxygen ready for use with a spare cylinder of 2 L/200 bar and
- One oxygen cylinder of 40 L/200 bar (at ship's hospital, assembled for direct use) with one flowmeter unit (two ports) for supplying of oxygen for two persons at the same time. If more than one non-portable oxygen cylinder is used, there must be two flowmeter units for supplying of oxygen for two persons at the same time.

### Recommendation details:

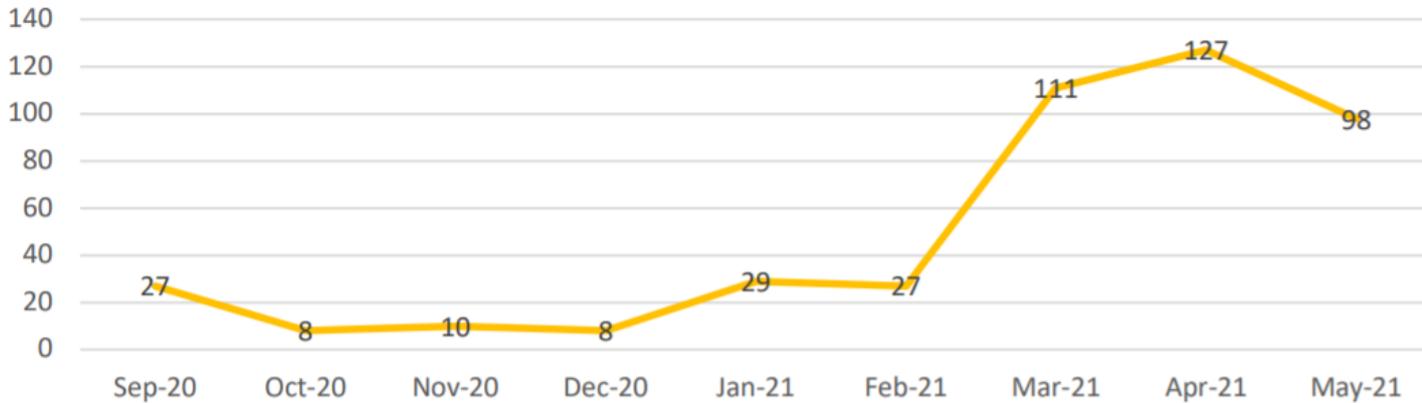
Ship Managers wishing to improve Medical Oxygen situation on board of their vessels could consider minimum carriage requirements on board all ships where casualties cannot be hospitalized on shore within 24 hours, in addition to the 2L/ 200 bar oxygen cylinders:

1. Oxygen Cylinders: 2 x 40L/ 200 bar
2. Oxygen concentrator with flow capacity of 8-10 litres/min

### Rationale:

A study was conducted on potential and confirmed Covid-19 cases on board in the fleet of one manager (Anglo-Eastern Ship Management managing 650 vessels).

## Potential Covid-19 Cases Onboard



In critical cases where the oxygen saturation levels of the patient had dropped below required levels, medical oxygen was administered. All the cases where administration of medical oxygen was required were either disembarked or had to be medically evacuated for further management at a tertiary care setup.

### Highlights of three critical cases:

Critical Cases	Case I	Case II	Case III
Oxygen administered	1-2L/ min intermittently till disembarkation	5L/ min intermittently during the initial period followed by continuous administration for few hours before disembarkation	6L/ min (SpO <sub>2</sub> was 80%) 2L/ min (SpO <sub>2</sub> was > 96%) Later at 5L/ min (to keep SpO <sub>2</sub> at 94% - 95%) Continuous for last 4-5 hours till Medivac
Nearest Port	Less than 24 hours	45-50 hours to port	72-80 hours to nearest port/ Medivac
Disembarkation	Was safely disembarked with SpO <sub>2</sub> levels >95%	Was safely disembarked with SpO <sub>2</sub> levels at 93% - 94%	Was safely evacuated by helicopter to shore with SpO <sub>2</sub> levels of 94%
Remarks	Timely administration of intermittent oxygen carried out to keep healthy levels. It was known that vessel was close to shore for disembarking the crew member.	Vessel had to proceed at maximum speed to the nearest port to ensure that crew member gets immediate shore assistance; and to ensure that oxygen supply does not run out.	On Day 5, SpO <sub>2</sub> levels of crew member dropped to 80%-86%, when ship was on trans-Atlantic voyage, and nearest port was 3.5 days away. Oxygen administration was managed judiciously to ensure stable SpO <sub>2</sub> levels till crew member was transferred ashore for further management.

At a requirement of administration of 6L/ minute oxygen to one person, a 40L/ 200 bar cylinder will last for just less than a 24-hour period. In case the nearest possible shore assistance is not available within 24 hours or if it is required to administer oxygen to multiple persons (probability in present Covid-19 scenario is high), present regulatory requirements of oxygen carriage would not suffice. Hence, mandating carriage of oxygen concentrator(s) is strongly recommended.

Some of the Flag States have already stated optional requirements for carriage of Oxygen concentrator with flow capacity of 8-10 litres/min [For instance - Isle of Man Ref. MLN 4.1 (Rev 4) Issued 30/06/21, United Kingdom MCA MSN 1905 (M+F)]

**Administration of medical oxygen on board of the ships to be fully consulted with MEDICAL RADIO.**