

A Medical Support in Offshore Racing – Workshop on Medical Support for Offshore Yacht Races, Telemedical Advice Service (TMAS), 1–2 December 2018, London, United Kingdom

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ABSTRACT

The safety and health of sailors offshore is of major concern. World Sailing (WS) and International Maritime Health Association (IMHA) are taking seriously the potential dangers to the safety and health at sea. By the nature of their sport, the sailors racing in offshore racing environment can be exposed to injuries and other health problems that can endanger their lives. Being aware of the potential dangers caused by the distance from onshore health facilities and lack of professional help on board, IMHA and WS decided to support the activities that are leading to the enhancement of safety and health protection on board. With common initiative, joint Workgroup on Medical Support in Offshore Racing has been formed and the series of workshop organised. The WS/IMHA Workgroup on Medical Support for Offshore Yacht Races previously reached consensus on the common competences and learning outcomes for medical training for offshore racing. In addition, the Workgroup has also set standards for required medical kit inventory for yachts participating in the various categories of offshore yacht races. Documents were both approved by WS Medical Commission and the IMHA Board. Fourth workshop on Medical Support for Offshore Yacht Races was held in London, United Kingdom, 1–2 December 2018 and workgroup reached consensus on the standards for availability of Telemedical Advice Services (TMAS) for the various categories of offshore yacht races held under the authority of WS. This position paper sets out how the TMAS should be integrated with the practical usage of medicines and medical equipment on board offshore racing yachts. In addition, this position paper also sets out how the level of medical training integrates with appropriate use of the TMAS. Overall, the three WS/IMHA position papers on the triad of medical inventories, medical training and TMAS, are aimed at providing the best possible medical care on offshore racing yachts, by fully integrating each part of the triad of medical support.

(Int Marit Health 2019; 70, 1: 27–41)

Key words: sailing, offshore races, telemedical advice, medical kit

INTRODUCTION

The safety and health of sailors offshore is of major concern. World Sailing (WS) and International Maritime Health Association (IMHA) are taking seriously the potential dangers to the safety and health at sea. By the nature of their sport, the sailors racing in offshore racing environment can be exposed to injuries and other health problems that can endanger their lives [1]. Being aware of the potential dangers caused by the distance from onshore health facilities and lack of professional help on board, IMHA and WS decided to support the activities that are leading to the enhancement of safety and health protection on board.

With common initiative, joint Workgroup on Medical Support in Offshore Racing has been formed and the series of workshop planned [2].

4TH WS/IMHA WORKSHOP ON MARITIME HEALTH IN OFFSHORE RACING; MEDICAL SUPPORT FOR OFFSHORE YACHT RACES, TELEMEDICAL ADVICE SERVICE (TMAS), 1–2 DECEMBER 2018, LONDON, UNITED KINGDOM

Fourth Workshop on Medical Support for Offshore Yacht Races was held in London, United Kingdom (UK), 1–2 December 2018 on the premises of the WS Headquarters in London. Nine experts from maritime and sailing medicine were gathered: Dr. Arne J. Ulven, from the Norwegian Centre for Maritime Medicine, Dr. Spike Briggs – WS Medical Commission, Volvo RWR from UK, Dr. Roger Nilson, from Sweden, Volvo RWR, Mr. Agnar Tveten from Radio-medico Norway, Mr. Simon Forbes World Sailing Offshore Technical Manager from UK, Carmen Vaz Pardal from WS Medical Commission, Spain, Dr. Lucas Viruly from Radio Medico Netherlands, Netherlands and Dr. Rob Verbist from Maritime Academy Antwerp, Belgium. Workshop was led by IMHA/WS representative Dr. Nebojša Nikolić.

Recommendation for further actions as stated in position paper from the First Workshop on Medical Support for Offshore Yacht Races held from 6 to 7 November 2015, in Sanya, China, where the main work-tasks have been established, had set up the general requirements for TMAS for offshore yacht racing events [2]. Those requirements were re-analysed and tuned by the workgroup. Aim of the workshop was to produce the WS/IMHA position paper on telemedical support for offshore yacht racing.

The format of the workshop requested that 8 participants (4 from WS and 4 from IMHA side) were divided in task teams – each formed of one participant from WS side and one participant from IMHA side. After the current regulations and the context of use of TMAS on board merchant marine ships and on yachts in offshore yacht racing was presented by invited speakers from both sides,

the task teams reviewed, evaluated and scored previously agreed training learning outcomes/competences in medical training of designated providers on board offshore racing yachts in the context of TMAS and the previously agreed list of recommended medicines and equipment on board offshore racing yachts, also in the context of TMAS [3, 4]. Each learning outcome was scored as: 0 – no need for TMAS, 1 – need for TMAS (A or B), 2 – need of TMAS and training (A or B) or NA – not applicable, where indication marked as A – meant: *Simple order to do it* and B indicating – *Leading the provider through the procedure*. In a separate session task teams tuned the contents of the medical kit for allocated category of the races with the TMAS in the context offshore yacht racing. Each item in the medical kit was marked (or not marked) with indication that TMAS should be contacted before a procedure or before administering a drug.

In 1 month-period after the workshop, after the consensus papers were tuned and agreed upon, the final consensus paper was produced and send to WS Medical Commission and IMHA Board for adoption as an official position paper.

WS/IMHA POSITION PAPER ON MEDICAL SUPPORT FOR OFFSHORE YACHT RACES – TMAS

This WS/IMHA Workgroup Position Paper sets out the requirements for TMAS for offshore yacht racing events considering the current state of technical equipment in use on board. These requirements should be regarded as a minimum standard, and not a substitute for national regulations or race organiser's rules, if these are more comprehensive.

WS/IMHA WORKGROUP CONSENSUS ON MEDICAL TRAINING AND MEDICAL KIT ON BOARD IN THE CONTEXT OF TMAS IN OFFSHORE YACHT RACING

The WS/IMHA Workgroup on Medical Support for Offshore Yacht Races previously reached consensus on the common competences and learning outcomes for medical training for offshore racing. In addition, the Workgroup has also set standards for required medical kit inventory for yachts participating in the various categories of offshore yacht races. The WS/IMHA Position Paper on Medical Training and WS/IMHA Position Paper on Medical Kit Inventory were both approved by WS Medical Commission and the IMHA Board [3, 4].

MEDICAL TRAINING

The WS/IMHA Position Paper on Medical Training has been evaluated in the context of the availability of telemedical advice on board. Each learning outcome/competence (graded by Likert scale based on “Miller's triangle”) has been

previously rated on the extent to which it should be achieved by training [5, 6]. Now, each learning outcome/competence has been graded according to whether there is a reasonable requirement for telemedical advice when undertaking the medical assessment, treatment or procedure in question. The WS/IMHA Workgroup Consensus results are included in Appendix 1.

The grading of the requirement to contact TMAS is for guidance only. For any given medical problem that may occur on board, the requirement for calling TMAS depends on the knowledge, training and skills of the designated medical provider on board, and ultimately it is their decision and responsibility whether they call TMAS or not.

MEDICAL KIT ON BOARD

The WS/IMHA Position Paper on Medical Kit Inventory has been evaluated in the context of the availability of telemedical advice on board. Medicines and medical equipment have been previously rated as whether they are required for the various categories of offshore yacht race [4]. Now, each medicine or medical equipment has been graded according to whether there is a reasonable requirement for telemedical advice when considering using the medicine or medical equipment in question. The WS/IMHA Workgroup Consensus results are included in Appendix 2.

The Workgroup acknowledge that there may be occasions when there is an emergency requirement for administration of a medicine or to undertake a medical procedure, when it is not possible to contact TMAS within the required timescale. The responsibility for the decision then lies with the captain and medical officer on board, and should be taken within the context of their medical training and any other available sources of advice, including the medical manual carried on board.

CONCLUSIONS

This position paper recommends the standards for availability of TMAS for the various categories of offshore yacht races held under the authority of World Sailing [7].

Over the past 20 years, there has been a revolution in the availability and cost of global remote communications systems [8–12]. Such systems are already widely used in offshore yacht racing, both for navigation and safety purposes [13]. More latterly, these systems have been used ubiquitously for media coverage of yacht races, proving their worth in publicising the racing, conditions and experiences of those on board [14, 15]. Global communication systems are also already in use for providing remote TMAS to commercial shipping, leisure yachting activities and some offshore yacht races [16–22]. However, provision of an insular, non-integrated TMAS is not the most efficient solution for providing the best level of care offshore when

a crew member is ill or injured [23]. The service has to be integrated with both a thorough knowledge of the medical inventory on board, and also the level of medical training and thus skill mix available on board [24].

The workgroup has previously published position papers on medical inventory requirements for offshore yacht races, and also the required level of medical training [3, 4]. Overall, the three WS/IMHA Position Papers on the triad of medical inventories, medical training and TMAS, are aimed at providing the best possible medical care on offshore racing yachts, by fully integrating each part of the triad of medical support.

This position paper sets out how the TMAS should be integrated with the practical usage of medicines and medical equipment on board offshore racing yachts. In addition, this position paper also sets out how the level of medical training integrates with appropriate use of the TMAS.

Future training courses and medical manuals must incorporate this integrated approach, to ensure a consistent and coherent approach to improving medical care offshore.

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APPENDIX 1.

After the training in medical help on board, designated provider on board/crew who has successfully completed the training in medical care on off shore racing yachts will have the ability to:

Outcomes (guideline usual mainstream practice)*	Designated provider	TMAS grading
Carry out a consultation with a patient		
Take a history	4	0
Carry out physical examination	4	2B
Make clinical judgements and decisions	3	2B
Provide explanation and advice to the patient	3	2B
Provide reassurance and support	4	0
Assess the patient's psychological state	4	2B
Assess clinical presentations, order investigations, make differential diagnoses, and negotiate a management plan		
Recognise and assess the severity of clinical presentations	4	2B
Order appropriate investigations and interpret the results	1	1B
Make differential diagnoses	2	2B
Negotiate an appropriate management plan with patients and carers	1	1B
Provide care of the dying and their families	1	1B
Manage chronic illness	1	NA
Provide immediate care of medical emergencies, including First Aid and resuscitation		
Recognise and assess acute medical emergencies	4	0
Treat acute medical emergencies	4	2B
Provide basic First Aid	4	0
Provide basic life support and cardio-pulmonary resuscitation according to current international guidelines	4	0
Provide advanced life support according to current International guidelines	2	2B
Provide trauma care according to current International guidelines	4	2B
Prescribe drugs		
Prescribe drugs (if cannot contact TMAS) according to guidelines	4	0
Match appropriate drugs and other therapies to the clinical context	1	1B
Review the appropriateness of drug and other therapies and evaluate potential benefits and risks	1	1B
Treat pain and distress	4	2A
Carry out practical procedures		
Measure blood pressure and other vital signs	4	0
Venepuncture (put needle in to vein)	1	0
Cannulation of veins	4	2B
Administer IV therapy and use infusion devices	4	2B
Fluid administration: hypodermoclysis, intraosseous and rectal	3	2B
Subcutaneous and intramuscular injection	4	2A
Administer oxygen	2	NA
Move and handle patients	4	0
Wound closure	4	2B
Splinting	4	2B
Blood transfusion	1	NA
Bladder catheterisation	4	2B
Control of bleeding	4	0

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Outcomes (guideline usual mainstream practice)*	Designated provider	TMAS grading
Urinalysis	4	0
Electrocardiography	1	NA
Basic respiratory function tests, pulse oximeter	2	1B
Communicate effectively in a medical context		
Communicate with patients	4	0
Communicate with TMAS	4	0
Communicate in breaking bad news	2	0
Communicate with others (social media, internet, media)	2	0
Communicate with disabled people	1	NA
Communicate in seeking informed consent	2	0
Communicate in writing (including medical records)	3	0
Communicate in dealing with aggression	2	1B
Communicate by telephone/VHF/radio	4	0
Communicate with those who require an interpreter	1	NA
Ability to apply ethical and legal principles in medical practice		
Maintain confidentiality	4	0
Apply ethical principles to patient contact	3	0
Obtain and record informed consent	3	0
Certify death	2	2B
Request autopsy	1	NA
Apply flag state and International law to clinical care	2	0
Assess psychological and social aspects of a patient's illness		
Assess psychological factors in presentations and impact of illness	3	2B
Assess social factors in presentations and impact of illness	3	2B
Detect stress in relation to illness	3	2B
Detect alcohol and substance abuse, dependency	2	1B
Apply the principles, skills and knowledge of evidence-based medicine		
Apply evidence to practice	1	NA
Define and carry out an appropriate literature search	1	NA
Critically appraise published medical literature	1	NA
Keep accurate and complete clinical records	3	0
Use information and information technology effectively in a medical context		
Use computers/communication equipment	4	0
Access information sources	4	0
Store and retrieve information	3	0
Apply scientific principles, method and knowledge to medical practice and research	1	NA
Promote health		
Provide patient care which minimises the risk of harm to patients	3	0
Apply measures to prevent the spread of infection	4	2B
Recognise own health needs and ensure own health does not interfere with professional responsibilities	3	0
Conform with regulation to be in charge of medical care on board	4	0
Receive and provide professional appraisal	1	0
Make informed career choices	1	NA
Engage in health promotion at individual level	2	NA

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Yacht medic professionalism*	Designated provider	TMAS grading
Professional attributes		
Probity, honesty	4	0
Commitment to maintaining skill competency and knowledge	4	0
Interpersonal skills	5	0
Professional working		
Abilities to recognise limits and ask for help	5	0
Capacity to deal with uncertainty	4	0
Ability to lead others	4	0
Ability to solve problems	4	0
Ability to make decisions	4	0
Ability to work safely and independently when necessary	4	0
Ability to communicate with shore-based TMAS and SAR services	4	0
Capacity and ability to organise and pre-plan medical support	5	0
Ethics/confidentiality		
Maintaining confidentiality	4	0
Informed consent	4	0
Concept of 'Acting in the patients best interests'	4	0
Probity, honesty	4	0
The global doctor		
Appreciation of diversity and multiculturalism	1	NA
Understanding of cultures and customs of other countries	1	NA
Ability to work in an international context	1	NA
Knowledge of a second language	1	NA
General knowledge outside medicine	1	NA

After the training designated provider should be able to demonstrate knowledge of:

Knowledge outcomes*	Designated provider	TMAS grading
Basic sciences		
Normal function (physiology)	2	0
Normal structure (anatomy)	2	0
Normal body metabolism and hormonal function (biochemistry)	2	0
Normal immune function (immunology)	1	NA
Normal cell biology	1	NA
Normal molecular biology	1	NA
Normal human development (embryology)	1	NA
Behavioural and social sciences		
Psychology	1	0
Human development (child/adolescent/adult)	1	NA
Sociology	1	NA
Clinical sciences		
Abnormal structure and mechanisms of disease (pathology)	1	NA
Infection (microbiology)	1	0

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Knowledge outcomes*	Designated provider	TMAS grading
Immunity and immunological disease	1	0
Genetics and inherited disease	1	NA
Drugs and prescribing		
Use of antibiotics and antibiotic resistance	2	1A
Principles of prescribing	2	1A
Drug side effects	2	1A
Drug interactions	2	1A
Use of blood transfusion and blood products	1	NA
Drug action and pharmacokinetics	1	NA
Use of individual drugs	2	1A
Different types of complementary/alternative medicine and their use in patient care	1	NA
Public health		
Disease prevention	2	0
Lifestyle, diet and nutrition	1	0
Health promotion	1	0
Screening for disease and disease surveillance	1	1B
Disability	1	0
Gender issues relevant to health care	1	0
Epidemiology	1	1B
Cultural and ethnic influences on health care	1	0
Resource allocation and health economics	1	NA
Global health and inequality	1	NA
Ethical and legal principles in medical practice		
Rights of patients	2	0
Rights of disabled people	1	0
Responsibilities in relation to colleagues	1	0
Role of the doctor in health care systems		
Laws relevant to medicine	1	1B
Systems of professional regulation	1	NA
Principles of clinical audit	1	NA
Systems for health care delivery	1	NA

After the training in medical help on board, designated provider on board/crew who has successfully completed the training in medical care on offshore racing yachts should have experienced through simulation practical work in these areas:

Experiential learning*	Designated provider	TMAS grading
Care of acutely ill or traumatised patients	4	2B
Care of general (internal) medical patients	3	2B
Care of general surgical patients	3	2B
Care in the community/family practice/primary care	2	2B
Care for elderly patients	1	NA
Care for sick children	1	NA
Care for the dying, palliative care	1	1B

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Experiential learning*	Designated provider	TMAS grading
Care for mentally ill patients	1	1B
Obstetric and gynaecological care	1	1B
Care for critically ill patients in Intensive Care Units	1	NA
Care of patients with specialised medical conditions (e.g. haematology, renal)	1	NA
Anaesthetic care	1	NA
Rehabilitation medicine	1	NA
Care of patients with specialised surgical conditions (e.g. cardiac surgery, urology)	1	NA

*List of competences as stated in WS/IMHA Consensus Paper on Medical Support for Off Shore Yacht Races – Medical Training

APPENDIX 2. LIST OF RECOMMENDED MEDICINES AND EQUIPMENT ON BOARD OFF-SHORE RACING YACHTS** WORLD HEALTH ORGANISATION FORMAT

I	II	III					IV	V
		Recommended Quantity for 10 Sailors on Board Off-shore Racing Yachts (WS OSR Cat. 0–4)						
Item No.	Recommended Medicine and Dosage Strength Representing Best Practice on Board Off-shore Racing Yachts	0	1	2	3	4	Indications on Board Off-shore Racing Yachts	Need to contact TMAS
MEDICINES								
1.	Acetylsalicylic acid 300 mg tablet N02BA01	30	30	20	20	20	To inhibit formation of blood clots in angina pectoris, myocardial infarction, stroke	x
2.	Acyclovir 5% cream (10 g) D06BB03	2	2				To treat cold sores	x
3.	Adrenaline auto-injector 0.5 mg C01CA24	2	2	2			To raise blood pressure in anaphylaxis; to dilate airways in severe asthma or anaphylaxis	
4.	Adrenaline 1 mg/mL ampoule C01CA24	10	10	10			To raise blood pressure in anaphylaxis; to dilate airways in severe asthma or anaphylaxis	x
5.	Amethocaine 5% eye drops (10 mL) S01HA03	1	1				For eye examination and procedures	x
6.	Amoxicillin + clavulanate 500/125 tablet J01CR02	60	60	10			To treat infections responsive to this antibiotic	x
7.	Amoxicillin + clavulanate 1000/200 ampoule J01CR02	10	10				To treat infections responsive to this antibiotic	x
8.	Antacid alginate sodium tablet 500 mg A02AX	60	60	20			Heartburn relief	
9.	Azytromycin 500 mg J01FA10 or doxycycline 100 mg tablet J01AA02	15 (50)	15 (50)	3 (10)			To treat infections responsive to this antibiotic	x
10.	B-panthenol ointment 30 g D03AX03	3	3	1			Skin care	
11.	Beclomethasone inhaler (200 doses) R03BA01	1	1				To control symptoms of asthma	x
12.	Bisacodyl 5 mg tablet A06AB02	60	60				For treatment of constipation	

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I Item No.	II Recommended Medicine and Dosage Strength Representing Best Practice on Board Off-shore Racing Yachts	III Recommended Quantity for 10 Sailors on Board Off-shore Racing Yachts (WS OSR Cat. 0–4)					IV Indications on Board Off-shore Racing Yachts	V Need to contact TMAS
		0	1	2	3	4		
13.	Ceftriaxone 1 g ampoule J01DD04	10	10				To treat infections responsive to this antibiotic	x
14.	Chloramphenicol S01AA01 or tetracycline eye ointment (4 g) S01AA09	2	2	1	1	1	Eye infections	x
15.	Chlorphenamine 10 mg/mL ampoule R06AB04	5	5	5			For acute urticaria; control of allergic reactions	x
16.	Choline salicylate gel (15 g) N02BA03 Other agents for local oral treatment A01AD11	1	1				To relieve pain, inflammation, lesions and ulcers in the mouth	x
17.	Cinnarizine 15 mg N07CA02 or dimenhydrinate + caffeine (30/10 mg) tablet R06AA52	170	170	20	20	20	To prevent and treat motion-sickness	
18.	Ciprofloxacin 500 mg tablet J01MA02	30	30				To treat infections responsive to this antibiotic	x
19.	Clotrimazole 500 mg pessary G01AF02	2	2				To treat vaginal fungal infections	x
20.	Cyclizine 50 mg/mL ampoule R06AE03	10	10	10			Treating motion-sickness and vomiting	x
21.	Dexamethasone eye drops 0.1% (10 mL) S01BA01	1	1				To treat eye inflammation	x
22.	Diazepam 5 mg tablet N05BA01	60	60	30			To treat alcohol withdrawal; to treat anxiety and psychosis	x
23.	Diazepam 10 mg/2 mL ampoule N05BA01	10	10				To treat anxiety and seizures	x
24.	Diclofenac 1% gel M02AA15	10	10				To reduce moderate pain	
25.	Flucloxacillin 500 mg tablet J01CF05	80	80				To treat infections responsive to this antibiotic	x
26.	Furosemide 40 mg tablet C03CA01	20	20				Diuretic	x
27.	Fusidic acid 2% ointment (30 g) D06AX01	4	4				To treat skin infection	
28.	Glyceril trinitrate 400 mcg spray (200 metered sprays) C01DA02	1	1				To treat angina pectoris (chest pain); to treat myocardial infarction	x
29.	Haemorrhoid preparations – proprietary preparation of choice C05AX	2	2				Haemorrhoid preparations	
30.	Hydrocortisone 1% cream (15 g) D07AA02	3	3				To treat allergy and some other inflammatory skin conditions	
31.	Hydrocortisone 100 mg/mL (5 mL) ampoule H02AB09	5	5	5			To treat life-threatening and severe asthma; to treat anaphylaxis; to treat severe allergic reactions	x

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		0	1	2	3	4		
32.	Hyoscine hydrobromide 1.5 mg patch A04AD01	5	5	3			To prevent motion sickness	
33.	Ibuprofen 400 mg tablet M01AE01	100	100	20			To treat inflammation; to reduce mild to moderate pain, especially if associated with inflammation	
34.	Lansoprazole 30 mg tablet A02BC03	60	60				To treat gastro-oesophageal reflux; to treat ulcer disease	x
35.	Lignocaine 2% 5 mL ampoule N01BB02	10	10				Local anaesthesia	
36.	Lignocaine gel (6 mL) N01BB02	1	1				Local anaesthetic	
37.	Loperamide 2 mg tablet A07DA03	60	60	20			To treat symptoms of diarrhoea	
38.	Loratadine 10 mg tablet R06AX13	30	30	30			To treat allergy symptoms	
39.	Macrogol oral powder (sachets) A06AD15	16	16				For treatment of constipation	
40.	Metronidazole 400 mg tablet P01AB01	20	20				To treat intestinal infections responsive to this antibiotic	x
41.	Metronidazole 1 g suppository G01AF01	10	10				To treat intestinal infections responsive to this antibiotic	x
42.	Miconazole 2% ointment (30 g) D01AC02	2	2				To treat fungal skin infections	
43.	Miconazole 2% D01AC02 + hydrocortisone ointment (30 g) D01AC20	2	2				To treat fungal skin infections	
44.	Oral rehydration salts sachets A07CA	20	20				To prevent or treat dehydration	
45.	Paracetamol 500 mg tablet N02BE01	100	100	40	40	40	To reduce pain and fever	
46.	Permethrin lotion 5% (60 g) P03AC04	2	2				To treat scabies	x
47.	Petroleum Jelly 30 g D02AC	3	3				To treat chapped skin. For lubricating rectal thermometer	
48.	Phloroglucinol 80 mg A03AX12 or hyoscine butylbromide 10 mg tablet A03BB01	20	20	10	10	10	To relieve intestinal or urinary spasms	x
49.	Prednisone 5 mg tablet A07EA03	100	100	100			To treat severe asthma; to treat other inflammatory conditions	x
50.	Prochlorperazine 3 mg oral dispenser (50) N05AB04	1	1				To control severe nausea and vomiting	
51.	Salbutamol aerosol (inhaler – 200 doses) R03AC02	1	1				To treat asthma; to treat other lung diseases	x
52.	Silver sulfadiazine cream (50 g) D06BA01	2	2	1	1	1	Treatment of burns	

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		0	1	2	3	4		
53.	Sodium chloride 0.9% infusion (plastic-bottle 1 L or 2 × 500 mL plastic bottle) B05XA03	10	10				For fluid replacement	x
54.	Tobramycin/ /dexamethasone eye/ear drops (10 mL) S01CA01	2	2				To treat eye and ear infections	x
55.	Tramadol 50 mg N02AX02 or oxycodone 15 mg tablet N02AA05	100	100	20			Against severe pain	
56.	Tramadol 100 mg/2 mL ampoule N02AX02	20	20	20			Against severe pain	x
57.	Water for injection ampoule 5 mL V07AB	10	10				Reconstitution of injectable drugs provided as powders	x
EQUIPMENT								
RESUSCITATION EQUIPMENT								
58.	Oropharyngeal airway (Guedel/Mayo-tube) size 3 and 4 (medium and large)	2	2	2	2	2	Oropharyngeal airways	
59.	Pocket face mask	1	1	1	1	1	For mouth-to-mouth resuscitation	
60.	Manual aspirator (including 2 catheters)	1	1				Mechanical aspirator to clear upper airways	
DRESSING MATERIAL AND SUTURING EQUIPMENT								
61.	Wound closure strips	30	30	20	20	20	Adhesive skin closures	
62.	Sutures, silk non-absorbable with curved non-traumatic needle 2/0	10	10				Suturing equipment	
63.	Sutures, absorbable with curved non-traumatic needle 3/0	10	10				Suturing equipment	
64.	Skin Stapler × 15 staples	2	2	1			Wound staplers	
65.	Stapler remover	1	1	1			Wound staplers	
66.	2-octyl cyanoacrylate 0.7 mL ampoule	6	6	2			Skin (wound) adhesive	
67.	Assorted wound plasters	30	30	20	20	20	Adhesive dressing	
68.	Adhesive wound dressing 10 × 10 cm	25	25	5	5	5	Adhesive dressing	
69.	First aid absorbent gauze covered cotton pad sewn onto a cotton bandage small	1	1	1	1	1	Sterile compressive bandages	
70.	First aid absorbent gauze covered cotton pad sewn onto a cotton bandage medium	1	1	1	1	1	Sterile compressive bandages	
71.	First aid absorbent gauze covered cotton pad sewn onto a cotton bandage large	1	1	1	1	1	Sterile compressive bandages	

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		0	1	2	3	4		
72.	Sterile gauze compresses 10 × 10 cm	20	20	5	3	3	Sterile gauze compresses	
73.	Low adherent dressing 10 × 10 cm	20	20	2	2	2	Gauze dressing with non-adherent surface	
74.	Iodine non-adherent dressing 10 × 10 cm	10	10	2			Gauze dressing with non-adherent surface	
75.	Burn dressing 10 × 10 cm	2	2	2			Burn dressing	
76.	Burn bag for hands (sterile)	1	1				Burn dressing	
77.	Haemostatic dressing	4	4	1	1	1	Haemostatic agent	
78.	Elastic fixation bandage 6 cm × 4 m	5	5	2	2	2	Bandage	
79.	Tubular bandage 5, 8, 10 cm × 10 m	3	3				Bandage	
80.	Adhesive surgical tape 2.5 cm × 10 m	1	1	1	1	1	Bandage	
81.	Wound wipes (Chlorhexidine)	4	4	4	4	4	Antiseptic	
82.	Sterile gauze swabs 5 × 5 cm	20	20				Sterile swabs	
83.	Adhesive elastic bandage 7.5 cm × 4.5 m	2	2	2	2	2	Bandage	
84.	Cohesive bandage 7.5 cm × 4.5 cm	1	1				Bandage	
85.	Trauma tourniquet	1	1	1	1	1	Compressing device (bandage), to control bleeding	
86.	Eye bath	1	1				To wash away particles – to cleanse the eyes	
87.	Eyewash sterile (20 mL)	4	4	4	4	4	To cleanse the eyes	
88.	Eye pad	1	1				Dressing	
89.	Eye shield	1	1				To cover (protect) the eye	
90.	Surgical gloves sterile, in pairs M	10	10				Gloves	
91.	Surgical gloves sterile, in pairs L	10	10				Gloves	
92.	Gloves non-sterile, disposable	10	10				Gloves	
INSTRUMENTS								
93.	Bandage scissors (tough cut scissors)	1	1	1			Scissors	
94.	Scissors surgical 12 cm	1	1	1	1	1	Scissors	
95.	Artery clamp	1	1				Haemostatic clamp	
96.	Needle holder	1	1				Needle holder	
97.	Teeth tissue forceps	1	1				Forceps	

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		0	1	2	3	4		
98.	Splinter forceps (tweezer)	1	1				Forceps	
99.	Razor, disposable	2	1				To cut the clothes	
100.	Scalpel, sterile, disposable	4	4				Disposable scalpels	
EXAMINATION AND MONITORING EQUIPMENT								
101.	Disposable tongue depressor	10	10					
102.	Stethoscope	1	1					
103.	Otoscope	1	1					
104.	Sphygmomanometer manual	1	1				Blood pressure set	
105.	Sphygmomanometer automatic	1	1				Blood pressure set	
106.	Large blood pressure cuff	1	1				Blood pressure cuff	
107.	Thermometer digital	1	1	1			Thermometer	
108.	Pulse oximeter	1	1	1			For monitoring of oxygen saturation	
109.	Urine testing strips 10 parameters	25	25				Reactive strips for urine analysis	
110.	Blood glucose testing kit/25 strips + 25 needles	1	1				Reactive strips for blood analysis	
111.	Pregnancy testing kit	2	2				Reactive strips for urine analysis	
EQUIPMENT FOR INJECTION, INFUSION AND CATHETERISATION								
112.	Syringes 5 mL	10	10				Equipment for injection	
113.	Syringes 2 mL	10	10				Equipment for injection	
114.	Needle 23G hypodermic	20	20				Equipment for injection	
115.	Intravenous infusion cannula 16G and 22G, Luer lock connection	6	6				Equipment for infusion	x
116.	Intravenous giving set, Luer lock connection	3	3				Equipment for infusion	x
117.	Urinary catheters 14G and 16G silicone	2	2				Equipment for catheterisation	x
118.	Urine drainage bag	1	1				Equipment for catheterisation	
119.	Nasogastric tube 12 F, 16 F	2	2				For nutritional support and therapeutic purposes	x
GENERAL MEDICAL AND NURSING EQUIPMENT								
120.	Ethanol 70% hand cleanser gel 250 mL	2	2	1			An alternative to hand washing	
121.	Head torch	1	1	1				
122.	Foil blanket	1	1				To retain body heat	
123.	Cling film	1	1					
124.	Cold pack	2	2	2	2	2	To reduce swelling and pain	
125.	Dental repair kit	1	1					x

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IMMOBILISATION AND TRANSPORTATION EQUIPMENT								
126.	Malleable splint	2	2	2	2	2	For immobilising bone and soft tissue injuries	
127.	Inflatable splints arm and leg	1	1				For immobilising bone and soft tissue injuries	
128.	Traction splint	1	1				To treat severe midshaft fractures of the femur	
129.	Neck collar, semi-rigid, adjustable	1	1	1	1	1	For neck immobilisation	
130.	Pelvic binder	1	1				For initial management of pelvic ring injuries	
131.	Casting tape fiberglass 10 cm × 3.5 m, foam and wrap	1	1				For immobilising broken or fractured limbs	
132.	Crepe bandage 7.5 cm	2	2				To offer support and compression for joints and strained muscles	
133.	Triangular bandage	2	2				For use as a sling, for splinting or for general padding and protection	
134.	Safety pins	6	6					
135.	Evacuation stretcher	1	1				Stretcher	

**List of recommended medicines and equipment as stated in WS/IMHA Consensus Paper on Medical Support for Off Shore Yacht Races – Medical Kit Inventory