

Healthy Sailing Guideline on medical operations in expedition vessel: aspects of maritime occupational medicine

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ABSTRACT

Introduction: Development of guidelines for specificities/needs of medical operations in expedition vessels is included in task 3.7 of the European project Healthy Sailing [1], a research/innovation action that aims to improve the quality of passenger shipping services, and make them, more resilient, competitive and efficient. A draft of this guideline with a special focus on their innovative points regarding crew medical assistance on board will be presented in order to receive feedback from all stakeholders. **Methods:** The guideline draft has been developed on the basis of ILO/IMO Regulations [2], the Maritime Labor Convention 2006, the WHO Handbook for Ship Sanitation [3], the Shipsan Manual [4], and previous guidelines (American College of Emergency Physicians [5], Norwegian Maritime Medical Centre [6] and International Maritime Health Association documents [7]).

References for ashore hospitals have also been considered (Joint Commission [8] Accreditation Standards, best practices for clinical risk management and international medical facility guidelines [9, 10]), including relevant EU Legislation [11–13] and ISO regulations [14].

The development of draft guidelines proceeded in light of our practical experience gained in new cruise ships/ferries' medical facilities' authorization process [15, 16].

The draft layout includes: 1) Medical facilities activities; 2) Health ship services plan; 3) Health staff (consistency and professionals required, qualifications, training and skills; 4) Layout and physical design; 5) Equipment and laboratory testing capability; 6) Telemedical assistance; 7) Medicines; 8) Preparedness and readiness (contingency medical plan and reserve emergency medical facility); 9) Public health and infection control; 10) Quality System, Clinical Risk Management; 11) Customer satisfaction and complaints management; 12) Prevention and occupational medicine on crew; 13) Medico legal practice (according to the new US Legislation [17]; 14) Medical spa, aesthetic center, and dialysis); 15) Environmental management; 16) Administrative provisions (authorization process, periodic audits, grading).

The draft will be implemented subsequently with a six-month pilot testing on board, conducted in collaboration of some cruise ship companies.

Conclusions: The innovative aspects of this guideline compared to the previous are A) A global view of the ship medical facilities based on the three-pillar model, ensuring that they provide high-quality medical care, effective actions to prevent the spread of communicable diseases, and occupational/preventive medicine on crew. Specifically, the following are required. 1) Prevention of cardiovascular risk, alcohol/drugs abuse and psychiatric disorders; 2) Management of chronic conditions among

crew members (e.g., diabetes, anticoagulant therapies, psychological distress); 3) Coordination with PME crew examination, including the integration of the medicine chest; B) A health quality and clinical risk management system including crew satisfaction surveys and measures to increase accessibility to medical facilities, specific for crew; C) The provision of an advanced second level of TMAS for ships without a doctor on board or sailing in remote areas lacking adequate shore-based medical facilities. D) A collaborative authorization process, extending from the design phase through shipyard to sea operations and post-launch audits that consider crew opinions/suggestions. This guidelines draft will be open to continuous review, updates, and expansion with the contribution of all stakeholders. Readers are encouraged to provide feedback and to contribute material for further updates.

Keywords: ship medical facilities, Healthy Sailing, seafarers' preventive and occupational medicine

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Table 1. Guidelines contents

STRUCTURE AND CONTENTS



- **S1 INTRODUCTION AND METHODOLOGY**
- **S2 PROGRAMMATION: HEALTH SHIP SERVICE PLANNING**
- **S3 STAFF**
 - CONSISTENCY
 - QUALIFICATIONS, TRAINING AND SKILLS
- **S4 LAYOUT AND PHYSICAL DESIGN**
 - SAFETY
 - LOCATION AND ACCESSIBILITY
 - ERGONOMICS
 - DECKS, SURFACES AND MATERIALS
 - **GENERAL SERVICES** (LIGHTING, POWER AND EMERGENCY POWER SYSTEM, HVAC (HEATING, VENTILATION, AIR CONDITIONING), ICT AND COMMUNICATION SYSTEMS, WATER SYSTEMS)
 - **SPACE LAYOUT PLANNING** (WAITING ROOM(S), IMPATIENT ACCOMMODATION ROOM(S), ISOLATION WARD(S), CONSULTING / EXAMINATION ROOM(S), OPERATIONAL TREATMENT / STABILIZATION ROOM (TRAUMA AND RESUSCITATION BAY), INTENSIVE CARE UNIT ROOM, X RAYS AREA, MORGUE, TOILETS)
- **S5 EQUIPMENT**
 - MEDICAL EQUIPMENT
 - LABORATORY TESTING CAPABILITY
- **S6 TMAS (telemedical assistance)**
- **S7 MEDICINE CHEST**
 - CLASSES AND QUANTITIES
 - MEDICINE STORAGE
- **S8 PUBLIC HEALTH**
 - PUBLIC HEALTH COMPANY/SHIP ORGANIZATION
 - INFECTIOUS RISK CONTROL
 - COMMUNICATIONS TO HEALTH PORT AUTHORITIES
- **S9 PREPAREDNESS and READINESS**
 - RESERVE EMERGENCY MEDICAL FACILITY AND PORTABLE MEDICAL BAGS
 - AUTOMATED EXTERNAL DEFIBRILLATORS IN PAX/CREW COMMON AREAS
 - CONTINGENCY MEDICAL PLAN AND DRILLS
 - MEDICAL WASTE
- **S10 MEDICAL SERVICES/ CLINICAL PRACTICE**
 - ACCESS TO CARE AND CONTINUITY OF CARE
 - COMMUNICATION WITH USERS (PASSENGERS AND CREW)
 - SHIP HEALTH SERVICES CHARTERED
- **S11 QUALITY AND CLINICAL RISK MANAGEMENT SYSTEM**
 - CLINICAL RISK MANAGEMENT
 - QUALITY SYSTEM
 - CUSTOMER / HEALTH STAFF MEMBER SATISFACTION AND COMPLAINTS MANAGEMENT
 - CLINICAL DOCUMENTATION
 - MEDICAL OPERATIONAL PROCEDURES
 - MANAGEMENT OF HEALTH INFORMATION
- **S12 MEDICO LEGAL PROCEDURES**
 - SEXUAL ASSAULTS TREATMENT AND INVESTIGATION
- **S13 MEDICAL PREVENTION and OCCUPATIONAL MEDICINE ON CREW**
 - MEDICAL PREVENTION AND OCCUPATIONAL MEDICINE FOR HEALTH STAFF
- **S14 COMPLEMENTARY HEALTH SERVICES**
 - CRUISE MEDICAL SPA: preventive, aesthetic and wellness medicine
 - DIALYSIS
- **S15 ENVIRONMENTAL IMPACT, ECOLOGICAL TRANSITION**
- **S16 DISCLOSURES**
- **S17 ADMINISTRATIVE PROVISIONS**
 - INDEPENDENCE AND CONFLICTS OF INTERESTS
 - Approval process for medical facilities on new ships
 - Audits on existing ship medical facilities
- **S18 CHECK LISTS**
- **S19 INDEX**

Table 2. Requirements for the guidelines section “Medical Prevention and Occupational Medicine on Crew”

Any seaman should get medical care at sea as equivalent as possible to what she or he can expect ashore. <i>Maritime Labour Convention's standard A 4.1</i>	
ITEM	REQUIREMENT
S13 MPOMC	MEDICAL PREVENTION AND OCCUPATIONAL MEDICINE ON CREW
HEALTH ASSISTANCE FOR CREW MUST BE FREE WITHOUT APPLICATION OF ANY CHARGE MEDICAL SERVICES ARE TIME ACCESSIBLE FOR CREW : evidence of organizational document granting for crew : A) in case of acute conditions possibility to leave work immediately to access medical facilities B) in case of non acute conditions or follow up compatibility medical facilities opening times with crew free time from work shift or possibility for crew to have permission to access medical facility during work shift Dedicated consultation for follow up of crew with chronic pathologies (eg Diabetes hyperthension , HIV infection) PREVENTIVE OCCUPATIONAL MEDICINE : PRESENCE OF PLANS TO PROMOTE ONBOARD THE PREVENTION AMONG CREW OF A) CARDIOVASCULAR RISKS C) ALCOHOL ABUSE AND DRUG USE D) SEXUAL TRANSMITTED INFECTION PRESENCE OF SPECIFIC PROGRAM TO SUPPORT CREW MENTAL HEALTH AND PREVENT PHYSICHIATRIC DISORDERS including phschiatric y and/or Psychological counselling on line if deemed necessary by ship doctor or company occupational doctor Copyright MMXXIV A. CAMPAGNA mail camp.anto@virgilio.it - All rights reserved - Reproduction forbidden	
PROCEDURE OF COMMUNICATION FROM OCCUPATIONAL MEDICINE COMPANY SERVICE ABOUT CREW'S SPECIFIC A) FOLLOW UP CLINICAL ,LABORATORY AND IMAGING) b)REQUIRED MEDICAL TREATMENT ONBOARD c) LIMITATIONS GIVEN ON STCVW REG I/9 Fitness Certificate in particular " fit only for ship with doctor onboard" IN ADDITION TO FLAG REQUIREMENT, SHIP'S MEDICINE CHEST ADEQUATE TO CREW PATHOLOGIES (EG Asthma medications , HRTT for HIV, Antidiabetic drugs;) VACCINATION SERVICE onboard FOR CREW A) according to Flag State law and OCCUPATIONAL MEDICINE COMPANY PROGRAM (mandatory presence of tetanus / tetanus dyphtheria vaccine, antitetanus immunoglobulin) B) according to Guidelines for vaccination of passengers/crew in large passenger ships 1372 healthy sailing C) C) vaccine for seasonal influenza and Covid 19 D) vaccines for medical staff (hepatitis b , chickenpox , measles) CREW CHECK AT EMBARKATION FOR PRESENCE OF SYMPTOMS AS GROUNDS FOR SUSPECTING THE EXISTENCE OF A DISEASE OF AN INFECTIOUS NATURE	