

Maritime Medicine and Medicine for Seafarers

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ABSTRACT

Maritime medicine and medicine for seafarers are not the same. Maritime medicine is specialization for medical doctors. Medicine for seafarers is some part of medicine which some crew members (master, chief mate) need to know. Seafaring has always been considered a dangerous occupation with a higher morbidity and mortality than in most occupations ashore. Crews of merchant ships are exposed to extremes of weather, hazards connected with the operation of mechanical equipment, toxic cargoes and toxic substances used aboard. Their health is affected by noise, vibration, smoke inhalation, fatigue, overwork, and other exposures. Travel to the tropics results in exposure to exotic diseases as malaria, and other infections. Due to the nature of their work, seafarers spend long periods of time away from their families and, therefore, represent a group at risk for sexually transmitted diseases, including HIV infection. Seamen are swept overboard by heavy seas; they can die as a result of vessel casualties (foundering, capsizing, explosions, fires).

The continuing medical challenges of injury and illness on board remained the same as before, but better communications have enabled tele-medical advice to be readily obtained in all parts of the world's oceans. The introduction of antibiotics and better antimalarial drugs has further reduced the threat from infectious disease. Physical, chemical and biological health hazards as well as the ergonomic ones related to physical job demands, and psycho-social ones from isolation, organization pressures and complex work demands remain or have increased because of reduced crews and tighter schedules.

In case of sudden illness or an accident and injury during the ship's voyage, the chances of receiving proper and effective treatment are not as good for seafarers as for a worker on shore because of lack of direct and prompt access to qualified medical assistance. Due to the above mentioned, seafarer's health education and training of seafarers to provide basic medical services on board are mandatory.

Maritime medicine has important areas of shared interest and competence with occupational medicine, primary health care, emergency medicine, public health, tropical medicine, and travel medicine.

KEY WORDS

Maritime medicine, medicine for seafarers, health risks

MARITIME MEDICINE

The definition of "maritime medicine" covers a large number of issues, such as: the environment of seafaring (effects of microclimate and macroclimate, noise and

vibration aboard ship on seafarers, other work related exposures); conditions of work and life on merchant, passenger or fishing ships or on oil rigs; sanitary problems on ships; nutrition and food hygiene aboard ship; pathology of workers employed on ships (diseases, accidents and injuries); toxicology of seafaring;

exotic diseases; health problems of navy personnel; personal hygiene of seafarers; vaccinations of ship's crew members and other preventive interventions as their health education; training of seafarers in providing basic medical services on board ship during voyages; health standards for work at sea and medical examinations of seafarers and radio medical advice for ships.

In the past, seafarers have been the source of transmission of infectious diseases from country to country. Nowadays, there is a similar problem with HIV/AIDS infection. The research published show that seafarers, more often than the rest of the population, contract HIV/AIDS infections and introduce it to the population of the country which they inhabit.

Working and living environment of seafarers and fatigue

Living abroad can also pose strains from unfamiliar diets and climates, from limitations in accommodation and from crewmembers not understanding and being empathetic to one another. Distance from familiar places and loved ones is also often an important contributor to feel bad.

On-board periods are often long and leisure time choice of activities is usually limited. Much of leisure time is thus spent on meals, snacking, resting and corresponding with family or friends, whereas only a minority of seafarers engage in physical fitness activities. Limited space on board makes running or walking impossible. Many jobs on modern vessels have become sedentary or require only moderate levels of energy expenditure, the extent of physical inactivity is alarmingly high.

It is the fact that nutrition quality is often limited and ships often lack professional cooks. The results are overweight seafarers.

On the other hand, the development of technical standards of building and fitting of vessels, as well as the competitiveness of the shipping market have caused saving on labour, i.e. cost reduction on account of reduced number of crew. The decrease of such costs has also included the hiring of a cheaper labour force from the Far East and countries of Eastern Europe.

Another trend accompanying the world shipping industry is the reduction in the number of crew in accordance with the "safety minimum", which means minimum manning document, determined by the law of the country of vessel's registry.

Reduction in the number of crew greatly affects the crew efforts because the number of crew is often disproportionate to the number of functions that are in the unit of time. Fatigue is also contributed by poor work organisation, inadequate work position, long-lasting and intensive work and insufficient training. Poor nourishment, insufficient motivation, various illnesses, discontent with private life and poor interpersonal relations, and contract duration are factors which also contribute to fatigue.

Fatigue was consistently associated with poor-quality sleep, negative environmental factors, high job demands and high stress. Other important factors included frequent port turn-rounds, physical work hazards, working more than 12 hours a day, low job support and finding the switch to port-work fatiguing. Evidence suggests that large numbers of seafarers work hours in excess of those allowed by current legislation, and that under-recording of working hours is associated with higher levels of fatigue.

Some researchers have also shown that the consequences of fatigue are not only felt in terms of impaired performance and reduced safety but decreased well-being and increased risk of mental health problems, also known to be risk factors for future chronic disease.

Acquaintance with all of the above mentioned is necessary to be able to understand the processes and pathophysiology of different diseases accompanying seafaring professions, and this is the subject of research of maritime medicine.

Infectious risks with seafarers

Seafarers are a unique occupational group in that their travels to different parts of the world expose them to different types of infections, an exposure comparable only to airline staff. Quite different to the situation in the past, seafarers rarely get an opportunity to visit places far away from the ports of call, due to the rapid turn - round time at ports. However, they are still exposed to infections at ports of call.

Respiratory illness is the most common cause of presumably communicable diseases aboard cargo ships and may cause outbreaks of considerable morbidity.

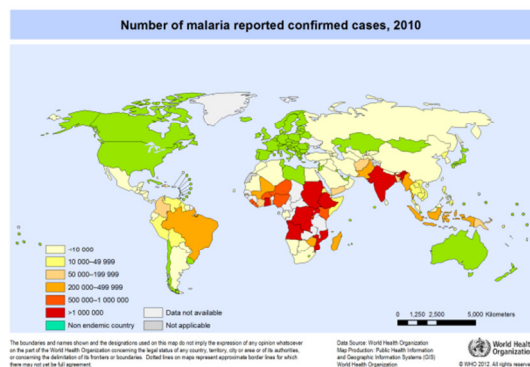
Recent studies conducted mostly in Europe, have shown concerns on malaria, hepatitis A, hepatitis B, hepatitis C, HIV and gastrointestinal infections.

Because of the nature of their work seafarers spend long periods of time away from their

families and, therefore, represent a group at risk for sexually transmitted diseases, including HIV infection.

Malaria is endemic in 92 countries with small pockets of transmission occurring in further six countries (WHO 2012). Transmission of malaria depends on environmental factors: temperature, humidity and rainfall. If they are favourable for breeding of the anopheles mosquito vector, transmission occurs. It may be seasonal (in temperate zones) or perennial, in hot and humid climates.

Seasonality of transmission should be taken into consideration when advice is given to seafarers. However, it is not an important factor for assessing the risk of infection of seafarers in hyper-endemic coastal areas in Africa and Asia, where transmission continues throughout the year.



Source:

http://reliefweb.int/sites/reliefweb.int/files/resources/map_2264.pdf

Labour standards

The Maritime Labour Convention, 2006 (MLC, 2006) establishes minimum working and living standards for all seafarers working on ships flying the flags of ratifying countries.

Convention No. 180, which was adopted by the 84th (Maritime) session of the International Labour Conference (Geneva, 1996), introduced for the first time comprehensive international provisions to establish limits on seafarers' maximum working hours or minimum rest periods so as to maintain safe ship operations and minimize fatigue.

Regulation on *Watchkeeping Arrangements and Performance of Other Duties on Board Ships for Assurance of Safety of Navigation and Marine Pollution Protection*, prescribe that the maximum hours of work of master, officers and

other members of crew shall not exceed 14 hours daily, and that the master, officers and other members of crew shall have minimum hours of rest, not less than 10 hours in any 24-hour-period, and 77 hours in any 7-day-period (168 hours).

The same Regulation prescribes that the hours of rest may be divided into no more than two periods, one of which shall be at least 6 hours, and the interval between consecutive periods of rest shall not exceed 14 hours.

Medical care / Medicine for seafarers

An ill seafarer or one who is injured at sea does not have ready access to professional health care. Ships which do not carry a medical doctor shall be required to have either at least one seafarer on board who is in charge of medical care and administering medicine as part of their regular duties. Persons in charge of medical care on board who are not medical doctors shall have satisfactorily completed training in medical care. Hence, there must be medical equipment available, a person trained to use it and ready access to information on the prevention, diagnosis and treatment of a disease. Normally this is in the form of a manual and this is supported by international arrangements for access to radio medical advice all over the world.

The Maritime Labour Convention requires all ships to carry a medical chest and medical equipment, while the IMO STCW Convention addresses medical competences required for seafarers on board. The aim is to ensure that, in emergencies, ship based medical care is similar to that found ashore.

The STCW Convention from 1978 is a very important convention from the maritime health professional's point of view.

It is the convention regulating the pre-sea medical and periodic examinations of seafarers, despite being very general in its approach. It also set up the standards for emergency medical training requirements for different groups of personnel on board.

Training in medical emergency procedures and medical care is another very important issue for the STCW Convention. The training requirements differ according to position on board.

On the lowest level is that of "personal survival techniques". This is obligatory for where anyone signing on to a ship, as is the next step "elementary first aid".

The next level is that of “medical first aid”, which is obligatory for persons with a safety function in certain positions on board, usually working in the master and deck and engine departments.

The highest level is “medical care”. This course aims at training dedicated personnel to carry out medical care on board, and is obligatory for nautical personnel. While the responsibility for medical care always lies with the ship’s master, it is usually given to the 1st officer to handle all practical cases.

The knowledge and skills of seafarers on board a ship regarding medical competence are covered by the STCW Convention requirements for training level of nautical personnel as necessary for their certificates.

Medical Advice at Sea

The fact that on board merchant ships there are no medical doctors illustrates unfavourable conditions in which ill seafarers are found, helpless in the open seas, hundreds of miles distant from the closest doctor. The information that future seafarers in their regular education master the basics of first aid and medical care only partially mitigates the problem because the knowledge acquired is rarely refreshed, while the extent of medical aid which should be administered by ship’s officers often extends beyond their professional abilities.

Due to the situation described the need has long been realized for seafarers to establish a fast contact with a doctor to consult hi/her about the diagnosis, treatment and care of the diseased. Conditions for such contacts have been established only after the introduction of radio on board ships and increase in the range of marine radio stations.

Medical Advice at Sea Recommendation from International Labour Organization (ILO) was the first ILO document discussing radio medical advice for seafarers. It is a rather short document, but very important. At this time several shipping nations had already realized the need and established radio medical services based on risk assessment and professional evaluation, with the CIRM in Rome as the oldest and best known of them all.

The Ship’s Medical chest

ILO Maritime Labour Convention 2006 stipulates that all ships shall carry a medical chest, medical equipment and a medical guide.

The ship’s medical chest is mentioned in several ways. To sum up, we can say that ships must have adequate medical supplies that are periodically inspected, kept in good condition, and are ready for use whenever required.

Quantities will depend on duration and destination of the voyage, the number of crew members, and the nature of the cargo. World Health Organization (WHO) has developed a recommended list of medicines, based on professional assessment and best practice, linked to the International Medical Guide for Ships (IMGS) and published as an appendix to the IMGS.

International Medical Guide for Ships

The International Medical Guide for Ships shows designated first-aid providers how to diagnose, treat, and prevent the health problems of seafarers on board ship. This Guide is a standard reference for training courses of medical first aid and medical care, and is designed for use by all crew members charged with providing medical care on board. Since its first publication in 1967, the International Medical Guide for Ships has been a standard reference for medical care on board ships. The second edition, written in 1988, has been translated into more than 30 languages, and has been used in tens of thousands of ships. The third edition, written in 2007, contains fully updated recommendations aimed to promote and protect the health of seafarers, and is consistent with the latest revisions of both the WHO Model List of Essential Medicines and the International Health Regulations (2005).

Conclusion

Maritime medicine is specialization for medical doctors. Medicine for seafarers is a certain amount of knowledge and facts accumulated by seafarers in the course of their education and training, required for administering aid to the diseased and injured seafarers in situations in which professional assistance is out of reach and available only via radio-medical advice or other means of telecommunication including, in the best of cases, telemedicine.

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