Maritime Health Workshop Reports

"TOWARDS A STANDARDIZED CURRICULUM FOR TMAS DOCTORS: REPORT FROM AN INTERNATIONAL MARITIME HEALTH ASSOCIATION WORKSHOP"

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ABSTRACT

Background: *Telemedical Assistance Services (TMAS) play a critical role in delivering remote medical advice to seafarers. Despite the increasing demand for such services, no standardized training guidelines exist for TMAS doctors. Recognizing this gap, the International Maritime Health Association (IMHA), with support from the ITF Seafarers' Trust, convened an international workshop to develop a standardized training framework.*

Objective: *To establish a curriculum for TMAS doctor training, recommend effective learning modalities, and outline strategies for ongoing professional development and quality assurance.*

Methods: *The workshop brought together 16 participants from eight countries, representing public and private TMAS providers. Through presentations, small group discussions, and plenary sessions, participants identified key competencies, proposed curriculum content, and explored training delivery methods.*

Results: *A three-module curriculum was developed:*

1. ***International Maritime Context:*** *Covering maritime regulations, TMAS roles in Search and Rescue, and cultural considerations.*
2. ***Medical Knowledge:*** *Addressing emergency care, occupational health, evacuation protocols, and mass casualty management.*
3. ***Local Systems and Processes:*** *Focusing on national laws, local TMAS operations, and communication systems.*

Recommended learning methods include e-learning for theoretical knowledge, hands-on workshops for communication and medical skills, onboard familiarization to understand shipboard environments and ongoing training and clinical governance measures.

Conclusion: *The workshop highlighted the need for consistent, high-quality training for TMAS doctors to address the unique challenges of maritime medicine. The agreed curriculum provides a robust foundation for training programs and promotes international collaboration to ensure best practices. Future initiatives include the development of e-learning platforms and accredited in-person courses.*

Keywords: TMAS, telemedicine, maritime medicine, medical training, seafarers, curriculum development

INTRODUCTION

The provision of telemedical advice to seafarers is mandated by the Maritime Labour Convention (MLC) 2006[1] and other international frameworks. However, the structure and scope of TMAS vary significantly across providers and countries[2]. The demand for medical advice from seafarers remains one of the primary reasons for contact with shoreside support, encompassing a wide range of medical conditions[3].

Despite the critical role of Telemedical Assistance Services (TMAS) in ensuring seafarers receive timely medical guidance, there is no internationally recognized training framework. This gap may lead to inconsistencies and variable quality of medical advice.

A meeting of public TMAS providers in Europe, sponsored by the ITF Seafarers' Trust, highlighted the absence of standardized training guidelines for doctors offering TMAS services. Variations in training approaches were observed across different services. This concern was previously acknowledged at the International Maritime Health Association (IMHA) workshops on "Maritime telemedicine — state of the art" in 2013 and on the "Management of Medical Emergencies at Sea" in 2015, where

participants recognized the potential benefits of establishing best practices for training TMAS doctors[4]. With funding support from the ITF Seafarers' Trust, a workshop hosted by IMHA and Radio Medical Denmark was convened with the objectives to:

1. Develop a standardized curriculum of learning objectives for TMAS doctors.
2. Propose appropriate modes of learning for achieving these objectives.
3. Explore the potential for IMHA to further develop and implement training programs.
4. Identify additional opportunities for collaboration among TMAS doctors, including case reviews and protocol discussions.

METHODS

The workshop was attended by 16 participants from eight countries, representing both public and private TMAS providers. Comments and input were also received from four additional TMAS providers who were invited but unable to attend the event. The two-day program included presentations, small group discussions, and plenary sessions.

Participants provided an overview of their services and current training framework, forming the foundation for further discussion. The new German course in Maritime Medicine offers an overview to all those interested and includes modules on maritime regulation, training, pre-employment medicals, medical chests, TMAS etc. This can be followed by a two-week familiarization period sailing on board a vessel and shadowing the crew members. It was acknowledged that current training for Germany's TMAS doctors is very much 'on the job' and this is reflected in other countries such as Poland. The UK offers some additional learning and Denmark provides a two-day introductory programme that includes simulation training with seafarers followed by 'buddy' training. Private providers tend to offer a more extensive training programme with one involving six weeks or more of training including lectures, simulation, case management and on-the-job training. The topics covered include the maritime environment, the training of seafarers, medical chests, and evacuation options and decision-making. Modes of learning also vary between the represented organisations and, as above, include presentations, discussions, case studies, simulation and time on board. Many providers also advocate visits to other centres such as the Joint/Maritime Rescue Coordination Centre.

In particular, input was received from a new TMAS doctor, a shipping company representative, and a seafarer. Their perspectives provided valuable insights into the expectations and challenges associated with TMAS. From a company perspective, the key themes include continuity and consistency of advice and a wide breadth of knowledge with the ability to access specialist services. In addition, the need for good communication with the company based on mutual respect and appreciation of different perspectives (whilst always maintaining confidentiality) was highlighted. The seafarer stressed the need for a quick response as medical duties are fitted in amongst other tasks on board and stressed the fact that seafarers are not medically trained and are often treating people that they have sailed with for many weeks, months or even years. Empathic and clear communication in a language that can be easily understood is key. He encouraged all doctors to visit or sail on a ship to gain a better understanding of living and working conditions. The new TMAS doctor, when asked "What do you wish you had known before starting your role," stated first and foremost that he wished he knew the seafarer! He also highlighted the limited resources available on board, the different pressures from the seafarer, Captain, other crew and company and the need for situational awareness. The risk analysis required to best manage a case on board a vessel is very different to the same illness or injury ashore.

Following these presentations the participants worked in small groups to discuss the content of an initial training curriculum for TMAS doctors, how training should be delivered and how this can be developed in the future. The groups also discussed the ongoing training and quality assurance of TMAS doctors. Each session of small group work was followed by a plenary discussion and agreement on the outcomes.

RESULTS

A key outcome was the development of a consensus on the curriculum, modes of learning, and ongoing quality assurance measures for TMAS doctors.

It was agreed that TMAS doctors require foundational knowledge in both maritime operations and medical practice tailored to the unique challenges of the maritime environment. Whilst most doctors starting work within a TMAS service have several years of medical experience, they come from different backgrounds with different skill sets. Very few will be familiar with the maritime industry and the specific challenges faced, and this must be a key part of induction. In addition, all TMAS doctors should have appropriate medical knowledge to be able to manage any illness or injury on board and to communicate this in an appropriate way to the seafarer. It was also noted that the range of services provided by different TMAS varies, for example, some only provide emergency medical advice whilst others offer ongoing care and monitoring of urgent and non-urgent cases, sometimes to the point of coordinating shoreside care and repatriation of the ill or injured seafarer.

Therefore additional, local training may be necessary. The group agreed that training should be on an international level to reflect the nature of the maritime industry but that in addition knowledge of their local services, capability and processes is essential. Hence the suggested curriculum is divided into three sections with subheadings (see Table 1).

DISCUSSION

MODES OF LEARNING

All participants agreed that the suggested curriculum required a variety of modes of learning that could include:

— E-learning modules
— Classroom-based learning
— Reading of literature
— Case discussion
— Scenario training
— Familiarisation time on board ships dictated by local availability and agreements with companies
— Visit to local JRCC for familiarisation
— Buddy training in local service

There was a consensus that an overview of the maritime industry could be effectively delivered by eLearning and other remote methods, but medical knowledge would be best taught in person with a mixture of case discussion and scenario training. This would also allow key points of the maritime industry learning to be incorporated and provide TMAS doctors with the opportunity to ask questions and facilitate additional discussion of the challenges of working within the industry.

Such in-person training should focus on communication skills as well as the required medical knowledge. This is particularly important as the role of the TMAS doctor is not to perform practical tasks but to guide others to be the "eyes, ears and hands of the doctor". Working with seafarers from many countries, for many of whom English is not a first language and who have different accents and dialects is a particular challenge in delivering remote medical advice.

Given the relatively low numbers of new TMAS doctors starting in each service each year, it was suggested that training be delivered on a regional or international basis, moving between different centres and with collaboration in providing teaching and practical resources. This would also allow the networking of doctors between different services with the sharing of learning and best practice.

Local training may then consist of familiarisation visits to both shoreside facilities such as JRCC and visits to/time spent on board a ship. Buddy training with an experienced TMAS doctor was also noted to be key in developing the skills and confidence of a new TMAS doctor.

ENTRY LEVEL AND QUALIFICATIONS

It was noted that TMAS is organised very differently in the countries represented and each has its own requirements for entry to work within the service. Equally, private providers have their own requirements for the role. It was agreed that all TMAS doctors should have gained some post-graduate medical experience in relevant clinical areas and ideally the service should be delivered by medical staff at consultant level or supervised by such. However, this does present challenges within the private sector. One suggestion was that all TMAS doctors should have a level of experience at least equal to that required to work within the cruise industry as outlined in guidance from the American College of Physicians Cruise Line section[5].

Further discussion was felt to be beyond the scope of the workshop, but the discussion should be expanded later.

DURATION OF TRAINING

It was recognised that current training practices vary from one hour to several days or weeks. Training should be split into modules and ideally recognised for Continuing Professional Development points by an established medical faculty or organisation. Once all training is completed a diploma could be presented. Further discussion was postponed until a detailed curriculum based on Appendix A was developed, and the modes of learning agreed upon.

ONGOING TRAINING

All recognised the need for ongoing training of doctors providing TMAS for seafarers to improve or maintain the quality of the service. Such training should be part of a wider clinical governance programme that includes but is not limited to:

— Case review
— Updates on changes in relevant maritime legislation, etc.
— Updates to local policy and procedures

— Further visits to local organisations e.g. JRCC, Coast Guard
— Audit of documentation
— Regular morbidity and mortality meetings
— Opportunity for and publication of research reports

Such training can be delivered locally and is best delivered on a regular and frequent basis, such as quarterly meetings, rather than waiting for a specific course after several years.

However, in addition to local ongoing training and quality assurance, it was recognised that meetings between different services would be useful for shared learning. This could be organised nationally between different providers, regionally or on a wider international basis at conferences such as the International Symposium of Maritime Health. An online repository for sharing knowledge, interesting and challenging cases, questions, etc. may be useful to allow ongoing collaboration and learning.

It was recognised that a key part of any ongoing training should be to promote team dynamics and human factors and that doctors must be encouraged to and supported in ongoing medical CPD to ensure they maintain their medical knowledge and skills relevant to their role in providing TMAS for seafarers.

CONCLUSION

Participants at the workshop represented eight countries and a variety of public and private providers who offer a varied range of services to seafarers around the globe. Requests for medical advice are increasing and are made for a wide range of medical conditions and injuries.

It was agreed unanimously that to provide best practice and consistent advice to our seafarers, supporting them and giving them the confidence to administer potentially lifesaving interventions to their colleagues on board, doctors offering remote medical advice should receive training in the specifics of the maritime industry and the challenges that it poses. In addition, they should have and maintain a wide range of medical knowledge and skills relevant to the most likely scenarios they will encounter. It was also recognised that good communication skills are key for a TMAS doctor to advise, guide and support the seafarer delivering medical care on board.

A curriculum for the training of TMAS doctors was agreed upon by the participants and is included in Appendix A. This can be used immediately by different services as a basis for training new or established doctors if no such training has been provided previously. It is suggested that any such training incorporating the attached curriculum be considered best practice for maritime TMAS.

There also remains the potential for further collaboration to develop an eLearning course as suggested for the maritime industry knowledge component and to develop an in-person course on a national, regional or international basis. Further work also offers the opportunity to collaborate with other organisations working in remote medicine and offering telemedicine support. Ideally, such a course will be accredited by an academic institution, medical faculty or an international organisation. To ensure a wider consensus across the industry and from more TMAS providers, additional consensus should be gained possibly using Delphi or other methods before any training platform is designed.

To achieve this will require additional input from a wider group of stakeholders, further funding and time. Further work is required, termed at the workshop as ‘Towards 2030: A framework for developing TMAS support to the maritime community’ and IMHA should play a key part in this work.

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REFERENCES

1 https://www.ilo.org/resource/other/maritime-labour-convention-2006-amended-including-2022-amendments. Accessed December 3rd 2024
2 https://textbook.maritimemedicine.com/ Accessed February 2nd 2025.
3 Tommasi L. Contribution from the international transport worker federation's Seafarers' trust 2023 TMAS collaborative report. Int Marit Health 2024; 75, 4: 271–284.
4 https://www.imha.net/workshops/. Accessed February 8th 2025.
5 chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://www.acep.org/siteassets/new-pdfs/preps/acep-cruise-ship-health-care-guideliness-final-october-2023.pdf Accessed December 11th 2024.

Table 1. Curriculum for Training of TMAS Doctors

Module 1: International Maritime Context	
Maritime Industry Overview (Environment, Terminology, Demographics)	Understand the global scale and demographics of the maritime industry. Become familiar with key terminology and operational contexts in maritime environments.
International Regulations and Legal Roles	Be aware of the relevant international conventions relevant to the maritime industry Recognize the importance of consent, GDPR compliance, and insurance. Be familiar with the Maritime Declaration of Health and reportable incidents. Understand the legal standing of TMAS doctors under international law.
International TMAS	Compare TMAS systems in different countries. Understand the scope of services provided by TMAS globally.
Search and Rescue (SAR) Overview	Understand the role of TMAS in SAR operations and the interaction between the two. Recognize international SAR structures and communication protocols.
Role of National Maritime Authorities	Understand how national regulators implement international conventions and guidelines through national laws. Identify the role of national maritime authorities in the management of medical and other emergency scenarios at sea.
International Shipping Routes	Recognize key shipping routes and associated medical challenges. Understand regional variations in health care and travel safety.
Pre-Employment Medical Examinations (PEME)	Understand the Guidelines and standards for pre-employment medical examinations for seafarers. Assess the relevance of pre-employment screenings in occupational health.
Ship Types, Jobs on Board and Organisational Structure	Identify various ship types and their specific onboard health risks. Understand crew roles and the onboard hierarchy. Be aware of the challenges of living and working on board
Communication with Seafarers	Develop skills to gather accurate medical information remotely. Effectively convey medical advice to non-medical personnel.
Cultural Awareness and Ethics	Recognize cultural sensitivities when delivering telemedicine. Understand ethical dilemmas unique to maritime medical care.
Onboard Medical Care	Understand the limitations of onboard medical care. Ensure familiarity with the medical chest, medical guide, and seafarer medical training.
Key Industry Organisations and Resources	Identify key international and regional organisations supporting maritime health and safety. Utilize available resources and networks to enhance TMAS effectiveness.
Module 2: Medical Knowledge	
Emergency Medicine	Build a strong foundation in emergency medical knowledge relevant to maritime scenarios. Manage emergency medical conditions as appropriate. Know when and how to recommend treatment should stop
General Medicine	Build a strong foundation in general medical knowledge relevant to maritime scenarios. Be able to manage general medical conditions as appropriate. Know when and how to access specialist medical advice

Occupational Health	Understand occupational health challenges specific to maritime environments. Recognize the importance of preventive health measures for seafarers.
Evacuation and Disembarkation of seafarers	Understand the factors that may influence the decision to evacuate or treat on board. Explore disembarkation options and be aware of the differences in care around the world.
Managing Non-Evacuation Cases	Provide effective medical care when evacuation is not possible. Optimize the use of available resources to manage seafarers on board for an extended period
Major incident and mass casualty management	Prepare for large-scale or complex medical crises at sea. Coordinate with international and national resources during disasters.
Management of death at sea	Understand the issues surrounding death at sea and how to manage them
Module 3: Systems and Processes local to TMAS doctor	
National Maritime Authorities and Laws	Understand how national maritime laws and systems may impact the management of medical scenarios at sea.
Local TMAS and SAR Operations	Understand the structure of local TMAS and SAR networks. Build effective collaboration strategies with local systems. Ensure familiarity with local evacuation processes and resources. Be able to manage logistical challenges during complex evacuations.
Local Communication Systems	Develop proficiency in using local communication systems for medical cases. Overcome communication barriers, including technical and linguistic challenges.
Accessing Local Expertise and Resources	Identify and connect with local medical experts and facilities.
Translation Services	Use translation services effectively in medical consultations. Minimize risks associated with language barriers.
Managing Cases with Prior Remote Advice or Treatment	Navigate ethical and professional concerns in taking over cases.

INTERNATIONAL MARITIME HEALTH FOUNDATION (IMHF) 7TH WORKSHOP ON SEAFARERS' TRAINING, CERTIFICATION AND WATCHKEEPING (STCW)

by Bill Kavanagh
edited by James Denham

On January 24, 2025, the International Maritime Health Foundation held in Alicante, Spain, its 7th Workshop on Seafarers' Training, Certification and Watchkeeping (STCW) to evaluate and update the medical training requirements outlined under the STCW Code. Experts from the maritime and medical fields gathered to conduct a thematic analysis of the current standards and determine if the course content need updating.

Among the participants who attended this workshop included Dr. Nebojsa Nikolic (IMHF), Dr. Spike Briggs (Medical Support Offshore Ltd.), Gina Kim Jihyeon (International Transport Federation), Capt. Ian Power (National Maritime College of Ireland, Munster Technological University), Dr Klaus Seidenstuecker (IMHF) and Capt. Bill Kavanagh (IMHF).

The workshop highlighted inconsistencies in medical training terminology and competency requirements, emphasizing the need for modernization. Key recommendations included incorporating practical skill assessments in Elementary First Aid, integrating telemedicine and mental health awareness into Medical First Aid, and significantly updating Medical Care training to enhance sepsis awareness, record-keeping, and emergency communication.

A revised set of competency tables was drafted and will undergo final review in the coming weeks. Workshop participants stressed the importance of aligning training with current medical standards to better equip seafarers for onboard medical emergencies. Further discussions are planned to address additional medical training gaps within the STCW Code.