Maritime Telemedicine Service System

Presented by
Han Wool Jeong
Joon Sung Lee
Yoon Geun Choi
2015
01. Amendment Strategy
02. Working Environment of Seafarers on board
03. Current State of Maritime medical care
04. K-Telemedicine Service
05. Challenges
06. Amendment of STCW Convention
1. Amendment Strategy of IMO Conventions

1. Drafting an information paper & submission to IMO

2. Setting up IMO/ILO Ad hoc joint working group

3. Drawing up a resolution for Assembly

4. Inserting recommendations to CODE B of relevant agreements, for example STCW, MLC and etc

5. Transfer recommendations to CODE A (mandatory provisions)
1. Amendment Strategy of IMO Conventions

01. MSC/INF 01

02. IMO/ILO Joint Working Group

03. A Res 1053(27)
1. Amendment Strategy of IMO Conventions

1. Drafting an information paper & submission to IMO
2. Setting up IMO/ILO Ad hoc joint working group
3. Drawing up a resolution for Assembly
4. Inserting recommendations to CODE B of relevant agreements, for example STCW, MLC and etc
5. Transfer recommendations to CODE A (mandatory provisions)
01. Workplace Characteristics

Since most ships are made of steel, it is very likely for one to suffer even with a small bump against the ship structure. And the frequency of accidents that require emergency measures is high due to workplace characteristics on board.

02. Mentality

Seafarers are under tremendous amount of stress due to certain job characteristics: the separation between rest and work is vague, and responsibility and requirements to carry out their job are considerably high.

03. Social Culture

Cultural conflicts are increasing due to an increase in multicultural vessels where multinational seafarers work at. Also, one is facing stress caused by having to confront the same people for almost 24 hours in a restricted space.

04. Vibration

Health condition of seafarers is gradually deteriorating due to continuous vibration and noise caused from engines ceaselessly.
3. Present Condition of Medical Care for Seafarers

- Existing international conventions regarding medical assistance to seafarers are only focusing on *follow-up care of diseases and remote medical advices*.
- Taking a step further, we promote the *introduction of maritime telemmedicine services* to reduce the outbreak of disease of seafarers and improving their health condition.

<table>
<thead>
<tr>
<th>Categories</th>
<th>Purpose</th>
<th>Methods</th>
<th>Contents</th>
</tr>
</thead>
<tbody>
<tr>
<td>IMO, STCW, E-Navigation, ILO MLC</td>
<td><strong>Emergency medical advices</strong></td>
<td>Medical examination of seafarers before embarkation</td>
<td>Health protection</td>
</tr>
<tr>
<td><strong>Existing medical assistance system</strong></td>
<td><strong>Treatment of disease</strong></td>
<td>Ship medical environment management</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Emergency telemedicine advices</strong></td>
<td></td>
</tr>
</tbody>
</table>
4. Perception and Current State of Health Care for Seafarers

- Unsatisfactory medical system impedes the long-term embarkation of seafarers and causes shortage in overall global seafarer supply.

- 85% Job dissatisfaction
- 60% Health worsening
- 48% Preference for healthy life
- 69% Experience of being ill
- 75.3/100 points Risk of accidents and disease
- 68.8/100 points Difficulty in medical care
- 2.9 times 2.9 accidents occurred per person

6. Current State of Maritime Telemedicine Service

02. Satisfaction with Emergency Medical Treatment

[Satisfaction with emergency medical treatment]
- 31.75% - 20 seafarers
- 47.61% - 30 seafarers
- 20.63% - 13 seafarers

[Satisfaction with present policy regarding medical treatment only in case of emergency]
- 14.13% - 39 seafarers
- 61.59% - 170 seafarers
- 24.28% - 67 seafarers

[Need for improvement of medical equipment on board]
- 33.63% - 112 seafarers
- 62.16% - 207 seafarers
- 4.2% - 14 seafarers
Korea has been conducting this research in a long-term. It is now implementing a maritime telemedicine service demonstration project in order to solve the inequity of medical care service for seafarers.

**STEP 01. Development of Maritime Telemedicine Service System**
- Gather information
- Basic & Detailed design

**STEP 02. Implementation of the Project on a Trial Basis**
- Telecommunication equipment on board
- Satellite telecommunication
- Shore-based telecommunication server

**STEP 03. Actual Demonstration of the System**
- Gather information
- Basic & Detailed design

**STEP 04. Introduction to International Conference**
- Drafting an information paper and submitting to IMO
- Hosting a special three-party committee with the cooperation of ILO
7. K-Telemedicine Service

/ 01.

Maritime telemedicine service demonstration was held, where Per Okkels, the Vice-Minister of Health and Welfare of Denmark observed.

/ 02.

Business cooperation with Phillips Korea was agreed regarding maritime telemedicine service field.
8. K-Telemedicine Service System Platform

Ship-based management system

- Medical assistance server
- Network on board
  - Wearable devices
  - Emergency biosensor
  - Psychology consultation

Shore-based support system

- Shore-based support system
- Shore-based integrated server system
  - Routine medical care
  - Emergency medical service
9. Challenges

- The Rep. of Korea has found the following challenges while implementing maritime telemedicine service demonstration projects.

1. Communication Cost
2. Cyber Security
3. Responsibility of Health Care Provider on Shore
4. Lack of Capability of medical care providers on board
10. Amendment of STCW Convention

Current Article of Convention

Regulation VI/4
Mandatory minimum requirements relating to medical first aid and medical care

1. Medical first aid provider
2. Medical care provider
3. Certificate

Proposal of Amendment

Regulation VI/4
Mandatory minimum requirements relating to medical first aid and medical care

1. Medical first aid provider
2. Medical care provider
3. Telemedicine service provider
4. Certificate

"We suggest a new QUALIFICATION with the name, 〈telemedicine service provider〉 & Include the details on STCW Regulation VI/4 – Section 3."
10. Amendment of STCW Convention

- The entire article of Regulation VI/4 of STCW Annex Chapter VI after the amendment are as follows.

**Regulation VI/4**

**Mandatory minimum requirements relating to medical first aid and medical care**

1. Seafarers designated to provide medical first aid on board ship shall meet the standard of competence in medical first aid specified in section A–VI/4, paragraphs 1 to 3 of the STCW Code.

2. Seafarers designated to take charge of medical care on board ship shall meet the standard of 2 competence in medical care on board ships specified in section A–VI/4, paragraphs 4 to 6 of the STCW Code.

3. **Seafarers designated to take charge of maritime telemedicine service system on board shall meet standard of competence in medical care on board in section A–VI/4, paragraphs 7 to 10 of the STCW Code.**

4. Where training in medical first aid or medical care is not included in the qualifications for the certificate to be issued, a special certificate or documentary evidence, as appropriate, shall be issued indicating that the holder has attended a course of training in medical first aid or in medical care.
11. Amendment of STCW CODE – Section B

- The amendment content of Regulation VI/4 of STCW CODE – Section B are as follows.

Section B-VI/4
Mandatory minimum requirements related to medical first aid and medical care

7. Every seafarer who is designated to provide telemedicine service on board ship shall have at least an year of experience as medical care provider on board.

8. Every seafarer who is designated to provide telemedicine service on board ship shall be required to demonstrate the competence to undertake the tasks, duties and responsibilities listed in column 1 of table B-VI/4-3.

9. The level of knowledge of the subjects listed in column 2 of table B-VI/4-3 shall be sufficient to enable the designated seafarer to take appropriate operation of maritime telemedicine service system at all times *

* IMO Model Course 1.16 – “Maritime Telemedicine” may be of assistance in the preparation of courses.

10. Every candidate for certification under the provisions of regulation VI/3, paragraph 2 shall be required to provide evidence that the required standard of competence has been achieved in accordance with the methods for demonstrating competence and the criteria for evaluating competence tabulated in columns 3 and 4 of table B-VI/4-3.

“ This amendment will be transferred to STCW CODE Section A (mandatory provisions) after numerous conferences by the international society. ”
### Table B-VI/4-3

**Specification of the minimum standard of proficiency in maritime telemedicine**

<table>
<thead>
<tr>
<th>Column 1</th>
<th>Column 2</th>
<th>Column 3</th>
<th>Column 4</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>COMPETENCE</strong></td>
<td><strong>KNOWLEDGE, UNDERSTANDING AND PROFICIENCY</strong></td>
<td><strong>METHODS FOR DEMONSTRATING COMPETENCE</strong></td>
<td><strong>CRITERIA FOR EVALUATING COMPETENCE</strong></td>
</tr>
</tbody>
</table>
| Effective use of maritime telemedicine service system | Operation of maritime telemedicine service system  
1. Use of maritime telemedicine service equipments and trouble-shooting  
2. Instruction and care for chronic patients on board  
3. Management of PHR of seafarers  
MEDICAL ENGLISH  
Guidance to reduce the outbreak of disease of seafarers  
Guidance to improve the health condition of seafarers | Assessment of evidence obtained from practical instruction and demonstration  
Where practicable, approved practical examination at a hospital | Should effectively execute the requirements and instructions of shore-based medical professionals  
Should follow the manual provided by the manufacturer of maritime telemedicine service equipment  
MEDICAL ENGLISH should be in accordance with 〈MARITIME TELEMEDICINE ENGLISH〉 published by IMO and WHO. |
"MISSION of IMO

To promote safe, secure, environmentally sound, efficient and sustainable shipping through cooperation."
Everyone has the right to life, liberty and security of person.

- Article 6, Universal Declaration of Human Rights-