



Risk assessment and medical selection


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Objectives


- What is risk?
- Risk management
- The risk of a medical incident at sea
- How can we reduce the risk? The role of medical selection
- Routine and emergency duties
- Evidence base to the medical examination
- Medical care on board
- Evacuation – why to avoid
- Medical risk management in the maritime industry



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What is risk?


- A situation involving exposure to danger
- The possibility of losing something of value
- A probability or threat of damage, injury, liability, loss or any other negative occurrence that is caused by external or internal vulnerabilities, and that may be avoided through preemptive action



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Risk matrix /heat chart

| | | LIKELIHOOD | | | |
|--------|-----------------|------------|--------------|------------|-----------------|
| | | 10 Low | 20 Medium | 30 High | 40 Very High |
| IMPACT | 10 Low | 4 | 1 | 1 | 3 |
| | 20 Medium | 4 | 5 | 7 | 7 |
| | 30 High | 7 | 7 | 10 | 6 |
| | 40 Very High | 7 | 12 | 14 | 9 |




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What is risk management?

‘the identification, evaluation, and prioritization of risks followed by coordinated and economical application of resources to minimize, monitor, and control the probability’

*Hubbard, Douglas (2009). The Failure of Risk Management: Why It's Broken and How to Fix It. John Wiley & Sons. p. 46or
Impact of unfortunate events*




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Risk management



- Identification of risk
- Likelihood of risk occurring
- Can risk be eliminated
- Methods to reduce the likelihood of occurrence
- If risk should occur, methods to decrease severity of consequence

This is the process that underlies the Medical Examination



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Risk of appendicitis in Antarctic Survey


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Risk management in the maritime industry

- What we are discussing is only a part of the larger risk management strategy employed by all shipping companies
- Other areas include but are not limited to:
 - Cargo handling
 - Weather routing
 - Maintenance procedures on board
 - Piracy
 - Entering and leaving port
 - Ballasting



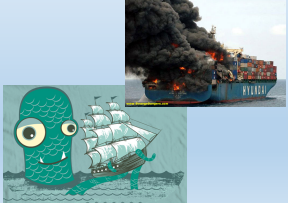

Every operation or activity on board is risk assessed at some point



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The risk of a medical incident at sea


- Being a seafarer is a risky business
- Seafarer must be fit enough, physically and mentally, to work and live on board
- Medical risks largely related to
 - Pre existing disease
 - Occupational risks
 - Lifestyle
 - Accidents – occupational or not

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What is the size of the problem?


- Hard data is not available in many areas
- Some figures from within the cruise industry
- No figures as yet available from within the wider maritime industry giving incidence of consultations with the officer responsible for medical care
- Figures from P&I clubs, maritime authorities, shipping companies, TMAS may be available but are rarely published. Also look from different perspectives
- EMSA data on accidents gives yet another perspective



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Interventions to reduce risk

- Crew selection: **competence, medical fitness**
- Training and familiarisation on board
- Management of working conditions: fatigue, physical and mental demands
- Decent living conditions: food, leisure, exercise, leave
- Illness and injury prevention/mitigation arrangements.




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Risk assessment: IMO/ILO Guidelines...

It is essential to ensure that medical certificates


- **genuinely reflect seafarers' state of health,**
- **in light of the duties** they are to perform

Guidelines, Part 1, Section 1, Paragraph 4 (iii)



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Process of risk assessment in medical selection




- 1 •What possible medical incidents can occur given the known medical condition or risk factor?
- 2 •What is the likelihood of each of these occurring over the next 2 years?
- 3 •What are the potential consequences of these incidents given the job of the worker?
- 4 •What is the risk calculation?
- 5 •Are there any possible mitigating measures that can be taken?
- 6 •What is the final risk evaluation?
- 7 •Conclusion and justification

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Presence of a medical condition




- Presence of a medical condition itself is often not an immediate contraindication to going to sea
- Need to consider severity of the condition and how it may affect the seafarer over the next 2 years.
- Consider what medical incidents may occur, what is the likely course of the disease, rate of deterioration, necessary medical follow up and investigations
- Consider within the context of the position on board, available medical care etc



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Severity of the condition



| | |
|---|--|
| <p>CHIEF OFFICER 1</p> <ul style="list-style-type: none"> • Diabetes mellitus – insulin user • Unstable metabolic control • Emergency hospitalisation 4 times last year • Probably high likelihood of hypoglycaemia (> 10 % per year) | <p>CHIEF OFFICER 2</p> <ul style="list-style-type: none"> • Diabetes mellitus – insulin user • Stable metabolic control • Last hypoglycaemic incident, controlled at home, 10 years ago • Probably very low likelihood of hypoglycaemia (< 2 % per year) |
|---|--|

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Routine and emergency duties



Seafarers must be.....

- Healthy enough to perform own job and emergency duties
- Not in need of regular medical review or care, if it cannot be provided.
- Of the right size and fitness to perform their own job and emergency duties eg access confined spaces
- Of the right mental health to deal with the very different working and living environment on board a ship

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In the context of tasks and sailing area.....



| | |
|---|--|
| <p>CABIN STEWARD</p> <ul style="list-style-type: none"> • Ship: Super-tanker • Sailing area: Global • Syncope on duty | <p>2ND MATE</p> <ul style="list-style-type: none"> • Ship: Fast passenger boat – 100 PAX • Sailing area: West coast of Norway • Syncope on bridge watch |
|---|--|

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Consequences



| | |
|--|---|
| <p>CABIN STEWARD</p> <ul style="list-style-type: none"> • Ship continues to sail • Low risk of individual injuries or lives lost • Maybe TMAS support • Steward taken off watch and off work for a day • Medical follow-up in next port • Incident below the loss prevention radar of the insurer | <p>2ND MATE</p> <ul style="list-style-type: none"> • Shipwreck, collision in few seconds/minutes • Lives lost + individual injuries • SAR Rescue operation • Huge costs for insurer |
|--|---|

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The alarming lack of evidence



- Likelihood
 - For relevant incidents related to medical condition
 - Time perspective of 2 years
 - Agreement on definitions of levels of likelihood – low, medium and high
- Consequences
 - Not much published
 - No agreement on levels of consequences

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Accuracy in the medical examination can and should be improved





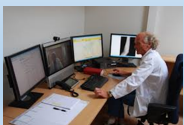
- Standards and criteria should be evidence-based
- Decision-making should be based on individual risk assessment
- The AD should be able to substantiate the decision, and explain the rationale based on empirical evidence
- Harmonisation of assessment through training of approved doctors
- Continuous learning programmes
- Quality Assurance and audit of the process of decision-making (sound judgement) and product (decision)
- Studies are needed!

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Medical care on board






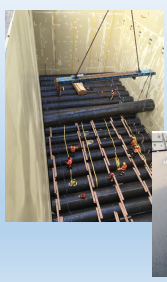

- Limited by staffing, training, equipment
- Medical centre often not well equipped or in the optimum position for access or communication
- Access to medical care on board, ashore or TMAS support

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Moving around the ship



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How can it be done?

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Evacuation from the ship

- Is often the end point of a medical emergency
- May be avoidable with appropriate risk management but may not be
- Consider availability, weather conditions, clinical condition of patient etc
- Is an inherent risk associated

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The impact of location

- How close are you to medical assistance?
- Is evacuation possible if required?
 - Availability of boat or helicopter
 - Staffing and equipment
 - Quality of service
- What is the local shoreside capability?
 - Medical & nursing care
 - Language
 - Communication

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Medical risk management in the maritime industry

- **Medical selection of seafarers**
- Health and safety at sea
- Health promotion
- Medical incident management
- TMAS support
- Evacuation if required
- Shore based care
- Repatriation and rehabilitation

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Questions

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