The ship medicine chest
Problems and solutions in international shipping.

Dr. med. C. Schlaich MPH, MD
Certified Specialist in Internal Medicine, Infectious Diseases and Addiction Medicine
Head of Hamburg Port Health Center,
Institute for Occupational and Maritime Health
WHO Collaborating Center for the Health of Seafarers
Seewartenstraße 10. D- 20459 Hamburg
hphc@bsg.hamburg.de
http://www.hamburg.de/hphc

Remark: This paper partly uses information and wording from
- The workshop of the International Maritime Health Association on the Medical Chest in Athens
  (Rapporteur Dr. Tim Carter, UK), 2009.
- Schlaich C. From the view of the Port Health Authority: Inspection and evaluation of the
  Medical Chest. Visnyk Morskoï Medycyny 2008;41-42(3-4):8-14 (1)

1. Introduction

Where no doctor is on board -as it is the case in most merchant ships- a non-medical person holds the responsibility for medical care. He or she has to rely on his medical training, written information, and – if appropriate- telemedical advise. This information will help the seafarer to make best use of the medical chest and equipment on board. Appropriateness of the information available, adequacy, uniformity and quality of the medical chest and equipment is a key to the safeguard of the seafarer’s health at his work-place.

Ships from a certain size and number of persons on board will have to carry a qualified Medical Doctor on board (> 100 persons and with a more than 3 days voyage under WHO and ILO conventions (2, 3); > 75 persons under German regulation (4)). Companies may set their internal rules for the equipment and staffing.

The medical chest carried on board a ship contains medical equipment and medication for use while at sea. The chest forms an essential part of the arrangements for managing any medical emergencies from ill-health or injury that may arise when the ship is distant from shore-based healthcare facilities. The other elements of these arrangements are:

- the training provided for officers in medical first aid (if no doctor is aboard)
- a guide to medical diagnosis and treatment
• the ship’s hospital with space and facilities for medical equipment, medical care and isolation
• access to shore based radiomedical or telemedical advice
• arrangements for medical evacuation to shore where feasible
• access to health care facilities on arrival in port.

2. Regulations and Recommendations concerning the medical chest and equipment.

The Maritime Labour Convention 2006 (3) stipulates in article 4 that “each Member shall ensure that measures providing for health protection and medical care, including essential dental care, for seafarers working on board a ship that flies its flag are adopted which ensure that seafarers are given health protection and medical care as comparable as possible to that which is generally available to workers ashore, including prompt access to the necessary medicines, medical equipment and facilities for diagnosis and treatment and to medical information and expertise. …”

While there is an international requirement to carry a medical chest there are no formal international instruments that specify its content.

All requirements concerning the medical chest and equipment are in international instruments that maritime states are required to comply with through their own legislation and inspection regimes.

Several Flag States have developed national requirements on the ship’s medical chest and equipment. In Europe those regulations follow Council Directive 92/29/EEC (5) which sets out a minimum European standard for ships’ medical stores. The specification of national maritime authorities usually relate to crew size and voyage pattern. Some authorities give detailed lists of what must be carried while others provide indicative lists covering the classes of medication needed and their quantities.

Selected examples for flag state regulations are:

United Kingdom: Maritime and Coastguard Agency. MSN 1768. Ships’ Medical Stores, 2003 (6)

Norwegian Regulation of 9 March 2001 No 439 concerning medical supplies on ships. Oslo (7)

Netherlands: Netherlands Shipping Inspectorate. Medische uitrusting aan boord van zeeschepen en vissersvaartuigen/Medical supplies on board Dutch sea-going vessels and fishing vessels, 2006 (8)

Germany: Verordnung über die Krankenfürsorge auf Kauffahrteischiffen 2007 (4)

Where no national requirements have been developed the International Medical Guide for Ships (IMGS 3rd ed) (2) published by the World Health Organization
(WHO) is the only standard source of medical guidance which satisfies the requirements of the Maritime Labour Convention 2006 (3). The flag states that do not have national requirements for the contents of the medical chest have in the past relied on a list that has been provided by WHO in the International Medical Guide for Ships (2nd Edition, 1988) (9). This list provided information on the quantities to be carried on board. It is not a formal international instrument but the Guide is noted as a source of information in the non-statutory part of the relevant ILO Convention. Port State Control Inspectors use the IMGS list as the minimum requirement for medical supplies.

Whenever dangerous goods are transported the IMO/WHO/ILO Medical First Aid Guide for Use in Accidents Involving Dangerous (MfAG) requires additional medication; specific antidotes and personal protective devices on board (IMDG Code) (10).

Ro-Ro and passenger ships may carry a ship’s doctor or a doctor’s bag for use by a competent passenger (11). Ship’s lifeboats carry a pack of emergency medication (12). Medication may also be brought on board by seafarers to treat continuing medical problems.

3. Responsibilities for maintenance and inspection.


The Convention stipulates in article 4 that “the medicine chest and its contents, as well as the medical equipment and medical guide carried on board, should be properly maintained and inspected at regular intervals, not exceeding 12 months, by responsible persons designated by the competent authority, who should ensure that the labelling, expiry dates and conditions of storage of all medicines and directions for their use are checked and all equipment functioning as required. In adopting or reviewing the ship’s medical guide used nationally, and in determining the contents of the medicine chest and medical equipment, the competent authority should take into account international recommendations in this field, including the latest edition of the International Medical Guide for Ships, and other guides mentioned in paragraph 2 of this Guideline”.

The purpose of the convention’s article is the protection of the seafarers welfare.

Under this convention the competent authority is responsible to safeguard the regulation on ships which fly it’s flag only (no responsibility for foreign flags).

3.2. WHO International Medical Guide for ships (IMGS) 3rd edition (2)

WHO names the ship master as the responsible person for managing medical supplies kept on board. While the 2nd edition recommended an annually inspection by
a pharmacist the current guide points to the general necessity of a periodical inspection only.

The purpose of the guide is the protection of the seafarers health.

The Guide is recommended as a global minimum standard to be considered by all competent authorities doing inspection under IHR 2005, Maritime Labour Convention 2006 or national regulations.


In Article 7 of the Council Directive 92/29/EEC it is required that:

“Each Member State shall take the measures necessary to ensure that a competent person or a competent authority carries out an annual inspection to check that on board all vessels flying its flag:

- the medical supplies meet the minimum requirements of this Directive;

- the checklist provided for in Article 2 (1) (c) confirms that the medical supplies comply with those minimum requirements;

- the medical supplies are correctly stored;

- any expiry dates have been respected.”

The purpose of the Directive is to protect the health of seafarers.

Under this convention the competent authority is responsible to safeguard the regulation on ships which fly its flag only (no responsibility for foreign flags).

3.4. National regulations (examples)

Several Flag States have developed their national requirements on the ships medical chest and equipment. Most regulations specifically name the necessary inspection intervals and documentation.

- The German Regulation (Verordnung über die Krankenfürsorge 2007) (4) requires annual inspections and certification of the medical chest, ship hospital and of the controlled drugs register by a German Port Health Authority. The regulation specifies the qualification of the responsible person designated by the competent authority (pharmacist, medical doctor, port inspector). The port health authority may grant exceptions from the list of medicines on the request of the shipmaster/owner. A certificate of the ship supplying pharmacy is not sufficient under the regulation.

- The Norwegian Regulation of 9 March 2001 No 439 concerning medical supplies on ships (7) requires an “inspection by a competent person at least every twelve months”. It is specified that a competent person is a doctor or pharmacist. It is required to document the inspection carrying the (a) quantities decided pursuant to
the regulation, (b) the number of articles counted at inspections and (c) any information on limited life etc.

- The UK the “Merchant Shipping and Fishing Vessel (medical Stores) regulations 1995” names the ship master is named as responsible to ensure annual inspection. The Maritime and Coastguard Agencies notice on the Medical Store from August 2003 recommends owners and operators to involve a qualified medical practitioner or pharmacist if changes to the suggested list are made (6).

- The Danish “Technical regulation on occupational health on ships” (8) requires that “medicaments and medical equipment shall be inspected at blest once a year on the masters initiative”

3.5. International Health Regulations 2005 (13)

According to the International Health Regulations 2005 the competent authority is required to inspect the ship’s hospital and medical log book as part of the biannual comprehensive sanitary inspection. The inspection is required for the issuance of the Ship Sanitation (Exemption) Control Certificate.

The purpose of the regulation is to prevent the international spread of disease.

The sanitary inspections are performed by the port health authorities on every ship in international waters regardless of the flag.

3.6. Memorandum of Understanding on Port State Control (14)

In this agreement the participating member states agree on the Port State Control of foreign ships. While the focus is on maritime safety the inspection may include as part of an “expanded inspection of certain ships” areas under ILO conventions.

The purpose of the inspection is to increase maritime safety Inspections.

The inspections are done by the Port State Control on foreign ships.

3.7. Summary

Most international and national regulations require periodical (typically 12 months) inspections and documentation of inspection results of the medical chest and equipment. Responsible body for the inspections in most regulations are the competent authority or a person designated by the competent authority. The inspections are restricted to ship’s which fly under the competent authorities flag. The purpose of these inspections is to safeguard the seafarers welfare. Only some regulations specify the responsible body to decide on quantities or exemptions pursuant to this regulation.

WHO’s International Medical Guide for Ships in it’s current version has omitted it former advice on an annual inspection by a pharmacist and refers to the shipmaster for “periodical inspections”.
In addition to national and international regulations which aim to the seafarers health and welfare, competent port authorities (Port Health Authorities and Port State Control) perform inspections of the medical chest and inspections under international conventions which aim to the prevention of the spread of disease or to the increase of the maritime safety.

4. The Practical Experiences of the Hamburg Port Health Center

The Hamburg Port Health Center is the competent authority under the International Health Regulations 2005 and the national regulation on the ships medical store (“Verordnung über die Krankenfürsorge 2007” (4).

4.1. The practical experiences of ships under German flag are inspected according to the national regulation and an annual certificate is issued. The inspections are performed by medical doctors experienced in maritime medicine and includes on the spot training and counselling of the responsible officer. The certificate is issued in addition to a document delivered by the ship supplying pharmacy. In the German experience this system ascertains that a “third” body – independent of any commercial interest (of the shipowner or ship supplying pharmacy) inspects and documents the fulfilments of the regulation and grants exemptions. Deficiencies will be discussed not only with the shipmaster but with the supplying pharmacy which will in most cases rectify the deficiency timely while the ship is still in port. Evidence gained from the ship inspections will be communicated to a working group of the port health authorities of the coastal states (Arbeitskreis der Küstenländer für Schiffshygiene) and the Seamen's Accident Prevention and Insurance Association (See Berufsgenossenschaft) which may publish common guidelines and notices to the regulation if necessary.

4.2. The experience of the Hamburg Port Health Center with the inspection of Ships under foreign flags (as part of the sanitary inspection under IHR 2005) shows that most ships which carry a medical chest and equipment according to the IMGS of WHO carry at least a running list of medicines and / or a certificate of the ship supplying pharmacy.

This is also true for most ships carrying a medical chest according to a specific national regulation. To our knowledge only very few nations require an inspection and certification of an independent governmental body. Most flag and port state authorities are satisfied by the book - keeping of the medical officer and/or the certificate of the ship’s supplying pharmacy.

In our experience the quality of the medical chest and equipment may vary from minor deficiencies to a virtually non-functioning ship hospital. In this situation the port
health officer who inspects the ship for the assessment of the sanitary condition under the International Health Regulations 2005 needs a profound knowledge of the legal background and excellent communication skills to improve the situation on board:

If there is any evidence for a threat to the public health (unsanitary condition) the shipmaster will be asked to rectify the deficiency under IHR 2005 in order to receive a Sanitary Inspection Control (Exemption) Certificate. Examples for a deficiency under IHR 2005 are an insufficient supply or storage of vaccines or antibiotics, evidence for disease on board and general unsanitary condition of the hospital.

If there is evidence that the medical chest and equipment is as such that the maritime safety is decreased, Port State Control will be involved by our service. Ships with practically non-existent or disastrous ship hospitals will inevitably show other severe deficiencies which relate to maritime safety. Examples for deficiencies which will result in a communication to Port State Control are non-existent or functioning medical equipment, missing or outdated essential drugs and others.

Inspection Data Base of Paris MoU

MV Amorito

Inspection date 30.3.2007 in Hamburg

15 deficiencies detected
Areas inspected:
Accommodation and galley
Engine and steering room
Outside decks and forecastle
In most instances the Hamburg Port Health Center detects minor to moderate deficiencies like expired medication, non-functioning equipment, storage errors, insufficient malaria-prophylaxis, outdated textbooks, language problems (e.g. Chinese medication of a ship with mostly Indian crew). In this cases the shipmaster will get a detailed recommendation for an improvement of the medical care on board which is in most cases well received and implemented. However, if the shipmaster or agent will not comply and there is no immediate risk to the public health or ship safety the Hamburg Port Health Center has no further legal means of enforcing the implementation of the recommendations.

And sometimes we will discover new and creative ways of keeping the medical chest in good order

..... beer cans cut in half, neatly labeled with running numbers and used to store medication on a ship under chinese flag ....

4. Guidance to the International Medical Guides for Ships 3rd edition: Interim advice on the best use of the medical chest for ocean-going merchant vessels without a doctor onboard

Joint Statement of WHO Collaborating Centres for the Health of Seafarers and the International Maritime Health Association - 2009 Version (15)


The WHO International Medical Guide for Ships (IMGS) was first published in 1967. The IMGS has widely been used in the maritime world. The second edition, written in 1988 was recently replaced by the third edition in 2007. Immediately after the publication of the current IMGS a discussion on the best use of the tool and on further needs developed among experts from the WHO Collaborating Centres (16) for the Health of Seafarers and the International Maritime Health Association (17).

During a workshop of the INTERNATIONAL MARITIME HEALTH ASSOCIATION (IMHA) in Athens, Greece, November 14th-15th 2008 the concerns were summarized as follows: “Flag states that do not
have national requirements for the contents of the medical chest have in the past relied on a list that has been provided by WHO in the International Medical Guide for Ships (2nd Edition, 1988). This list provided information on the quantities to be carried on board. It is not a formal international instrument but the Guide is noted as a source of information in the non-statutory part of the relevant ILO Convention. Port State Control Inspectors use the IMGS list as the minimum requirement for medical supplies. The medication list is now very out of date and when WHO recently published a new edition of the Guide it included updated lists of recommended medications that were derived from the WHO Essential Medications List and of medical equipment taken from The Inter-agency Emergency Health Kit 2006. While this was a rational approach for the WHO to adopt to ensure that well validated treatments were available it did not take into account the need for remedies for minor ailments at sea – the sort that can impair ability to work without being dangerous, nor did it cover all the medical equipment that was needed in maritime situations. More significantly WHO did not consider that they could specify quantities of medications to be carried as there was a lack of information on use and effectiveness of medications at sea. In the absence of such data WHO considered that quantities should be related to voyage pattern and to political / managerial decisions rather than being stated by WHO. This lack of specification is not causing immediate problems where the flag state of the ship has its own national regulations or guidelines but it has led to great difficulties for maritime pharmacists called on to check and restock medical chests on ships from countries, including many of those with major open ship registries, that have no national lists. Pharmacists cannot continue to work to the outdated list and quantities in the old International Medical Guide, while they have no benchmarks for quantities required from the new one, nor the authority to make consistent decisions on the quantities to supply*.

The aim of the Interim Advice (see appendix) as given below is:
- to provide an aid for decision making for quantities required for seagoing and coastal vessels
- to add items named in the textbook of the IMGS 3rd edition but missing in the list of medicines or equipment
- to add page numbers from the medical textbook to the list of medicines for easier use.

By now the flag states Liberia and Marshall islands have legally adopted this expert opinion.

5. Access to strong pain killers – the dilemma of making controlled drugs available to seafarers

While recommendations and regulations named above require ships under all flags to carry strong pain killers for the treatment of severe pain in accidents and diseases several obstacles exist for the seafarers to have sufficient access to appropriate pain medication.

The inspectors and Medical Doctors of the Hamburg Port Health Center do check the controlled substances and documentation on a regular basis and are confronted with replies as in the following case study. In this case a ship under Panama flag which carried dangerous goods provided only Paracetamol and Aspirin as pain killers. The communication with the company is given below:

Dear Capt.,

From medical point of view we strongly recommend Morphine as strong pain killer. In case of severe accidents like burn wound or bone fracture only such strong pain killers are helpful to relieve the pain.

Concerning the juristical background we comment as follows: Since your ship sails under Panama flag, the Panama medical chest standard has to be applied. The minimum standard is defined by the WHO IMGS (Int. Medical Guide for Ships) which contains also Morphine. Besides when carrying dangerous goods (IMDG Code) Morphine is mandatory acc. to the MFAG (Medical First Aid Guide). Please find attached some more information.

With best regards, Tobias Riemer, MD, Port Doctor

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To : Hamburg Port Health Center (HPHC) 10/Nov/2008
In 2007 the Hamburg Port Health Center performed a survey on the conformity of merchant vessels in respect to the required strong pain killers. 307 ships in international trade were investigated. The findings were compared with the requirements. We found that only 28% of the ships had a sufficient quantity of morphine on board. 24% substituted morphine by tramadol and on board of 15% of ships no strong pain killer was available at all.

As a consequence the Hamburg Port Health Center launches an information campaign addressed to shipmasters.

5. Medical chest and equipment on passenger ships

While the International Medical Guide for Ships (IMGS 3rd ed) (2) published by the World Health Organization (WHO) intends to be the minimum standard for all sea going ships and does not discriminate between size and number of persons on
board it is obvious that the list of medicines and equipment is primarily intended to be used in cargo ships with no medical doctor on board.

To our knowledge there are no formal international instruments concerning the medical chest in passenger ships. Germany has published a guideline to the flag state regulation (available at http://www.hamburg.de/hphc) specifying the medical chest for passenger ships.

However, the cruise line industry uses internal protocols and has in the recent past been more active to define minimum standards for passengers’ ships.
Lit:

(1) Schlaich C. From the view of the Port Health Authority: Inspection and evaluation of the Medical Chest. Visnyk Morskoï Medycyny 2008;41-42(3-4):8-14 (1)
(6) United Kingdom: Maritime and Coastguard Agency. MSN 1768. Ships' Medical Stores, 2003
(8) Netherlands: Netherlands Shipping Inspectorate. Medische uitrusting aan boord van zeeschepen en vissersvaartuigen/Medical supplies on board Dutch sea-going vessels and fishing vessels, 16 July 2006
(11) MSC/Circ. 1042 Emergency medical kit/bag and medical consideration on ro-ro passenger ships not normally carrying a medical doctor, London 28 May 2002
(12) LSA Code 4.1.5, SOLAS A and B PACK
(14) Paris Memorandum of Understanding on Port State Control http://www.parismou.org/
(16) http://www.who.int/collaboratingcentres/ The WHO collaborating centres are institutions such as research institutes, parts of universities or academies, which are designated by the Director-General of the World Health Organization to carry out activities in support of the Organization’s programmes.
(17) http://www.imha.net/ IMHA is the sole international association concerned exclusively with Maritime Health. It is an association of professionals from a wide range of disciplines who are committed to improving the health of seafarers by developing better approaches to health protection, health promotion and health treatment.