



The Safety Manager in the Centres for Hyperbaric Oxygen Therapy in Europe

Or the EBAss proposal to HBO physicians regarding the functions of Safety Manager

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1. Introduction

During the past two decades, the clinical hyperbaric oxygen therapy (HBO) has evolved considerably on the technical level. Remember the hyperbaric chambers coming from the diving world with a capacity from 4 up to 6 people sitting on berths, most of the time in very harsh ergonomic comfort provisions? From the year 2000, we moved on to hyperbaric chambers foreseen for 8 to 12 persons in the average, sitting comfortably on individual chairs, all in the logic of ergonomic comfort for the patient but also for the personnel. The new hyperbaric chambers are only a vague memory of their predecessors. But all these improvements have a price: the increase of technicality and therefore of the complexity of the hyperbaric systems.

Present since 2003, the European Baromedical Association for Nurses, Operators and Technicians (www.EBAss.org) is a non-profit association counting among its purposes, the search for constantly improvement of the security conditions within and around the hyperbaric systems. In this spirit, EBAss has firstly sought to develop a policy of communications between the categories of personnel and parallel with this, has undertaken the redaction of a "Resources manual for the Education of nurses, operators and technicians in hyperbaric facilities in Europe". This important work has been accepted and has become the

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document of the ECHM.

Nevertheless, residual sources of risks remain present while new risks are being detected. EBAss thinks that it is important to be able to tackle and analyze them in order to propose and give individual or common solutions to each of these risks.

Indeed, in the European clinical world, quality assurance withholds a more and more important place and calls for a formal and structured organization of the HBO teams. This implies an active management of the HBO teams in which all the technical aspects, securities, trainings, procedures, etc. have to be treated.

Up till now, in a number of hyperbaric centers, this task is incumbent on the Medical Director that is faced with particularly tasks that are not necessarily part of its course. EBAss proposes to the Medical Directors to delegate a part of their responsibilities to a member of the HBO team designated by the medical Director and trained for this purpose: the HBO Safety Manager.

This new function changes nothing to the fact that the Medical Director is and remains in the vast majority of the hyperbaric centers in Europe, the Head of Department. EBAss opens simply the possibility to appoint a person of its team to the Medical Director that will be in particular responsible for all the security matters.

2. Current situation

While the implementation of the quality systems requires written procedures for all professional action, the consequences of technological projections within the hyperbaric systems shove the organizations and make the working conditions sometimes difficult. This can sometimes result in confusion on the responsibilities of each other within the HBO teams, major risks in hazardous decisions of the Medical Director, no follow-up of constant training programs, no or little written procedures, procedures that are ill-adapted to the European standards, no global vision approach in terms of security.

The code of good practice of the OHB in Europe designates, per session, a person of the intervening team (whether the doctor, the attendant nurse or the operator) as supervisor. This important task only concerns the ongoing session and has no overall view on the activities of a hyperbaric centre. Therefore, this function cannot comply with the definition of a Safety Manager.

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Certain hyperbaric centers can be tempted by the designation of an external person to the personnel of the hyperbaric centre (Bio medical engineer, responsible nurse ...). Other hyperbaric centers seem to think that the dilution of the responsibilities between different persons can offer an answer to the number of occurring problems.

In some hyperbaric centers, a HBO Safety manager, is designated from within the team by the Medical Director. This global approach to the problems related to the security, procedures, trainings, allows the Medical Director to focus on the essence of his medical and management activities, knowing that the Safety Manager wealth of a adapted training, is his councilor in security matters and in this manner, is in charge of the technical supervision of the activities of the hyperbaric center.

3. Motivation

Through the witnesses of its members throughout Europe, EBAss was able to establish a number of problems related to defects, essentially due to a breach in the internal organization of HBO teams. In too many cases a formally recognized organization is missing within the hyperbaric centre. The consequences can be "manageable", as long as the activities or the chambers remain of modest dimensions. This is no longer the case when the activities claim more personnel or when the hyperbaric chambers accept more than 10 people per session. From then on, tensions raise, the defaults become tangible and irreparably, the essential of these problems have a repercussion on our patients that become notably more anxious.

EBAss would like to offer its support and help to the Medical Directors of the hyperbaric centers. This help conveys in concrete proposals aiming first of all to optimize the internal organization but also in reducing the risk of accidents for all persons in hyperbaric environment. EBAss is convinced that only a coordinated approach between the members of the HBO team could be a vehicle of success.

In this context, EBAss defends the idea of an internal approach and not an external one. Indeed, if a person foreign to the service is designated (e.g. responsible nursing of the hospital, Bio Med engineer...), there is a real risk that ill-adapted procedures are put in place, that communication failures occur, and

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that there is a lack of implementation by the HBO team. The labor organization will from then on be in danger because all the related problems mentioned previously will occur again.

The approach that EBAss will claim, with the possible help of external resources or persons, the realization of environmental specific risk analyses, the development of a security policy notably through continuous trainings, the development of clear procedures following a recognized methodology, a patient management according to the recognized protocols, well-known by everyone within the team.

This strategy will allow the Medical Director of a hyperbaric centre to develop a quality system reliable and recognized in his service.

4. Functions of the Safety Manager

In numerous European countries, the hyperbaric centers are a service or department of a hospital. Consequently, the activities of the centre are under the responsibility of a doctor head of department: the Medical Director as defined by the ECHM. In order to assume plainly his functions as counselor in security, trainings and assurance matters, the Safety manager should have a relation of direct subordination with (i.e. appointed by) the Medical Director.

In the case of a different link of subordination (private hyperbaric centre...) and as far as the activities wouldn't be fully under the responsibility of the Medical Director, EBAss could accept that the Safety Manager would not have a direct subordinated relation with the Medical Director but instead with the general manager. In this case, EBAss defends a clear definition of everyone's responsibilities.

In any case, and to preserve a global approach for all the aspects related to security, EBAss recommends not to split the functions of several persons. Thus, EBAss recommends the designation of a unique Safety Manager, per hyperbaric centre. This designation shall be clear towards all the personnel.

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The Safety Manager will be at least responsible for the following matters for the Medical director, whom he will have to debrief:

- Counselor of the Medical Director in hyperbaric security matters (security of personnel, patients, material as well as the medical devices placed inside the hyperbaric chambers) following the local legislation and the European norms,
- Coordinator of the primary and continuous specific trainings of personnel of the HBO team in accordance with the recognized international standards,
- Local coordinator for the development and follow-up of a quality system according to the established standards,
- Coordinator for the redaction, the deployment and the follow up of all procedures related to the hyperbaric activities following the European standards,
- Supervisor of the application of all the procedures related to the hyperbaric activities,
- Supervisor of the collect of incidents/accidents and their follow-up,
- Local coordinator for the technical monitoring of hyperbaric installations (assembling?) including the maintenances and repairs according to the local legislation,

5. Tasks of the Safety Manager (non exhaustive list)

- Advisory role to the Medical Director for the introduction/ utilisation of medical devices in the hyperbaric chamber
- Serves as Hyperbaric Medicine representative to the Hospital Safety Committee
- Assesses and documents compliance with unit safety policies, national safety codes, quality standards and industry standards
- Validates chamber safety training of new employees (chamber operators, attendants and chamber induction for physicians) and patients on chamber safety practices before their initial entry into the chamber
- Monitors continuing education of chamber personnel

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- Verifies that equipment meets hospital (clinical?) biomedical requirements and signs off on new equipment and textiles before they are permitted inside the chamber
- Reviews safety incidents, provides necessary reporting of incidents according to national requirements and periodically provides in-service training on accident prevention
- Develops maintenance program and documents unit compliance
- Updates unit safety and quality policies and procedures as needed
- Approves and documents any modifications to the chamber or support equipment
- Conducts practice emergency procedures (e.g., fire drills)
- Oversees staff and patient decompression schedules
- Assists in developing the technical aspects of the QI process
- Conducts periodic safety evaluations and unit compliance with safety directives
- Educates ancillary or support personnel regarding chamber operations and safety
- Informs personnel of any special work conditions, e.g., infection control, hazard control, confined spaces and ensures permit to work scheme is in place and being utilised
- Conducts problem solving regarding safety issues and implementation of policy
- Collects information regarding equipment/ patient safety and reports relevant incidents to the staff
- Fosters positive relationship between the hospital/unit, local fire department, EMS, and pressure vessel inspector, as appropriate
- Set up a procedures to assist the Medical Director to review and document safety-related events and to report appropriate ones to other hyperbaric facilities that could benefit from the lessons learned.

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6. Training of the Safety Manager

In order to fulfill its tasks, it is of vital importance that the Safety Manager can receive an adequate training.

EBAss recommends that the Safety Manager shall have followed next to the initial training in hyperbaric matter (EVAss certificate ECHO or ECHRN), also a complementary specialized training like the ones for Safety Director, Fire Fighting course, and besides the security and precautions principles in medical environment.

In addition, EBAss recommends a specialized technical training given by the constructor.

A comprehension of the approach towards the quality assurance is necessary; similarly awareness towards the management techniques of human resources is a must.

Moreover, EBAss recommends that the candidate must be active in European matters of hyperbaric security, whether through his participation to working groups, whether through presentations at scientific congresses or the publication of specialized articles.

7. Profile of the Safety Manager

EBAss considers vital the establishment of a sound professional relationship between the Medical Director and his Safety Manager as well as between the latter and the whole HBO team.

Therefore, EBAss recommends that the Medical Director designates a member of his personnel that will hold down the function of Safety Manager.

This person will preferably have an experience of at least 3 years (during the past 5 years) in a clinical hyperbaric centre, meeting the indications of the ECHM, as a doctor, nurse or operator.

Moreover, EBAss recommends that this person should have participated to at least one congress on HBO during the past 5 years.

This person will receive the complement of training necessary to the executions of its tasks.

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8. Definitions of the term Safety Manager

The term Safety Manager has been withheld in order to avoid any confusion between the functions within the HBO team.

None withheld terms:

Safety Director: the term Director could have caused confusion with the Medical Director. Besides, the responsibilities of the Safety Director in the USA are broader than the ones proposed by EBAss.

Technical Director: the spectrum of functions and tasks proposed by EBAss go beyond the technical aspects.

Supervisor: this function is already described in the European Code of Good Practice for HBO. It does not correspond to the given functions.

Your reaction/ remarks/ observation are welcome to Robert HOUMAN - President EBAss or Steve Mc KENNA President EBAss Education Committee.

The next workshop would be held in Stockholm at the Karolinska unit on 9 April 2010.

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