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Presentation and summary of the training activities realized since 2005 by the Scientific Association of the helicopter rescue based in Italy.

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[Mountain HEMS Association](#) was born, with a notarial deed of incorporation, in April 2008 following the initiative of 7 autonomous Region /Provinces of the Alps and Apennines: in 2005, Dr. Enrico Visetti, Anesthetist Doctor of the Aosta hospital, organized a helicopter rescue training course aimed at new doctors to be included in the local helicopter rescue. In December 2006, access to the course was offered to all the other operational bases in the Alps. The invitation was extended to the various figures operating within the Service, therefore doctors, nurses, and subsequently the CNSAS Helicopter Rescue Technicians: with the participation of new external experiences, the course objective was also modified. In 2007, 90% of the participants in the training course were Doctors and Nurses who already had experience and actively operated in the helicopter rescue in the bases of origin: the participants themselves had to bring their own ideas and experiences and simultaneously cover the role of speakers. Until now, the main objective, concentrated in the training addressed to new doctors, became, thanks to the support of the various experiences, an exchange of opinions and a training ground for discussion between the various actors. The technical mountaineering part was managed thanks to the support of the mountain rescue, always present in the external activities alongside the staff. In the theoretical part, various lines of common behavior were discussed to be adopted in the interventions of Helicopter Rescue, while in the context of the scientific discussion, the total lack of a database of helicopter rescue services in which to obtain useful information was recognized. During the Courmayer course, in the spring of 2007, the idea of creating a website was born with the aim of developing a data acquisition system from the various operational bases of the Alpine and Apennine arc: from this initiative, the establishment of the Association.

• Neonatal stretcher onboard of an AW139 in the HEMS base of Grosseto

Hoisting manouver in Cagliari, onboard of an H145

A moment from a rope rescue training in Belluno

I-PEBZ from Bozen in action during a training of the HEMS Association

From the initial project of the 7 Regions/Autonomous Provinces making up the association, which provided for the adhesion of the helicopter rescue realities active in the Alpine/Apennine area, following requests also coming from operational bases in different areas, the association has set itself as a point of reference for the national helicopter rescue. Currently, the Mountain HEMS-Association

- www.hems-association.com - is joined by the majority of the 118 Medical Helicopter Rescue Services (emergency and urgency service) active in Italy. To date, there are 41 participating bases and are being evaluated by the Board of Directors of the association requests for membership of the bases of Foggia, Salerno, and Naples. With these new members, the HEMS Association will represent 44 of the 51 Italian helicopter rescue bases.

The Association aims to organize and promote all the activities that contribute to the training and scientific updating of the operators of the helicopter rescue services, with the goal of improving health practices aimed at safeguarding the health of the population and the care of the citizen also connected to territorial rescue, whether in relation to individual

events and/or mass emergencies. To this end, the HEMS Association promotes and increases training, updating, data collection, and scientific research activities through the participation or organization of meetings, conferences, conventions, the production of scientific publications or educational paths, and the creation and 'implementation of a database concerning the medical aid interventions carried out by helicopter.

Among the aims that the Association has set itself, the most ambitious is the creation of an online database for the collection and management of health, aeronautical, and technical data concerning all the rescue interventions carried out by the Helicopter Rescue Services participating to the Association; for the first time, different realities in terms of training, operations, and territorial location have archived, in digital form, their activity, responding to a single collection criterion built to provide the "helicopter rescue system" with all the specific information, both health and technical, necessary to allow homogeneous structural growth.

This project, the only one existing at both national and European level, has allowed the construction of a database that will assume ever greater international importance due to the richness and homogeneity of the collection: to date, health and technical data relating to over 103,000 interventions are stored in the association's database. This has allowed, and will allow, the processing of highly significant statistical reports with, therefore, a marked scientific impact on the health and technical procedures that can be developed and proposed.

• HEMS Base in Foggia

'80 rescue operation in Gordino, Belluno

• H145 from Brescia during a take-off

I-PEBZ

In recent years, HEMS Association has directed its activity, in addition to the collection and analysis of helicopter rescue data, to the training of health and technical operators in the belief that it is necessary to build a path that constitutes the common knowledge base of helicopter rescue operators. On this basis, each service will integrate the aspects relating to its own type of operation. With this in mind, the association requested and obtained the collaboration of the **CNSAS** (National Alpine and Speleological Rescue Corps). With it, the courses aimed at the bases operating in an inaccessible environment with the use of special maneuvers were built. To these courses, the Alpine Rescue sends, as teachers, the **SNATE** (National School of Helicopter Rescue Technicians) instructors who train health personnel in the safe management of rescue operations in an inaccessible area.

The high level of these courses has been recognized internationally, so much so that in addition to the certification issued by HEMS, those who pass the final tests obtain the

international certification **CISA-IKAR** (International Commission for Alpine Rescue), **UIAA** (Union Internationale des Associations d'Alpinisme) and **ISSM** (International Society for Mountain Medicine).

In addition, the association has collaborations in place aimed at conducting training courses relating to the topics of helicopter rescue and urgency-emergencies at the Faculty of Medicine of the University of Pavia and the University of Padua.

Below is a brief list of the courses that the HEMS Association organizes annually:

- HEMS course, theoretical-practical rescue in the mountain environment for nurses and doctors working at national HEMS bases

Active since 2005, the course, organized into a summer and a winter session, includes a practical part, managed in collaboration with the national CNSAS and the companies that operate the rescue helicopters, with outings in the environment and helicopter rescue exercises, and a theoretical part, with the performance of lectures or workshops, organized on the topics of greatest interest in the field of helicopter rescue. The course content is drawn up in accordance with the requirements of the international accreditation procedure.

- Advanced HEMS Course 2019 (summer rock and winter glacier part)

The Advanced HEMS Course aims to illustrate to healthcare professionals, who already work with many years of experience in helicopter rescue services, a shared working method that allows them to optimize the techniques and healthcare procedures to be used in rescue in an impervious/hostile environment. The operators find themselves operating in environmental conditions that require close collaboration between the technical and the health part in order to optimize the procedures and assistance techniques usually relegated to an urban context and which are not very suitable for rescue in an impervious/hostile environment. In such environmental situations, health workers will be stressed so that the operational decisions they want to implement are appropriate not only from the medical/health aspect but also in relation to the safety and handling criteria that the harsh environment requires.

- SAFETY course for nurses and doctors working at national HEMS bases

The course is the result of a path of reflection, comparison, and study by the "Safety" working group of the HEMS, which includes operators belonging to the health, aeronautics, and CNSAS components: these professionals make up the crew of the missions HEMS. The

group is coordinated by a psychologist-psychotherapeutic specialist specializing in emergency psychology, who carries out her professional activity in the context of emergency-urgency. The course represents a training proposal aimed at the health component and the CNSAS, focused not only on the role of the human factor in the field of safety, with the aim of promoting in operators a critical reflection on “non-technical” factors that can favor or undermine safety on a mission and stimulate active participation and the assumption of individual responsibility for safety, as this cannot and must not be the exclusive prerogative of the safety manager. Currently, the study group that deals with the contents of the course has a definition of the contents in place aimed at obtaining the university aegis of the course from the University of Padua.

- MEDEVAC course, approach to rescue and air transport by helicopter or plane for nurses and doctors who work at Emergency Services-Medical Emergency

The course is intended for doctors and nurses who work in the territorial Emergency-Urgency Services and want to approach air transport problems with fixed and rotary wings. It is a theoretical-practical course (lectures, workshops, tabletop, field exercises), lasting two days, with final evaluation through tests and simulations on clinical cases; it is a path intended for healthcare personnel who are already operating within the territorial emergency-urgency system and want to approach the issues of helicopter rescue. For 3 years, the University of Pavia has also been requesting the course to be held at its university and at the 118 helicopter rescue base in Bergamo.

• - BICICLET Course, Clinical Bioethics in the Emergency from the out-of-hospital setting to hospital management

BiciCLEt aims to provide 118 doctors, emergency rooms, and anesthesiologists-resuscitators operating in the critical area with knowledge and work tools useful for adopting appropriate treatment paths from an ethical point of view, in conditions burdened by prognostic uncertainty, from the very first moments of clinical case management. Topics of particular importance were selected for the ethical-clinical framework in the critical area, also in light of the possible outcomes (e.g., frail elderly with multiple pathologies and post-CPR management), framing them in a bioethical perspective, i.e., according to clinical, ethical coordinates, bio-legal and relational. The course program incorporates the presentation of the most recent SIAARTI documents in the field of clinical bioethics in the critical area; the workshop part is dedicated to the ethical analysis of clinical cases, according to a validated methodology.

Courses in the planning phase

- - Theoretical-practical HEMS course of rescue in the marine environment for nurses and doctors operating at national HEMS bases
- - Theoretical-practical HEMS safety course in approaching helicopter maneuvers for institutional bodies and Voluntary Associations operating in support of Helicopter Rescue Services
- - HEMS course on the medico-legal aspects of a helicopter rescue

Congress activities and periodic itinerant meetings

The HEMS Association promotes, every 2 years, a National Congress (Health helicopter rescue: between perspectives and reality) for personnel operating in the helicopter rescue services, which has reached its eighth edition and is organized on an itinerant basis at the various bases that adhere to the Association; in addition to this congress, the association collaborates with the Massa Carrara base in the organization of the national conference (HEMS: means, technologies, and services for helicopter rescue) which every 2 years, alternating with the previous one, is held at the airport of Massa Cinquale. In addition, since 2015, a congress called "IES" (Nurses in Emergency and Rescue) has been organized, dedicated to the professional figure of nurses who work in the territorial Emergency-Urgency Services: this congress also takes place every two years.

In addition, 3 itinerant meetings are organized annually to discuss the Association's programs and the problems relating to the activity of the helicopter rescue: these meetings, which are held at the bases that adhere to HEMS, are attended by health professionals, manufacturers, helicopter companies and companies that produce materials used in the helicopter rescue activity.