ONLINE TRAINING PROGRAM

SLOVENIA
2026

END-OF-LIFE CARE AND DECEASED DONATION



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1. INTRODUCTION

For the last two decades, Spain has led the activity of donation and transplantation based mainly on cadaveric donation. Traditionally, donation after brain death (DBD) has centered most of the donation and transplant activity. However, since its introduction in 2012, the activity of donation after circulatory death (DCD) in our country has not stopped growing.

The establishment of a donation programme in a given center/country entails a series of investments in human, logistical and technological resources, as well as a change in the culture of care. The procedures related to donation can generate ethical, moral and legal conflicts between health professionals, constituting the main limitation for the application of this type of protocol. **One of the greatest obstacles to overcome is the lack of knowledge about procedures related to the end of life and donation, which leads to perception errors, contributing to the generation of negative attitudes and/or discomfort in health professionals (*ref.1,2*).**

One of the keys to the success of the Spanish Donation & Trasplantation Model is undoubtedly the great effort in training on every aspect related to the end of life care and deceased donation to all professionals directly or indirectly involved in the Spanish health network for organ donaton and trasplantation.

This training will not only help to generate a favorable attitude towards end-of-life care and donation (*ref. 3*) but also to improve the care of the critical patient, especially in the provision of end-of-life care.

The **Donation and Transplantation Programs Coordination Department at University Hospital Vall d'Hebron has a long-standing tradition of top quality training programs in organ donation and transplantation in every possible format** (on-line, simulation, face to face etc…). Every year we train more than 400 professionals (national and internationally) through our on-line platform. Our courses are normally sponsored by the Spanish Ministry of Health (ONT) but also by other countries (i.e Croatia) national organizations or public institutions (AECID). We use the latest technology available and make an effort to continuously update our teaching strategies.

Please take a look at our courses at: **https://www.donacionytrasplante.com/**

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2. LEARNING OBJECTIVES

2.1. General objectives

- **Training in concepts about end-of-life care, the deceased organ donation process after brain death (DBD) and after death by circulatory criteria (DCD)** to health care professionals directly or indirectly related with the care of the critically ill patient and potential donors.
- **Creation of a debate discussion forum** on issues related to end of life, DBD and DCD
- **Facilitation of information exchange networks** among professionals.

2.2. Specific objectives

- To understand the concepts related to end-of-life patient care including adequacy of life support treatment (ALST). Distinguish between WLST and other practices such as euthanasia or assisted suicide.
- To comprehend the general and specific ethical-legal grounds about end-of-life practices.
- To understand types and aspects associated with different EoL practices.
- To describe the different types of donors, both deceased and living, their classification and definition based on different criteria.
- To know the different phases and professionals involved in the donation process, as well as the tools for its evaluation and optimization strategies.
- To understand the main differences and characteristics of the most successful organizational models of donation and transplantation.
- To be familiar with the different procedures, professionals and peculiarities of all the stages of the brain death donation process: Detection and evaluation of the potential donor, brain death diagnosis, donor maintenance, family approach, logistical and organizational aspects of organ retrieval and organ allocation principles and rules.
- To understand and gain a practical knowledge of Intensive Care Orientated to donation (ICOD) practices. To understand the ethical background, clinical and practical aspects of ICOD.
- To be familiar with the process of controlled DCD (Maastricht III). To understand the different phases and actors of the process, the intricacies of family approach and the different techniques and requirements necessary for this procedure.
- To be familiar with the process of uncontrolled DCD (Maastricht II). To learn their particularities and differences from other forms of donation as well as its most relevant technical and logistical features.

The achievement of the objectives is accomplished through the study of the latest evidence available regarding general aspects on end-of-life care and the process of deceased donation, both after brain death and after cardiocirculatory death.

3. PARTICIPANTS. STUDENTS

- The course is aimed **specifically at those health care professionals,** (doctors, nurses and technical personnel) **working in critical care settings as well as those who are directly or indirectly involved in the care of potential donors** (neurologists, surgeons, etc).

- Although core contents will be similar for all students, they will follow **different training tracks according to participant's background** (ie. Doctors will be encouraged to participate in the discussion of specific clinical cases, while nurses will go through different activities

- The student **selection** will be performed by the organization that requested it with the support of the academic coordination of the course.

4. TUTORING. PROFESSORS

- The tutoring of the course will **be carried out by experts with international professionals with extensive clinical experience**.. The tutors will be appointed by the academic coordination of the course.

- Besides international experts, **local experts** may be integrated into the faculty, **who besides tutoring the students, will collaborate in creating specific content adapted** to the reality of the country/area where the educational action will take place.

- A **set of 2 synchronous webinars** can be performed at **the beginning** (to introduce the methodology) and the **closure** (to give feedback on the participant´s performance) of the course. This webinars will be recorded and posted in the Moodle for easy asynchronous view.

5. EVALUATION

5.1. Evaluation of the students

a) Evaluation of knowledge and participation

It will be carried out based on two activities:

- **Continuous evaluation (30% of the evaluation)**
  By **monitoring the participation** of students in the discussion and debate forums in each of the modules.

- **Test and questionnaires (70% of the evaluation)**
  I. **Before the start of the theoretical content, an evaluation of the previous knowledge** of the participant will be carried out by means of a questionnaire (multiple option type).
  II. **At the end there will be questions related to the theoretical content,** the answer to which will be evaluated providing immediate feedback of the answers.

b) Evaluation of perception and attitude

By means of a survey prior to the beginning and at the end of the educational intervention in which the evolution of perceptions and attitudes regarding the subjects dealt with in the course are analyzed.

5.2. Course Evaluation

a) About the course

Participants will be asked to complete a **satisfaction survey** after each module completion to rate the technical, scientific and overall quality of content and presentation format. Participants will be also encouraged to make suggestions for improvement.

b) About the teaching staff

Each tutor will be evaluated individually.

6. DIPLOMA & ACCREDITATION

- Students who complete the course will obtain a **diploma accrediting their participation or/and achievement depending** on the criteria established and agreed beforehand.

- The **type of diploma as well as its mode of delivery is previously agreed between the academic coordination and the commissioning agency/country**.

- The Academic coordination of the Course will be performed by **Aula Vall d'Hebron,** a renowned training center in the field.

- **Obtaining continuing education credits and / or additional scientific endorsements is optional and will be the responsibility of the commissioning country / area**. The academic coordination of the course will provide all the necessary information and collaboration for this purpose.

7. METHODOLOGY

7.1. General methodology (e-learning)

The course **will be developed entirely in on-line format** using a personalized Moodle platform for each edition.

The use of on-line platforms in the educational field of health is leading to great advances in training with the aim of improving efficiency and ease of access to information in a professional category with problems of time, dedication, cost and mobility.**Training through e-learning offers a number of advantages** such as:



Allows the professional to obtain training paced to their agenda and access wherever they want.



Allows the combination of different materials (auditory, visual and audiovisual).



It facilitates the creation of knowledge and collaboration networks between professionals from different fields and countries



Allows interaction between the students and the teachers as well as the contents.



Provides a large volume of continuously updated information adapted to current realities.



Allows access to education by a large number of professionals saving costs and travel time.

In addition, new technologies allow the adaptability of on-Line training in e-learning model for any mobile device: smartphones, tablets and any other device with navigation capabilities in the Web.

7.2. General resources of the on-line courses

The learning material is clearly established and organized on the module's home page and consists of:



Study material

- **Updated theoretical content** that summarizes the published evidence on the topics covered. ***It will also include relevant information/documentation about the legal and organizational context of the area / country where the course is held will be added.***

- **Iconographic material** (Figures, Tables and Interactive Infographics) that synthesize the information facilitating interactive schemes on the theoretical content that will help to consolidate knowledge.

- **Videos** of different procedures to explain clinical procedures. (i.e: Brain stem exploration)
- **Access to complementary bibliographic material** (more than 400 references) for those who want to extend information, facilitating access to freely accessible manuscripts.



Discussion forums

A series of forums will be enabled **during the training period as a collaborative working tool between tutors and students** with the aim to share information, doubts, opinions and comments that may arise at any time during the course.

Various discussion and debate forums where tutors propose different clinical cases or ask different open-ended questions that will serve to debate the most relevant ethical and technical aspects of the topic. This forum also serves to share experiences or clarify any doubts of the participants encouraging collective learning and the creation of networks of knowledge and collaboration.

In addition to the discussion and debate forums, **there is a forum for questions on aspects related to the course**.



Clinical Case Discussion

A set of clinical cases will be posted for its completion and discussion by the participants. Their completion is not compulsory but strongly encouraged since it allows participants to test their knowledge in real clinical scenarios.



Social network tools

A hashtag will be created on Twitter to facilitate communication between students and tutors about issues relating to the opening of the modules, activities etc... In addition**, a group will be enabled on the LinkedIn platform** to connect professionals who wish to do so.



Learning activities (Gamification)

The course presents a **series of activities in different formats.** These tasks are intended to ensure reading and understanding of the concepts developed in the course as well as to reinforce the knowledge acquired. These activities are not evaluable and their completion will be proposed after reading the content (pop-up) or at the time, the student considers appropriate through the side menu. Some of them are:



Surveys

At the beginning and end of the course, students will be encouraged to answer a voluntary survey on their attitudes and perception about the donation and transplantation process. This survey will help us determine the impact of training on the participants' attitude and their perception of the issues covered in the course.



Questionnaires

- Prior to the beginning of the theoretical content of each module, **basal knowledge of the participants on the subject will be assessed** through a short questionnaire.
- Along the course, at the end of selected chapters, students will be presented with non-evaluative questions to consolidate their knowledge.
- **To evaluate the acquisition of knowledge, a final test is performed**, which allows to obtain the **diploma of achievement** of the course. The questionnaires are self-managed with automatic feedback. In the case of not achieving the required minimums, an attendance certificate.

7.3. Summary of the main characteristics of the on-line course



Content. Addresses updated general clinical and ethical issues EOL and deceased donation process, *Check Annex 1 for specific course content*



Duration. . The platform will be enabled 1 month prior to its start to update and adapt the content to the local context and enable the admission and access of students to the platform. After the course, a month will be allowed for content consultation. . *Check Annex 2 for specific course characteristics*



Course timetable. The student will be responsible for its progression through the different modules of the course, whose duration will be limited by the initial and final date of the entire training intervention.

- Before opening the access to the contents, the student will have one week (Module 0 - Warm-up) to know how the course works.
- *At the end of each module, the student will take a short test (multiple response) on the content studied, which may be taken an unlimited number of times until 80% of them are exceeded in order to be able to access the next module.*



Tutoring The tutoring will be developed by a faculty composed of experts appointed by the academic coordination of the course & local tutors. Tutors will stimulate learning through:

- Provision of **feedback to participants answers** to predetermined questions that will appear as the student progresses through the content (MD and nurses)
- The **discussion of clinical cases**, adapted to the local context, which will be discussed throughout its duration
- **Two synchronous webinars** the beginning and closure of the course



Evaluation. At the end of the course, participants successfully completing 70% of a minimum multiple-choice exam will obtain an achievement certificate. Those participants who access the course but do not meet the requirements for obtaining an achievement certificate will receive an attendance certificate.



Extras. Survey of perception and attitudes, and continuous monitoring of student participation.



Certificate. At the end of the course, the corresponding attendance/ achievement (if they have successfully completed the course) certificate will be issued. * Optional local accreditations CME and scientific endorsements

8. TASKS & RESPONSIBLES

The interested countries, through their agencies / organizations / ministries, will be responsible for financing the whole course editions. The copyright and exploitation rights of the course will belong to the Spanish organization and the same e-health company that does it in Spain (Magnore®) will carry out its implementation.

The organization responsible for financing the edition of the course, will be listed as promoters / endorsers of the course.

The amount to be payed includes:

Academic management

- **The academic coordination** of the project will be carried out by Aula Vall d'Hebron, responsible for coordinating the correct functioning of the current edition including:
    - **Content** creation and update of the content.,
    - **Facilitate and support** the role of teachers / tutors serving as a link between these and the technical team responsible for the digital platform both in the preparation of the material and during the implementation of the course.
    - **Manage the student's curriculum.**
        - Confirming the admission of the students
        - Addressing academic doubts that may arise, before, during and after each edition of the course
        - Conducting the final evaluation of the students
        - Performing academic reports for students
    - **Provide the information** necessary to obtain accreditation and endorsements in those editions that require it.
- **Tutoring.** Professionals with extensive clinical experience and knowledge of the sector configure the list of teachers / tutors. Tutors will be reimbursed based on:
    - **Revision and updating** of teaching material.
    - **Student tutoring** and promotion of discussion forums.
    - **2 synchronous webinar sessions**

Technical management

- **Online digital platform:** the digital support will be carried out by an external company (Magnore®) that will provide technical and functional support including:

    - **Registration of participants.** According to the instructions of the commissioning organization.
    - **Design and edition** of the graphic materials / videos of each module.
    - **Parameterization of the modules** to mark an automated or guided work itinerary.
    - **Development of activities** for the improvement of learning.
    - **Exams or questionnaires.** Creation of self-evaluating activities as well as final scoring activities to obtain credits or accreditations of each module.
    - **Accreditation Diploma.** Provide the list of accredited students to the host organization or if requested create a diploma or accreditation according to the specifications of the client for those participants who successfully fulfill the criteria indicated by the organization.
    - **Technical secretary.** Collect and address participants and teaching staff queries on the technical aspects of the platform using the necessary means and channels.
    - **Monitoring and completion reports.** Information and statistics on the functioning of the course will be provided every two weeks. Delivery of final report of participation, access and use of the platform and resources.

- **Secretariat and administrative support.** Economic management and payment of invoices and fees.

ANNEX 1. THEORETICAL CONTENTS: DONATION AS PART OF END-OF-LIFE PROCESS



Module 1.
Fundamentals of End-of-life Care (EOL).

1.1.End-of-life Care. Basic Terminology. Definition of concepts related to end-of-life and differences with practices such as Euthanasia or Assisted Suicide.

1.2 Ethical-legal grounds General ethical and legal grounds of end-of-life care practices.

1.3. Types and forms of implementation of adjustments of life support and incidence of its application in the world.

- EOL in neurocritical patients
- EOL in paediatric patients

1.4. The process of care at the end of life. Planning, professionals involved and application.

- **The decision:** Why, Who and When
- **The implementation.** How
- **Measuring the quality of the process**



Module 2.
The process of donation after death by neurological criteria (DBD)

2.1 Types of donors. Description of the types of donors (deceased and living) and peculiarities associated with each type. **Description of local donor profile**

2.2 DBD practice worldwide. DBD practice and outcomes worldwide. **DBD activity in Slovenia**

2.3 The DBD donation process. Description of the different phases and professionals participating in the DBD donation process.

- **Detection and evaluation of the potential DBD.** New detection scenarios: **Intensive Care Orientated to donation (ICOD): ethical grounds and practice.** The evaluation process. Contraindications for donation. The extended criteria donor.
- **Brain Death diagnosis.** Concept of death by neurological criteria. Clinical criteria and instrumental diagnosis. Legal certification. **Jurisdictional regulations for BD certification.**
- **Family interview and legal authorization** for DBD. New scenarios (ICOD)
- **DBD Donor maintenance.** Physiopathology of Brain Death. Objectives of maintenance, monitoring and treatment of associated complications.
- **Organ recovery in DBD**

2.4 Organ sharing and allocation. Description of the ethical principles for organ allocation, Distribution models**.** **Description of the local allocation model**

2.5. Biovigilance and Traceability in the donation process**.** Description of the goals, actors and process of biovigilance.



Module 3.
The process of donation after death by circulatory criteria (DCD)

3.1. Definition and classification of DCD donors.

3.2. World map of DCD. Impact of DCD donation and results of its implementation.

3.3. DCD general ethical-legal grounds. Concept of death according to neurological criteria. The concept of permanency and irreversibility. The Autoresuscitation concept

3.4. The donation process of controlled DCD (Maastricht III). Description of the different phases and participating professionals.

- **The ALST decision**
- **Potential DCD Identification. Analysis of DCD potentiality in Slovenia**
- **Evaluation of DCD potential donor**
- **Family approach of DCD donation**
- **DCD donor maintenance.** Differences between DBD and DCD donors.
- **Logistics and preparation:** Pre-morten measures.
- **Life support withdrawal, Asystole :** Where, Who and How is implemented
- **Preservation maneuvers:** Types of in-situ preservation strategies. Types of ex-situ preservation strategies.

MODULE 1. FUNDAMENTALS IN END-OF-LIFE CARE (EOL)

1.1. End-of-life Care. Basic Terminology.

1.1.1. Introduction
1.1.2. Basic Terminology: Definition of concepts related to end-of-life
Differences with practices such as Euthanasia or Assisted Suicide.

1.2 Ethical-legal grounds

1.2.1. Introduction
1.2.2. The goals of medicine
1.2.3. Bioethical principles and its application in EOL
1.2.3. Legal grounds in EOL decisions.

1.3. Types of LLST and its application around de world.

1.3.1. Introduction
1.3.2. Types of LLST
1.3.3. End-of-life care in the neocritical patient
1.3.4. End-of-life care in the pediatric patient.

1.4. The process of care process.

1.4.1. Introduction
1.4.2. Deciding on LLST. Concept of futility
1.4.3. The LLST decision making process. Team of professionals.
1.4.4. The LLST decision making process: Communication with the family
1.4.5. Deciding on LLST. Healthcare ethics committees (HEC)
1.4.6. Implementation of LLST. Recommendations on how to apply EOL care.
1.4.7. Quality in end-of-life care.

+ Information about the legal and operational situation of Slovenia regarding EOL care may be added to the international practice whenever appropriate.

MODULE 2. THE PROCES OF DONATION AFTER DEATH BY NEUROLOGICAL CRITERIA (DBD)

2.1. Types of donors.
2.1.1. Introduction
2.1.2. Living donors
2.1.3. Deceased donors. .

2.2 The donation process
1.2.1. Evaluation and Optimization of the donation process
1.2.2. Successful donation models.

2.3. Detection and evaluation of potential donors
2.3.1. Identification and detection of potential donors. New scenarios of detection (ICOD)
2.3.2. Evaluation of the potential donor
2.3.3. Contraindications for donation
2.3.4. Ideal donors and extended criteria donors. .

2.4. Brain death diagnosis
2.4.1. Concept of brain death
2.4.2. Brain death certification worldwide
2.4.3. Clinical diagnosis of brain death.
2.4.4. Instrumental tests for the diagnosis of brain death

2.5 Family interview and legal authorization
2.5.1 Introduction
2.5.2 Coping with the loss: the grieving process
2.5.3 Communication tools
2.5.4 Family interview
2.5.5 Reasons to donate and reasons to decline
2.5.6 Opting in and opting out legal systems for deceased donation

2.6 Donor maintenance
2.6.1 Introduction
2.6.2 Hemodynamic management
2.6.3 Respiratory management
2.6.4 Management of body temperature
2.6.5 Endocrine-metabolic management
2.6.6 Management of the hydro electrolyte balance
2.6.7 Management of hemostasis and inflammation
2.6.8 Other aspects to consider

2.7 Organ recovery preservation and packaging
2.7.1 Introduction
2.7.2 Purpose and organization of organ retrieval
2.7.3 Organ retrieval and packaging: technical aspects.
2.7.4 Organ preservation

2.8 Organ sharing and allocation
2.8.1 Introduction
2.8.2 Organ allocation criteria and principles
2.8.3 Organ allocation Models
2.8.4 Organ allocation systems

2.9 Bio vigilance and Traceability
2.9.1 Introduction
2.9.2 Scope of application, objectives and responsible
2.9.3 Procedure

+ Information about the DBD practice, and legal requirements of Slovenia may be added to the module content whenever appropriate.

MODULE 3. THE PROCESS OF DONATION AFTER DEATH DUE TO CIRCULATORY CRITERIA (DCD)

3.1 Types of donors after circulatory death
3.1.1 Introduction
3.1.2 Definition and classification of donation after circulatory death

3.2 Map of donation after circulatory death around the world and the impact of its application
3.2.1 Introduction
3.2.2 The practice of donation after circulatory death around the world
3.2.3 Donation after circulatory death outcomes
3.2.4 Impact of donation after circulatory death on donation after brain death

3.3 Ethical-legal grounds for donation after circulatory death
3.3.1 Introduction
3.3.2 Ethical-legal grounds. Global vision

3.4 The donation after controlled circulatory death (cDCD) process
3.4.1 Introduction
3.4.2 Decision to withdraw life support
3.4.3 Detection and identification of the cDCD
3.4.4 Evaluation of the potential donor
3.4.5 Authorization for organ donation
3.4.6 Donor maintenance and logistical organization
3.4.7 Life support withdrawal, circulatory death and certification of death
3.4.8 Preservation and retrieval techniques

+ Information about the DCD potentiality, and legal situation of Slovenia may be added to the module content whenever appropriate.