



# COMPETENCE PROFILE FOR NURSES

# in Plasma Donation Centers

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# Contribution and Collaboration

## Specialist Nurses

- Dr. Afra Masià-Plana, PhD, MSc, RN, EDTNA/ERCA Scientific Board Member and lecturer in faculty of nursing in Universitat de Girona, Spain.
- Ber Oomen, Executive Director Foundation of Nurse Specialists Europe
- Maria-Teresa Parisotto, Executive Director European Specialist Nurses Organization
- Dr Corinne Scicluna PhD, AND. Lecturer – Preparatory Nursing Course Faculty of Health Sciences, Department of Nursing, Mater Dei Hospital, Malta

## Organizations

### EDTNA/ERCA

- The European Dialysis and Transplant Nurses Association/European Renal Care Association (EDTNA/ERCA) is a multidisciplinary organization for those working in renal care. The mission of the Association is about 'achieving the best level of education, standards and research for all renal care professionals caring and supporting their patients and families around the world'. To be able to live up to this mission, we are a group of multidisciplinary professionals from different parts of the world. Many tasks are split and shared amongst us, enabling us to be stronger and to achieve our goals. We strive to ensure that the outcome of our education programs and projects in collaboration with our members, delegates and partners will show that excellence in education is our pursuit.

### ESNO

- The European Specialist Nurses Organization (ESNO) is a non-profit organization and the goal is to facilitate and provide an effective framework for communication and co-operation between the European Specialist Nurses Organizations and its constituent members. ESNO represents the mutual interests and benefits of these organizations to the wider European community in the interest of the public health. Members of ESNO consist of individual European specialist nurses' organizations.

## INDUSTRY ORGANIZATION

- The Plasma Protein Therapeutics Association (PPTA) is the global industry trade association with a strong European presence representing the private sector manufacturers of plasma-derived medicinal products (PDMPs) and privately-owned plasma donation centers, including more than 150 centers in Europe. PPTA is steadfast in its mission to promote the availability of, and access to, safe and effective plasma protein therapies for patients around the world.

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# PART 1 Introduction

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## Background

The PPTA and ESNO agreed to engage in a common project. The objective of this project is to develop a Competence profile for nurses in plasma donation centers aiming to expand their responsibilities in plasma collection centers and become the recognized qualified “Health Professionals” in the European context and overcome the current legal uncertainty with regard to the interpretation of Article 19 of Directive 2002/98 into national legislation. The Bologna Process, a mechanism promoting intergovernmental cooperation between European countries in the field of higher education, also encompasses nursing studies. This means in Europe there is a mutual recognition of qualifications for nurses. Basic education and training are similar in Europe; however, there are differences when it comes to specializations. In this way it would be possible to promote a recognized qualification for nurses within the European context as well as to set a standard European competency of advanced trained nurses who work in plasma collection centers and provide a common denominator for the multiple naming and titles of nurses throughout Europe (1).

With this competence profile ESNO and PPTA want to set a standard for the future, a foundation to build on for the future, based on experiences and data in order to gain a solid foundation for professionals working in this domain.

## Foreword

In the coming decade European countries will see an increased need for plasma-derived medicines to treat their patients for a range of rare diseases and critical medical conditions. (2) While demand for blood components for transfusion remains relatively stable, a European Commission survey showed that demand for plasma derivatives is increasing by some 6% per year. To meet this anticipated increase in need for plasma-derived medicines, and the donated plasma needed to produce them, health sector policymakers will need to put strategies in place to ensure a safe and stable supply of this blood component.

A key element which determines the availability of plasma-derived medicines is a continuous supply of safe, high-quality starting material, which is human plasma, the largest component of human blood. To meet the growing clinical need, significantly more plasma must be collected in Europe.

European plasma collectors are facing significant challenges. In EU legislation, the responsibility for donor examination and assessment in order to provide a safe donation lies with a qualified ‘health professional’. Several EU countries have transposed this qualification into national law as a requirement the individual must be a medical doctor. Consequently, regulations in many European countries require the presence of a physician at all times in plasma donation centers. In some cases, it is becoming increasingly difficult to fill these positions, resulting in shorter center opening hours, or hindering new centers from opening. This impacts the sufficient availability of plasma donations.

In reality, nurses who are adequately trained to perform tasks related to donor care and the use of medical devices for plasma collection are qualified to meet the ‘health professional’ criteria.

# Process of profiling the specialization of nurses in plasma collection centers

This competence profile has been designed to evolve over time. It is based on the current specific needs of plasma collection centers in Europe with regard to their operations. There is an urgency to create a competence profile for nurses in plasma collection centers so that nurses can not only provide greater support to physicians but also perform specific tasks when needed. The profile as described meets the essential aspects for nurses' competence to act according to minimum standards. Over time and based on experiences, feedback, evidence based practice and evaluations, the profile will evolve in compliance with requirements according to the international competence regulations. See Annexes 1 and 2.

In this profile the words, 'specialization,' and 'specialized,' are used in relation to experience and additional education, skills, knowledge, and competencies. The word 'specialist' will refer to a recognized national title related to accredited education and training requirements.

The specialization for nurses in plasma collection centers aims to evolve towards an accepted status, based on local and national regulations and expectations and in line with the qualified health professionals. This means that this competence profile has a guiding and advisory status on local, regional, and national levels.

Over time, the intention is to have this profile established and meet a cross border characteristic and ultimately also with a cross border recognized status for 'specialist nurses' in plasma collection centers.

## Plasma collection and plasma derived medicinal products (PDMPs)

Plasma is the liquid part of blood obtained either from whole blood donations (resulting in recovered plasma) or collected directly through a process called plasmapheresis (resulting in source plasma).

During plasmapheresis a needle is placed into a vein in the arm and connected to a plasmapheresis machine which removes whole blood, separates the plasma from the other blood components, and then returns the remaining components to the donor.

Plasma donation requires commitment from the donor, as it generally takes about one hour to donate plasma and can be donated more often than whole blood. The foundation of safe plasma derived medicinal products (PDMPs) is a regular and healthy plasma donor population. Donating plasma is a very safe process with minimal or no side effects, similar to a blood donation.

Plasma contains numerous proteins which are essential for the body to function properly. Some plasma proteins include Alpha-1 Proteinase Inhibitor (protects the lungs) – C1 Esterase Inhibitor (helps regulate inflammation) – Clotting or Coagulation Factors (controls bleeding) – Immunoglobulins or "Antibodies" (controls the immune system and prevents illness).



PDMPs derived from human plasma from healthy donors are essential for around 300,000 European patients who rely on these therapies to treat a variety of rare, chronic, and potentially life-threatening conditions, which are often genetic in origin. Without these treatments, many patients might not survive or would have a substantially diminished quality of life. Some conditions include:

- Alpha-1 Antitrypsin Deficiency – patients have chronic emphysema and liver damage
- Hereditary Angioedema – patients experience severe swelling; can be fatal if airway is obstructed
- Bleeding Disorders – patients cannot regulate bleeding; can be fatal if bleeding occurs in brain or vital organs
- Immunodeficiency Diseases – patients are chronically ill from severe, persistent, recurrent infections
- Chronic Inflammatory Demyelinating Polyneuropathy – patients experience progressive weakness, loss of limb function, and disability

The production of PDMPs begins with a plasma donation. The plasma is then frozen and transported to a facility for manufacturing. During the manufacturing process plasma is pooled, and individual proteins are extracted through a process called fractionation. It takes between 7-12 months from the actual donation until the finished therapy due to a highly complex manufacturing process [3].

## Working in a plasma collection center

A nurse in a plasma collection center can expect to work in an interesting environment, different from other areas of medical practice due to the fact that potential plasma donors are healthy individuals from the civil society who need to be regarded as customers and not as persons depending on health provision or patients. Nevertheless, a top priority in the full spectrum of activities during donation is that the personal health and wellbeing of the donor is secured, adverse events are prevented and that donation has no negative impact on the personal health and life.

The profile sought for this position should:

- Have a education and diploma as a nurse in a national system
- Have some experience in clinical practice, assessing, examination and evaluation of patients
- Have knowledge of puncture techniques such as venipuncture.
- Have abilities such as presence of mind, people skills, customer orientation and attention to detail. This includes the ability to reassure donors, help them relax and provide accurate answers to questions.
- Have good communications skills and be team player
- Willing to evolve in a dynamic environment

## Core Qualifications

- Outstanding customer orientation providing the best possible treatment to donors so that they are motivated to come back for further donations
- Solid communications abilities
- Ability to connect with various characters and personalities of donors and make them feel comfortable
- Operation of plasmapheresis equipment
- Ability to handle data, related to quality (assessment and relevance of data), privacy (meeting legal GDPR regulations), technology (IT and local digital systems and software) and Continuing Professional Development (CPD) in the collection and evaluation of donor data (4)
- Profound knowledge of pertinent Standard Operation Procedures (SOP) of centers and work under Good Manufacturing practice (GMP) regulations
- Excellent observational and organizational skills
- Good problem-solving abilities, a certain level of willingness and enthusiasm to apply them in continuous improvement activities related to the quality standards (innovation) and personal competencies of themselves, team members and customer service.
- Knowledge of legal requirements about blood/plasma donation, handling samples and use of relevant medical equipment and material
- Patience and presence of mind in order to act competent in relation to first aid and life support interventions and other signals such as alarming outcomes of laboratory results.

## What can you expect?

Nurses interested in this domain of health provision will discover a very rewarding work environment with a great spectrum of professionals but also interact with members of the civil society willing to give a part themselves to help patients to stay healthy or even alive.

Plasma donation requires the full attention of a professional to make sure that only healthy individuals donate. The nurse serves as an important bridge between the donors and the patients. After donation, the plasma is frozen and transported for manufacturing and processing into lifesaving therapies (PDMPs). Many European patients with rare, often genetic disorders depend on PDMPs.

Working in a plasma collection center allows nurses to be in contact with a variety of people, meeting donors but also working with different medical and non medical professions such as medical assistants, physicians, operators, vendors providing medical devices and other technical equipment.

Throughout their career, nurses are included in education and training and the work is verified with certification. In their work they also have opportunities to contribute to education and engage in ongoing quality assurance and can be included in management and other leadership positions.

Nurses' work in plasma collection centers will be highly appreciated by donors, but also the patients who rely on PDMPs will also be highly thankful for the energy, time and enthusiasm nurses are sharing.



## PART 2 Framework for Plasma Collection

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### 1. Background of plasma collection and plasma needs

Around 300.000 European patients rely on PDMPs to treat a variety of rare, chronic and genetic diseases that are serious, often life-threatening medical conditions. For individuals with these conditions, PDMPs replace their missing or deficient proteins. Without these treatments, many patients would either not be able to survive or would have a substantially diminished quality of life and productivity (5).

The availability of PDMPs is reliant on enough plasma being collected and manufactured into therapies. The plasma needed for manufacture is either acquired through whole blood donation (recovered plasma) or through plasma donation in a process called plasmapheresis (source plasma).

Recently, a major shift in health systems showed that quality assurance requires new paradigms. This also refers to the professional standards of health professions with the implication of interdisciplinary recognition of their potential and capacities. Correspondingly, this means that nurses with higher education levels, experience and competencies in certain health domains, qualified as “specialist nurse,” “physician assistant,” “advanced nurse practitioners,” or, “qualified nurses,” need to be recognized for their competencies in certain specializations or domains. Nurses should be employed to their fullest potential and capacity in plasma collection centers.

Ultimately, this will contribute to more flexibility in plasma center operations and increase plasma collections in Europe. Nurses will be able to stand in for physicians, exercise delegated tasks in line with the European directives and national regulatory requirements without the physician being physically present at all times in plasma collection centers.

#### 1.1. About plasmapheresis and procedure

Plasma donation requires commitment from the donor, as it generally takes about one hour to donate plasma and can be donated more often than whole blood. The foundation of safe PDMPs is a regular, healthy plasma donor population. Donating plasma is a very safe process with minimal or no side effects, just like a blood donation. Before donation, potential donors undergo a rigorous screening process to ensure both the donor’s safety and the safety of the collected product.

In the case or situation that nurses send a donor to a doctor or physician because of suspicious medical status, the ASA status (American Society of Anaesthesiology Physical Status Classification System) is used in the assessment and providing recommendation in risk assessment and interventions. In the advanced level, Specialist Nurses have knowledge of the system and the ability to communicate in the transfer of cases.

Donors undergo medical screening before each donation. Factors monitored before donation include blood pressure, pulse, temperature, IgG, health history screening similar to that for whole blood, as well as a physical exam with a physician. Donors are also tested for viral diseases that can be transmitted by blood such as HIV, HBV and HCV. Voluntary industry standards require at least two sets of negative test results before the collected plasma is used for manufacturing PDMPs. During the manufacturing process, plasma is treated multiple times to inactivate any potential virus(6).

Plasmapheresis is a sterile, self-contained, automated process where plasma is separated from red blood cells and other cellular components of blood which are then returned to the donor.

Since blood cells are returned to the donor and the body can replace plasma rapidly, a donor can donate plasma more often than whole blood donations. Donation volumes and frequency vary from country to country.

The collected plasma is promptly frozen at -20 °C and transported to a manufacturing facility for fractionation. This process separates the collected plasma into specific components, such as albumin and immunoglobulins, most of which are made into PDMPs for human use.

## 2. Competence Framework Plasma Collection Nurse

The competence profile for the specialization of nurses in plasma collection defines the skills, knowledge, and abilities required from nurses in order to perform in a plasma collection center based on 5 pillars of advanced nursing practice:

- Continuing education and advanced training:
  - > Participating in annual basic training for requalification
  - > Special nursing training for the job position

- Competencies:
  - > Strong customer orientation and communication skills
  - > Quality control and plasma management
  - > Problem solving and working with continuous improvement tools
  - > Documentation
  - > Coordinating and facilitating care pathways in case adverse events and incidents requiring intervention of an emergency medical team.
- Skills:
  - > Monitoring donor and hemovigilance reports to the authorities (report donor adverse reactions on donor management software)
  - > Donation process: screening, physical exam, assessment, venipuncture, control of possible complications or reactions during and after donation
- Consultancy:
  - > Donor health questionnaire – standardized algorithm, including the lists of medical, geographical and drug related referrals.
- Quality assurance:
  - > Interprofessional collaboration in all fields of activities to safeguard that innovation is an integrated part of the ongoing clinical work to meet the requirement that activities remain based scientific and evidence based and contribute to service improvement e.g. auditing, reviewing, control and research.

The level of nurses' education has a direct impact on donor outcomes. Nurses must strive to continue to learn and develop throughout their careers and to apply that learning into practice, to provide best care. An important part of the nurses' work includes health promotion and disease prevention [7]. This is also the case when working in a plasma collection center. Health promotion and disease prevention programs focus on keeping (potential) donors healthy, and improving knowledge, attitudes and beliefs [8]. It aims to engage and empower individuals and communities to choose healthy behaviors and make changes that reduce the risk of developing diseases. Defined by the World Health Organization, health promotion: "Enables people to increase control over their own health. It covers a wide range of social and environmental interventions that are designed to benefit and protect individual people's health and quality of life by addressing and preventing the root causes of ill health, not just focusing on treatment and cure" [9].

Nurses can have a high impact on health outcomes. This is particularly important when working in a plasma collection center where the focus is on the donors' wellbeing.

Nurses can perform leadership functions throughout an organization such as leading department and facility changes, developing innovative methods to provide better donor care and pioneering the way their organizations accomplish objectives and align with core values.

In a teamwork environment such as plasma donation centers, it is crucial to build an effective and efficient leadership activity. Leadership and management refer to the roles of nurses that might have responsibility for, including certain plasma center personnel, overseeing the organizational structure of medical processes and leading nursing teams. It also facilitates changes, develops innovative methods and pioneering the way their organizations accomplish objectives and align with core values in order to provide better donor care [10].

## 2.1. Guiding principles of the training

In order to develop a European Nurse Profile for plasma donation centers, the European Qualifications Framework (EQF) could be used. The EQF is a common European reference framework which links countries' qualifications systems together, acting as a translation device to make qualifications more readable and understandable across different countries and systems in Europe. It has two principal aims: Promote citizens' mobility between countries and facilitate their lifelong learning. The EQF tool will encourage the development of mobile and flexible workforce throughout Europe and foster a harmonized and extended role of nurses in a plasma donation centers.

The EQF tool aligns with the WHO Global Code of Practice on the International Recruitment of Health Personnel," which is a critical factor addressing chronic workforce shortages in developing countries and undermining sustainable health workforce development. It represents a significant global effort to tackle the challenge of international health, worker mobility, and chronic [11] workforce shortages.

It should be taken into account that training requires harmonization, as stated in the WHO Global Strategic Directions for Nursing and Midwifery (SDNM) 2021-2025, which document presents evidence-based practices and an interrelated set of policy priorities that, if adopted, can help countries ensure that midwives and nurses optimally contribute to achieving universal health coverage (UHC) and other population health goals and also encourage the leadership role that nurses are expected to take [12] [13] .

A nurse has to acquire both the knowledge and the skills to adequately assess donors and their suitability for donating plasma. Furthermore, the nurse must demonstrate strong customer and service orientation towards potential donors. This should be done by taking into account professional ethical aspects such as appreciation and non-discrimination. Medically relevant knowledge as well as legal and didactic knowledge have to be acquired. A close link between what has been theoretically learned and what is applied in practice is a major concern of this advanced training course. Therefore, theoretical basics must be imparted in a practice-oriented manner and deepened in the practical parts in order to enable plasma center nurses to act professionally.

During training, attention must be paid to respectful treatment, careful working methods, conscientious compliance with regulations and requirements to prevent infections, accidents and to protect the environment as well as communication skills.

### 3. Duration and structure of the training

This competence profile is inspired by the Austrian curriculum for mobile blood drive nurses, which has shown good working practice on the ground, and serves as an example for other countries. Taking into consideration the differences between Member States, implementation will depend on national legislation, regulations and guidelines. The profile sets a minimum performance level and requires that training is accessible only for nurses who have at least one year of working experience in a blood or plasma collection center.

The training is open to all nurses, covers a total of 120 hours and is divided into three consecutive parts, beginning with a theoretical sections and then two practical sections.

I. Theoretical training: 20 hours

II. Practical training 1: 50 hours

III. Practical training 2: 50 hours

#### OVERVIEW OF THE CONTENT AND ALLOCATION OF HOURS

I. Theoretical training		II. Practical training 1	
1. Legal basics	2	Working with a physician who is qualified for donor approval and one year direct cooperation and not just supervision	
2. Physiological principles	2		
3. Basic medical terms	2		
4. Infectiology	6	Independent practice of the activities under the supervision of a physician who is qualified for donor approval	
5. Donor reactions	4		
6. Communication	4		
A total of	20 hours	Total	50 hours
		III. Practical training 2	
		Independent practice of the activities under the supervision of a physician who is qualified for donor approval	
		Total	80 hours

## 4. Content of training

### 4.1. Content Part I – Theoretical training

#### 1. Legal basic

- > National legal basis of the field of activity
- > Responsibilities and competences
- > Obligations and Rights

#### 2. Physiological principles

- > Blood circulation
- > Blood pressure
- > Blood volume
- > Compensation mechanisms
- > Heart rate
- > Hypovolemia
- > Hypervolemia
- > Vagotonia / sympatheticotonia

#### 3. Basic medical terms

- > Relevant medical terms
- > Blood groups identification
- > Infection testing

#### 4. Infectiology

- > Medical microbiology
- > Blood borne diseases



## 5. Donor reactions

- > vasovagal, hypotensive reactions,
- > Bruising / hematoma
- > Compartment Syndrome
- > Thrombophlebitis
- > Nerve injury
- > Needle trauma
- > Extravasation
- > Insufficient blood volume during blood donation
- > Arterial puncture
- > Thrombosis

## 6. Donor communication

- > Appreciation
- > Active donor interviewing
- > First-time donors
- > Language barriers
- > Questions about taking medication
- > Questions about malignancies
- > Questions about travel history
- > Questions about sexual risk behavior
- > Questions about tattoos and piercings

## 7. Responding to incident

- > Knowledge on assessment of incident
- > Documentation procedures

## 4.2. Content Part II – Practical training

- Training on the plasmapheresis machine
- Team training, interdisciplinary
- Education activities
- Practice of the activities under the supervision of a physician

## 4.3. Examination

The exam consists of:

- a written or oral review of the theoretical learning content and
- an assessment of the practical parts (internship report).

## 4.4. Certification

After successfully passing the final examination, the trainee must be issued with a certificate of the successfully completed training. This certification will be based on a recognized structure and requires re-certification on a level of national legal base. This is to maintain a high-quality standard in plasma donation and to be able to react accordingly in emergency situations.

For nurses, this is required in some European Member States. This means there will be a control as to the status of the nurse and the number of hours performed.

The re-certification of Plasma Donation Nurses is required every three years but is recommended to take place least bi-annually. Recertification criteria must include:

- Proof of completion of training in first aid, emergency care, life support (at least 16 hours)
- Proof of practical work in the area of obtaining human blood and blood components in a collection center. Hours to be determined.
- Knowledge on the legal aspects and quality standards. Assessment through an exam or an audit on the job profile

## 5. Legal basics

The competence profile needs to be:

In line with **Directive 2002/98/EC Article 19**

Examination of donors

- An examination of the donor, including an interview, shall be carried out before any donation of blood or blood components. A qualified health professional shall be responsible, in particular, for giving to and gathering from donors the information which is necessary to assess their eligibility to donate and shall, on the basis thereof, assess the eligibility of donors.

In line with **Directive 2011/24 Article 3 (f)**

Health professional:

- a doctor of medicine, a nurse responsible for general care, a dental practitioner, a midwife or a pharmacist within the meaning of Directive 2005/36/EC, or another professional exercising activities in the healthcare sector which are restricted to a regulated profession as defined in Article 3(1)(a) of Directive 2005/36/EC, or a person considered to be a health professional according to the legislation of the Member State of treatment.

## 6. Donor care and well-being

This competence profile is intended to contribute to the standardization and harmonization of nurses in plasma donation centers and their ability to perform tasks delegated by physicians. One key responsibility is to monitor donor health, well-being and safety before, during and after donation.

Nurses can measure and demonstrate with evidence, their significant contributions to value added healthcare through improvements in donor well-being, clinical outcomes, improved services and reduced cost. In representing knowledge of nursing science, the Nursing Diagnosis (NANDA) (14), Nursing Outcomes (NOC) (15) and Nursing Interventions (NIC) (16) taxonomy provides the structure for a standardized language in which to communicate within nursing and other disciplines internationally. It also allows nurses involved in scholarships and research activities to communicate about events of interest. Using this taxonomy and coding of the diagnostic indicators, it will facilitate their use for populating assessment databases within donor management systems (14).

Donor health and safety is of paramount importance for the plasma industry. Only through the commitment of healthy plasma donors can high-quality and safe PDMPs can be manufactured. During blood or plasma donation, adverse events are quite rare and when an event does occur, they are usually mild in nature. The majority of donor adverse events that have been observed are vasovagal events. The need for medical intervention is rare. Appropriately-trained health professionals are well capable of providing first aid and supporting a donor until the arrival of the emergency medical services. This includes annual competence development in line with national requirements (17).

## PART 3 Nursing regulation

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### Nursing diagnosis

A nursing diagnosis is a clinical judgment concerning a human response to health conditions/life processes, or vulnerability for that response, by an individual, family, group, or community. The foundation of nursing diagnosis is clinical reasoning, and it requires the ability to distinguish normal from abnormal data, cluster related data, recognize missing data, identify inconsistencies in data and make inferences [18].

Donor suitability assessment involves the collection of subjective and objective information (e.g., vital signs, donor interview, physical exam) and review of historical information in the donor file. Nurses also collect information on strengths (to identify health promotion opportunities) and risks (areas that nurses can prevent or potential problems they can postpone).

### Nursing outcomes

Nursing diagnoses are used to identify intended outcomes of care and plan nursing-specific interventions sequentially. A nursing outcome refers to a measurable behavior or perception demonstrated by an individual, family, group, or community that is responsive to nursing interventions. The nursing Outcome Classification (NOC) is a system that can be used to select outcomes measures related to nursing diagnosis. NOC can also be used to determine staffing needs as nursing is the largest operational cost in health centers, so a small change in a staffing model has a large impact on financial outcomes [19].

### Nurses intervention

An intervention is defined as “any treatment, based upon clinical judgment and knowledge, that a nurse performs to enhance patient/client outcomes”. The Nursing Interventions Classification (NIC) is a comprehensive, evidence-based taxonomy of interventions that nurses perform across various care settings. Using nursing knowledge, nurses perform both independent and interdisciplinary interventions.

In the following Table 1 and Table 2 we present an overview of major Nursing Diagnosis correlated with its Nursing Outcomes and Nursing interventions that would require attention within the plasmapheresis centers. In Table 1 we focused on the specific classification that would require intervention in an adverse event. In Table 2 we focused on the general interventions that a registered nurse could be developing on a daily basis in a plasmapheresis center.

## ANNEX – 1

**TABLE 1: NANDA-NOC-NIC CLASSIFICATION WHEN ADVERSE EVENTS COULD HAPPEN IN A PLASMAPHERESIS CENTER COLLECTION:**

DOMAIN	Nursing diagnosis (NANDA)/code	Nursing Outcomes (NOC)/code	Nursing Interventions (NIC)/code
<b>2: Nutrition</b>	Risk for electrolyte imbalance/00195	electrolyte and acid-base balance/0600	Electrolyte management/2000
	Deficient fluid volume/00027	Fluid balance/0601	Hypovolemia management/4180
	Risk for deficient fluid volume/00028	electrolyte and acid-base balance/0600	Hypovolemia management/4180
	Risk for imbalance fluid volume/00025	Fluid balance/0601	Hypovolemia management/4180
<b>4: activity/ rest</b>	Fatigue/00093	Activity tolerance/0005	Energy management/0180
	Risk for decreased cardiac output/00240	Cardiac pump effectiveness/0400	Defibrillator management: external /4095
<b>5: Perception / Cognition</b>	Deficient Knowledge/00126	Knowledge: health behaviour/1805	Health education/5510
<b>9: Coping/ stress tolerance</b>	Anxiety/00146	Anxiety self-control/1402	Anxiety reduction /5820
	Fear/00148	Fear self-control/1404	Coping enhancement /5230



DOMAIN	Nursing diagnosis (NANDA)/code	Nursing Outcomes (NOC)/code	Nursing Interventions (NIC)/code
<b>11: Safety/ protection</b>	Risk for infection/00004	Wound healing: primary intention/1102	Incision site care/3440
	Risk for bleeding/00206	Blood loss severity/0413	Bleeding precautions/4010
	Risk for shock/00205	Cardiopulmonary status/0414	Code management/6140
	Risk for impaired skin integrity/00047	Tissue integrity: skin and mucous membranes/1101	Skin surveillance/3590
	Risk for vascular trauma/00213	Tissue perfusion: peripheral/0407	Circulatory care: venous insufficiency/4066
	Risk for allergy response/00217	Allergic response: localized/0705	Medication administration/2300
	Risk for latex allergy response/00042	Allergic response: localized/0705	Latex allergy precautions/6570
<b>12: Comfort</b>	Acute Pain/00132	Comfort status/2008	Pain management/1400

## ANNEX – 2

**TABLE 2: NANDA-NOC-NIC CLASSIFICATION, FOR GENERAL NURSING ACTIVITIES IN PLASMAPHERESIS CENTRES, OTHER THAN ADVERSE EVENTS:**

DOMAIN	Nursing diagnosis (NANDA)/code	Nursing Outcomes (NOC)/code	Nursing Interventions (NIC)/code
<b>1: Health Promotion</b>	Ineffective health maintenance/00099	Health promoting behavior/1602	Community Health development /8500
	Deficient community health/00215	Risk detection/1908	Risk identification/6610
			Research data collection/8120
			Health screening/6520
<b>4: activity/rest</b>	Impaired physical mobility/00085	Activity tolerance/0005	Activity therapy/4310
<b>5: Perception /Cognition</b>	Readiness for enhanced communication/00157	Client Satisfaction: caring/3001	Anxiety reduction/5820
<b>10: Life Principles</b>	Readiness for enhanced spiritual well-being/00068	Personal well-being/2002	Spiritual support/5420
	Readiness for enhanced decision-making/00184	Information processing/0907	Decision-making support /5250

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