

Ecole Des Infirmiers Anesthésistes (Nurse Anesthesia Program) Hopital Salpetriere, Paris, France

Program director: Monique Guinot
Ecole Des Infirmiers Anesthésistes
Hopital Salpetriere
47 Boulevard De L'Hopital
75013 Paris France

IFNA Accreditation (level 3) effective November 2011 – May 2017

Anesthesia education programs holding Level 3: IFNA Accreditation have met eligibility and application requirements for IFNA Accreditation. Recognized programs have also undergone a successful self-study and on-site visit to demonstrate substantial compliance with "IFNA's Educational Standards for Preparing Nurse Anesthetists". Information about the curriculum is current at date of application.

Admission criteria

- Basic nursing education (3 years post baccalaureate)
- 2 years experience of care near the patient (including preferably at least 1 year in intensive or critical care units)
- Admission examination to start a nurse anesthesia program of education.
- Dossier containing a curriculum vitae and the employer's appreciation

General information

- The course takes 2 years including theoretical and clinical courses
- At the end of the program the student shall pass and succeed in a national final examination to be awarded the National Diploma of Nurse Anesthetist
There are 27 civil programs and 3 military programs
- The nurse anesthesia program of education is a national one. (See below details)
FRENCH NURSE ANESTHESIA PROGRAM
- For every year there is a vacation period of thirty (30) days and twelve (12) days off, determined by the director of the program
- Theoretical, practical and clinical education is divided on three (3) sequences per year. Every sequence shall be validated with a minimum mark of 10 /20
- The clinical training period is composed of mandatory and optional traineeship. The sites are approved by the regional official representative of the Ministry of Health, based on the selection made by the program director and the scientific director
- The traineeship evaluation is made by the anesthesia department head anesthesiologist, the department head nurse anesthetist and the nurse anesthetist in charge of the student.
A minimum mark of 10/20 is required
- In case of failure, the student could be authorized to extend the studies by one (1) year
- The examination is organized by the regional official representative of the Ministry of Health

Final examination

- A synthesis examination-paper of 2 hours, marked out of 20
- A written test of 10 questions during 2 hours, marked out of 20

- A clinical and professional evaluation on traineeship site, evaluated by an anesthesiologist and a nurse anesthetist. The evaluation is marked out of 20
- In addition of the 2 marks for the written tests and the one for the clinical evaluation, there is the average out of 20 of the marks for the 6 sequences and the traineeship of the two years of education

The examining board

- The regional representative of the Ministry of Health
- Two (2) Anesthesiologists, one is the department head anesthesiologist of the hospital where the school is settled
- A Nurse Anesthesia Program Director or teacher of another school
- A Scientific Director of a nurse anesthesia program of another school
- Two (2) Nurse Anesthetists, one is a Head Nurse Anesthetist on a traineeship site

CURRICULUM OVERVIEW

Credential: National Diploma in Nurse Anesthetist

Academic

1st year 1st sequence

1. Anatomy and physiology

Anatomy and physiology of respiratory system

Anatomy and physiology of cardiovascular system

Normal ECG

Anatomy and physiology of the nervous system

Role and composition of blood

Blood groups

2. Pharmacology

Effects of anesthetics on nervous system

Signs and stages of anesthesia

Physical laws of gases and vaporization

Pharmaco- dynamic, pharmaco- kinetic and use of thiopental, nitrous oxide and halothane

3. Technique

Normobar oxygen-therapy

Arterial and venous routes

Induction and maintenance of general anesthesia

Tracheal intubation

Effects of positioning and change in positioning of the patient during operation

Events and accidents during anesthesia

Cardio respiratory resuscitation procedures

Practical courses

Preparation of the OR, equipment, agents and drugs

Implementation and maintenance of anesthesia record

Drugs and agents dilution

Intubation: material and techniques

Cardiac monitoring

Gases conditioning, pressure reducer, flow control and safety mixer

Setting of open and close gas machine tubes

Use of inhalation machines

Monitoring
Capnography, and other gases elimination monitoring
Vascular catheters placement, types of catheters
Fluids for anesthesia and resuscitation
Cardiorespiratory resuscitation procedures

1st year 2nd sequence

Academic

1. Physiology and pathophysiology

Cardiovascular system
ECG monitoring and rhythm problems
Techniques for collecting data from hemodynamic invasive and non- invasive monitoring
Shocks: hypovolemia, collapses, anaphylactic, septic
Blood and hemostats
Blood transfusion, regulation, problems and accidents
Blood by-products
Auto transfusion, haemodilution
Hemostats, physiology remains and drugs interaction

2. Physiology

Fluid - & electrolyte balance
Renal physiology
Acid-base balance

3. Pharmacology and administration techniques

Pharmacology and utilization techniques of inhalation and intravenous anesthetics (end)
Physiology of neuromuscular system, management and complications of muscle relaxation, pharmacology of muscle relaxants and antagonists
Pain sensibility routes and endorphins, pharmacology of morphine and antagonists, management and complications of administration of morphine
Neuroleptics, benzodiazepines: pharmacology and techniques of utilization for pre-anesthesia, neuroleptic - analgesia and dis- analgesia

4. Anesthesia techniques

Emergence, physiopathology and management
Problems and accidents during recovery period
Physiopathology of artificial ventilation
Starting management and weaning of artificial ventilation

Practical courses

Utilization of different cardiovascular monitoring
Setting and utilization of equipment for a massive blood transfusion
Principles and working of anesthesia machines. Oxymeter
Monitoring of neuromuscular relaxation

1st year 3rd sequence

Academic

1. Anesthesia techniques

Thermoregulation, hypothermia and hyperthermia peri-operative
Regional anesthesia
Anatomy and physiology
Pharmacology of regional anesthetics
Methods, problems and accidents of following techniques:

- spinal anesthesia
- epidural anesthesia
- regional blocks
- regional intravenous anesthesia

2. Anesthesia for different categories of patients, surgery types and emergency grade.

- Anesthesia for intra-abdominal surgery
- Anesthesia for orthopedic surgery
- Anesthesia for geriatric patients
- Anesthesia for the obese
- Anesthesia for chronic bronchitis and respiratory failure
- Anesthesia for cardiac failure, coronary insufficiency
- Anesthesia for renal failure
- Anesthesia for cirrhotic and liver failure
- Anesthesia for diabetic conditions
- Anesthesia for emergency with full stomach
- Anesthesia for shock patients and Polytrauma
- Anesthesia for burns
- Evaluation of the risks of anesthesia and surgery
- Preanesthetic interview
- Position of the Nurse Anesthetist in the care system
- Legislation and responsibilities

Practice

- Utilization of different warming system
- Monitoring. Preparation of equipment for a regional anesthesia

2nd year 1st sequence

Academic

1. Anesthesia for pregnant women.

- General and regional anesthesia for obstetrics
- Neonate physiology
- Neonate resuscitation
- Anesthesia for pediatric patients

2. Anesthesia for various disciplines

- Anesthesia for thyroid surgery
- Anesthesia for ophthalmology, ear, nose and throat surgery, face surgery
- Hypotensive techniques
- Anesthesia for X-ray, scan investigation, endoscopy and central catheters
- Anesthesia for ambulatory and day surgery patient
- Anesthesia for urology surgery
- Anesthesia for vascular surgery
- Anesthesia for cardiac surgery and extra-corporeal circulation
- Anesthesia for thoracic surgery
- Anesthesia for renal surgery
- Iatrogenic problems and accidents

Practice for neonate

- Venous catheter placement
- Infusion, transfusion
- Ventilation
- Machines

Incubators
Warming table

2nd year 2nd sequence

Academic

1. Post - operative cardiorespiratory complications
Acute Respiratory Distress Syndrome
Tracheotomy and cares for tracheotomy patients
Management for long period artificial ventilation
Central and spinal neurological syndrome, Porphyria, Myasthenia
Polytrauma, thoracic fractures, fat embolism
2. Acute renal insufficiency: prevention, management and care
Chronic renal insufficiency
Hemodialysis and peritoneal dialysis, extra-renal purification
Severe liver insufficiency
Digestive hemorrhage
Enteral and parenteral nutrition
Fluid - electrolytic and acid base balance failure
Anaphylaxis
3. Nosocomial infection
Antibiotic therapy and antibiotics generalities
Peritonitis
Septicemia
Gangrene
Burns
Coagulation troubles, complications of anticoagulant

Guided workshop

Hospital hygienic principles adapted to anesthesia
Hydroelectric and acid -base balance management
Ethics and human relationship with the patient on anesthesia

Practice

Methods and machines for ventilation for anesthesia and resuscitation
Methods for sterilizing anesthesia equipment and machines
Enteral and parenteral nutrition

2nd year 3rd sequence

Academic

1. Organization of emergency medical care. Catastrophes and official health organization
Management of cardio-respiratory failure
Management of cerebral problems
Analgesia and sedation
2. Trauma and other emergency situations
Skull and cerebral trauma
Spinal trauma
Thoracic trauma
Abdominal trauma
Limb trauma
Polytrauma

Incarceration, crush syndrome
Hanging, drowning, electrocution, burns, hypothermia
Shooting injuries, knife injuries
Accidental hypothermia
Aid on particular circumstances: sea, mountains

3. Medical emergencies. Evaluation, management and hospitalization

Respiratory emergencies
Cardiovascular emergencies
Toxic, metabolic and vascular coma
Convulsive status. Jactitation status
Intoxication
Immediate delivery

Guided workshop

Regional organization of emergencies
Collection, organization, utilization and transmission of information
Computerized systems for anesthesia
Principles and tools for management of anesthesia equipment

Practice

Techniques and equipment for pre – hospital care
Pick up and positioning of patient for transportation
First aid
Ambulance cars and equipment
Emergency and shock unit: equipment, organization

Outcome

The goal of the Nurse Anesthesia program is the acquisition of theoretical and clinical knowledge required for the nurse anesthesia practice in different general and regional anesthesia, management of the recovery period, resuscitation and emergency care, management of severe patient's transportation.

The program takes 24 months or 4056 hours, including 505 hours of theoretical studies and 77 weeks of training.

First year

The student shall be able to participate in general and regional anesthesia for visceral and trauma surgery, be able to explain the resuscitation acts linked with this type of anesthesia and be able to identify and to use the relevant drugs and equipment.

Proceed under the supervision of the responsible physician to the management of the patient during the pre - anesthesia period and the O.R admittance to the following procedures:

- Placement of intravenous catheter
- Ventilation with a mask
- Intubation
- Extubation
- Assisted and controlled ventilation during perioperative period
- Management of the anesthesia and recovery period
- Detection of main complication

Second year

Participate in general anesthesia and regional anesthesia to any kind of patient and surgery.
Realize different types of resuscitation cares and participate to the management of acute emergencies and acute patient transportation.

The theoretical education consists of three (3) annual sequences. The education is composed of theoretical lectures, practical courses and workshops. Practical and workshops shall be done by nurse Anesthetists and the length can't be less than 200 hours for the six sequences.

Theory 1st Year	hours
I-Sequence	56
II-Sequence	66
III-Sequence	45
Total 1st. Year	167

2nd Year	
I-Sequence	44
II-Sequence	49
III-Sequence	45
Total 2nd. Year	138
Overall Total	305

Practical and workshops	200
--------------------------------	-----

Three (3) practical sessions of 6 hours each, shall be devoted to blood transfusion, Hemodialysis and Extra-Corporeal Circulation, during the 2 years of education.

Blood transfusion	20 hours
Hemodialysis	19 hours

Clinical Education 1st Year

Discipline	weeks
General surgery, visceral and digestive, orthopedic and traumatological	30
Stomatology, oropharyngeal and ear surgery and ophthalmology	8

2nd year	
Pediatric	8
Gynecology and obstetric	8
Surgical and medical intensive care	9
Emergency, acute ambulatory care	4

Optional traineeship	
General surgery, intra abdominal, orthopedic and trauma surgery	4
Emergency, Neuro surgery, cardiac surgery	5
Total	77