



UNIVERSITÀ  
DEGLI STUDI DI MILANO-BICOCCA

## SYLLABUS DEL CORSO

### Infermieristica in Area Critica

2425-3-I0101D0017-I0101D055M

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#### Aims

##### General goal

At the end of the course the student will be able to plan nursing to the critical patient, identifying the priorities and contextualizing the interventions in the different critical setting

##### Intermediate goals

- Know the organization, roles and responsibilities of the figures operating in the intra- and extra-hospital emergency-urgency department (DEA)
- Identify the paths of continuity of care in a critical area: NUE112 - AREU Health Aid, Emergency Room, Intensive Care and mention about specialist setting
- Identify priorities using the vital signs assessment approach: A (airways), B (breathing), C (circulation), D (disability), E (exposure) in adults, neonates and children
- Plan and document nursing in a critical situations
  - Disorder of consciousness (DOC)
  - Respiratory failure
  - Hemodynamic instability
  - Septic shock
  - Polytrauma

#### Contents

##### The Emergency Department

Ventilatory support and respiratory monitoring in the critical patient (adult, newborn and child)

Cardiovascular support and hemodynamic monitoring in the critical patient (adult, mention to newborn and

child)

## **Neurological assessment of the critical patient (adult, mention to newborn and child)**

\*\*Nursing responsibilities and competencies relating to: \*\*

## **Pre-hospital assessment, management and transport of polytrauma patient**

*The program provides for each student to carry out the BLS-D course with the acquisition of the BLS-D executor certificate*

## **Detailed program**

### **Specific topic**

#### **The Emergency Department**

- Birth of a culture of urgency and historical evolution of the critical care
- Nursing records in critical care
- Assessment of the critically ill patient and scales
- Accountability and skills of the critical care nurse in the application of diagnostic-therapeutic protocols in out-of-hospital rescue and in Emergency Department triage
- Triage in the Emergency Department: objectives, process and skills
- Triage in infectious emergencies-urgencies (notes)

#### **Ventilatory support and respiratory monitoring in the critical patient (adult, newborn and child)**

*Assist patient undergoing*

- Endotracheal intubation
- Percutaneous tracheostomy
- Tracheobronchial suctioning (from tracheal tube/cannula)
- Invasive ventilation: main ventilation methods, management and monitoring of devices and alarms
- Non-invasive ventilation: main methods, management and monitoring of the patient undergoing continuous positive air pressure (CPAP) using helmet and non-invasive positive pressure ventilation (NPPV) using face or nasal masks
- Prone position

#### **Cardiovascular support and hemodynamic monitoring in the critical patient (adult, mention to newborn and child)**

- Instrumental and clinical monitoring: heart rate (HR), non-invasive arterial pressure (NIBP), invasive arterial pressure (IBP), central venous pressure (CVP), pulmonary artery pressure (PAP), pulmonary wedge pressure (PCWP), flow heart rate (CO), mixed venous saturation (SVO?), electrocardiogram (ECG)

*Assist patient undergoing*

- Synchronized Electrical Cardioversion

Maintaining homeostasis in critical patient (adult, mention to infant and child)

Assist patient with

- Impaired endocrine system
- Alteration of thermoregulation
- Acid-base, water-electrolyte, metabolic imbalance
- Impaired blood volume, edema, dehydration
- Impaired liver function
- Impaired renal function (continuous veno-venous hemofiltration - CVVH, outline)
- Alteration of nutritional status [evaluation of nutritional status, management of artificial nutrition (residual gastric volume, intolerance to artificial enteral nutrition), control of glycemic values]

## **Neurological assessment of the critical patient (adult, mention to newborn and child)**

### *Disorder of consciousness (DOC)*

- Unresponsive Wakefulness Syndrome (UWS), Minimally Conscious State (MCS), Coma, Long Lasting Coma (LLC), Brain death (outline) \*\*\*\*

### \*Clinical and instrumental monitoring \*

- Assessment Tools
- Assessment of intra-cranial pressure (PIC), Electroencephalogram (EEG) [outline]

### *Pain assessment in a critical setting*

- Assessment Tools

### *Evaluating sedation and agitation in adult ICU patients*

- Assessment Tools

### *ICU patient with Delirium*

- Assess
- Prevent
- Manage

### \*\*Nursing responsibilities and competencies relating to: \*\*

- Management of pharmacological therapy in critical areas
- Use of early recognition systems of deterioration of vital functions: standardized measurement of disease severity (EWS systems)
- Restraint in the Intensive Care Unit: regulatory, deontological and jurisprudential reference (individual study)
- Methods of approaching the person/caregiver in critical situations, characterized by intense emotional stress; delivering the “bad news”
- Management of intra-hospital emergencies (reference to the activation criteria of the Medical Emergency Team -MET)
- Prevention of nosocomial infections in the ICU: ventilator associated pneumonia (VAP), Sepsis and septic shock

## **Pre-hospital assessment, management and transport of polytrauma patient**

- Premises
- ABCDE system: assessment and management of Airway, Breathing, Circulation, Disability, and Exposure
- Patient immobilization (devices)
- Transport

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## **Prerequisites**

Da regolamento

## **Teaching form**

Lectures delivered in face-to-face mode with clinical case practice

## Textbook and teaching resource

### ESSENTIAL REFERENCES

*Adult e pediatric*

AARC Clinical Practice Guidelines: Artificial Airway Suctioning (2022). *Respiratory Care*. Vol 67 N. 2

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Clinical Practice Guidelines for the Prevention and Management of Pain, Agitation/Sedation, Delirium, Immobility, and Sleep Disruption in Adult Patients in the ICU (2018) *Critical Care Medicine*

Davis MD, Walsh BK, Sittig SE, Restrepo RD (2013) AARC clinical practice guideline: blood gas analysis and hemoximetry. *Respiratory Care* 58(10):1694-703

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Kallet R.H. (2019), Ventilator Bundles in Transition: From Prevention of Ventilator-Associated Pneumonia to Prevention of Ventilator-Associated Events. *Respiratory Care*. Vol 64 N. 8

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Sousa AS, Ferrito C, Paiva JA (2018), Intubation-associated pneumonia: An integrative review. 44: 45-52

Surviving Sepsis Campaign: Guidelines on the Management of Critically Ill Adults with Coronavirus Disease 2019 (COVID-19)

### IN-DEPTH REFERENCE

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American Academy of Pediatrics and American heart Association (2016), Textbook of Neonatal Resuscitation. 7th edition. American Academy of Pediatrics

A.S.P.E.N. Clinical Guidelines: Nutrition Support of Adult Patients With Hyperglycemia (2013) *Journal of Parenteral and Enteral Nutrition*, Volume 37 Number 1:23-36

Australasian College of Emergency Medicine (2009), Emergency triage education kit

Australasian College for Emergency Medicine (2016), Guidelines on the implementation of the Australasian triage scale in emergency departments

Badon P, Cesaro S (2012). Manuale di nursing pediatrico. Casa Editrice Ambrosiana

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Giacino JT, Katz DI, Schiff ND, Whyte J, Ashman EJ, Ashwal S, Barbano R, Hammond FM, Laureys S, Ling GSF, Nakase- Richardson R, Seel RT, Yablon S, Getchius TSD, Gronseth GS, Armstrong MJ, Gratton RJ, Bazaracai N, Cameron I, Watts N, Brayman C, Hancock G, Twohey R, AlShanteer S, Ryder JE, Wodrich K, Williams E, Guay A, Basso M, Smithson DS (2016). Acuity Assessment in Obstetrical Triage. *J Obstet Gynaecol Can.* 38(2):125-33

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Manuale formativo di triage pediatrico (2009). Biomedica

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Ministero della salute (2010), Linee di indirizzo sull'organizzazione del sistema di trasporto materno assistito (STAM) e del sistema in emergenza del neonato (STEN)

Ministero della salute (2014), Il dolore nel bambino. Strumenti pratici di valutazione e terapia. Rodrigo editore srl.

Ministero della salute (2014), Raccomandazione per la prevenzione della morte o disabilità permanente in neonato

sano di peso > 2500 grammi non correlata a malattia congenita.

Ministero della salute (2014), Linee di indirizzo nazionale per l'organizzazione e la gestione delle banche del latte umano donato nell'ambito della protezione, promozione e sostegno dell'allattamento al seno

## **Semester**

### **Assessment method**

A final examination (written with compulsory oral) is planned as follows

Written

Internal Medicine 4 open questions for the extensive check of preparation on the examination programme

General surgery 3 open-ended questions for an extensive preparation check on the syllabus

Anaesthesiology open-question test for extensive checking of preparation on the examination syllabus;

Oral

Critical care nursing Oral test: interview on topics covered in the lecture and examination texts

## **Office hours**

### **Sustainable Development Goals**

GOOD HEALTH AND WELL-BEING | QUALITY EDUCATION | GENDER EQUALITY

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