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## Education and training of emergency nursing

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### Abstract

In recent years, rapid changes taking place in the system of medical emergency services, as well as in emergency nursing, have contributed to changes of binding legislation.

Amendment of the regulation of the Minister of Health and Social Welfare on postgraduate education of nurses and midwives concerned the extension of domains' list by emergency nursing, which has resulted in the organisation of specialist and training in the field of emergency nursing since 2004.

The objective of the following paper is to present new regulations normalising education of nurses, with a detailed specialist curriculum "Performing tracheotomy: the decompression of tension pneumothorax and intraosseous access" as well as the nurse's rights in the field of diagnostics and therapeutic services.

**Key words:** emergency nursing; education; emergency nurse; disaster response

## Introduction

In recent years, rapid changes taking place in the system of medical emergency services, as well as in emergency nursing, have contributed to changes of binding legislation.

Amendment of the regulation of the Minister of Health and Social Welfare on postgraduate education of nurses and midwives concerned the extension of domains' list by emergency nursing, which has resulted in the organisation of specialist and training in the field of emergency nursing since 2004 [1-3].

New scope of rights of a specialist nurse, acquired within the framework of postgraduate education, entitling the nurse to be provided with specific services in the field of emergency medicine individually, turned out to be particularly relevant. Those rights are granted to the specialist nurse provided that specialist training are completed.

The objective of the following paper is to present new regulations normalising education of nurses, with a detailed specialist curriculum "Performing tracheotomy: the decompression of tension pneumothorax and intraosseous access" as well as the nurse's rights in the field of diagnostics and therapeutic services.

Changes currently taking place in the system of medical emergency services have a direct impact on the need for education for nurses and their professional development and also the need for training for specialist nurses of the State Medical Emergency Services [4-7].

Amendment of the regulation of the Minister of Health of 7<sup>th</sup> November 2007 grants rights to provide certain diagnostic and therapeutic services upon specialist nurses. Rights granted under the above regulation concern a person holding the licence of specialist nurse. Pursuant to the Act on the State Emergency Medical Services, a specialist nurse is a person holding the title of specialist or a person specialising in the field of emergency, anaesthetic and intensive care, surgical, cardiologic or paediatric nursing and also a person, who completed training in the field of emergency, anaesthetic and intensive care, surgical, cardiologic or paediatric nursing and has 3-years professional experience in departments with these specialties, departments of emergency care, admission room or emergency service.

In an attempt to meet the needs of the emergency service system and social expectations in the field of competence improvement of specialist nurses of the State Medical Emergency Services, the authors of this paper have compiled a detailed curriculum for specialist training "Performing of tracheotomy: the decompression of tension pneumothorax and intraosseous access" approved on the 30<sup>th</sup> January 2009 by the Centre for Postgraduate Education of Nurses and Midwives in Warsaw. Currently, the commencement of the first specialist training in Poland organised by the Centre of Postgraduate Education of the Prof. F. Skubiszewski Medical University for nurses and midwives in Lublin is at the final stage of preparation. The training is addressed to specialist nurses of the State Medical Emergency Services. The specialist training "Performing tracheotomy: the decompression of tension pneumothorax and intraosseous access" was created pursuant to the provisions of the regulation of the Minister of Health of the 7<sup>th</sup> November 2007 on the types and the scope of preventive, diagnostic, therapeutic and rehabilitative services provided by a nurse or midwife individually without doctor order (Dz. U. No. 210, item 1540). The objective of the following paper is to present new regulations normalising education of specialist nurses, a detailed curriculum of the specialist training "Performing tracheotomy: the decompression of tension pneumothorax and intraosseous access", which, if completed, enables a nurse to acquire rights to provide specific services included in medical emergency services provided in special situations and situations of sudden health risk.

## **Legal regulations normalising postgraduate education of nurses.**

Postgraduate education of nurses is regulated by the Nurses and Midwives Profession Act and two regulations of the Minister of Health and Social Welfare on postgraduate education of nurses and midwives, and on the list of domains in the field of nursing and those domains applicable in health care, in which specialisations and qualificatory trainings as well as framework programmes can be conducted [8].

The objective of specialist training is to prepare highly qualified nursing staff to perform the tracheotomy, the decompression of tension pneumothorax and intraosseous access for medicine administration in special situations and situations of sudden health risk. The specialist training is addressed to persons holding a license of specialist nurse of the State Medical Emergency Services, that is, a person that has already completed a specialist training or is in the middle of such a training or has completed a qualificatory training in the aforementioned fields and has 3 – year professional experience in these fields of specialties. Medical activities included in the scope of education cycle will be performed during classes under simulated conditions, in groups of 4-5 persons, with use of specialised equipment. The participant will be obliged to perform every activity in the field of the tracheotomy, the decompression of tension pneumothorax and intraosseous access correctly 10 times in order to complete individual units.

Classes will be conducted by lecturers, who currently perform medical emergency activities, have 5-year-professional experience in the units of the State Medical Emergency Services and fulfil at least one of the following conditions: They hold a title of specialist in the field of emergency or anaesthetic nursing and intensive care, They are engaged in medical specialty in the field of emergency medicine or anaesthesiology and intensive care, They graduated from higher education studies in the department (specialisation) of medical emergency services. As a result of completion of curriculum of the specialist training „Performing tracheotomy: the decompression of tension pneumothorax and intraosseous access” the nurse should: identify and assess the situations of sudden health risk and undertake emergency actions at the incident site; perform the tracheotomy in situations of sudden health risk; perform the decompression of tension pneumothorax in situations of sudden health risk; perform the intraosseous access and administer medicine intraosseously in situations of sudden health risk; identify and prevent consequences of situations of sudden health risk. Duration of training. The training curriculum comprises a theoretical part and classes under simulated conditions. The total number of hours dedicated to completion of the training amounts to 40 didactic hours, of which 15 hours of theoretical classes and 25 hours of practical classes. The content of the curriculum comprises 3 units: 1<sup>st</sup> unit ”Tracheotomy as a method of restoring patency of the respiratory tract” – 15 didactic hours 2<sup>nd</sup> unit “The decompression of tension pneumothorax” – 15 didactic hours 3<sup>rd</sup> unit “Intraosseous medicine administration in situations of sudden health risk” – 10 didactic hours Unit 1. Tracheotomy as a method of restoring patency of the respiratory tract [1].

The objective of the unit is to prepare nurses to identify symptoms of sudden health risk, depending on the age of the injured, and to perform the tracheotomy in the situation when there is no other possibility to assure patency of the respiratory tract. As a result of the completion of the curriculum in the field of the tracheotomy as a method of restoring patency of the respiratory tract, the nurse should: enumerate the most common situations in which the respiratory track might close, depending on the age of the injured, discuss the causes of disorders of respiratory tract patency in infants, children and adults, identify clinical symptoms and diagnose the occlusion of the respiratory tract, depending on the age and the

state of consciousness of the injured, apply the introduced methods of removing a foreign body from the respiratory tract of a conscious and unconscious person, present the rules of conduct in the case of the occlusion of the respiratory tract, discuss the methods of restoring the patency of the respiratory tract with or without instruments, enumerate the indications and contraindications of performing the tracheotomy, prepare the instruments and the patient for the tracheotomy, indicate the place of puncture of cricothyroid membrane in infants, children and adults, perform the tracheotomy, taking into account the age and body structure of the injured and effective principles, discuss the methods of monitoring of the respiratory tract in situations of sudden health risk, present the procedure for dealing with a victim after tracheotomy, enumerate complications and risks connected with tracheotomy, discuss the procedure of dealing with a victim after removing tracheotomy tube.

The subject matter of the classes. Air passage obstruction in infants, children and adults: variability and specific features of the procedure in situations of health risk in infants and children; ethiology of air passage obstruction. Symptoms of partial and total air passage obstruction in infants, children and adults: effective cough, ineffective cough, procedure of dealing with a choking child and adult, conscious or unconscious

Methods of opening the air passage: opening air passage without the use of equipment, methods and techniques of opening the air passage with the use of equipment. Tracheotomy as a method of opening the air passage: indications, relative and irrelative contraindications, the point of performing tracheotomy, identification of the cricothyroid membrane in infants, small children and adults, tracheotomy set, method of performing tracheotomy, taking into account the age and body build of a victim, complications and risks associated with tracheotomy, the procedure of dealing with a victim when tracheotomy is applied, monitoring the condition of a victim with particular consideration of the respiratory system, assessment of clinical symptoms of a successful oxygenation, recognising the symptoms of barotrauma (patients with a thorax trauma), pulsoxymetry, the procedure after removing tracheotomy tube, final supply of air to air passages. The procedure of performing tracheotomy - a simulation: preparing the victim, preparing the equipment, method of performing the procedure taking into account the age of the victim, infants, children, adults, the method of performing tracheotomy taking into account the body build of the victim, rules which apply during performing the procedures, [6-9]

### **Pneumothorax decompression**

The aim of the unit is to prepare nurses for performing tension pneumothorax decompression through the pulmonary cavity puncture in situations of health risk.

As a result of completing the educational content on the topic of tension pneumothorax decompression, a nurse should: enumerate the most common causes of tension pneumothorax, , discuss the kinds of aerothorax, recognise the clinical symptoms and be able to differentiate between the tension pneumothorax, depending on age and condition of a victim, and other conditions of thorax causing life risk, enumerate risk factors predisposing the occurrence of tension pneumothorax in conscious and unconscious patients, discuss the pathophysiology of changes occurring in the progressing tension pneumothorax, enumerate the symptoms of tension pneumothorax in conscious and unconscious patients, discuss the procedure for diagnosing tension pneumothorax in conscious and unconscious patients, prepare the equipment and the patient for performing tension pneumothorax decompression, indicate the point of the pulmonary cavity puncture in situations of health risk, enumerate complications and risks of the procedure of tension pneumothorax decompression, present the procedure for dealing with a patient after applying draining of the pulmonary cavity.

## **Intraosseus medicine administration in situations of sudden health risk**

The aim of the unit is to prepare a nurse to establish intraosseous access in a victim in the situation of a sudden health risk with the use of a prepared set and to administer drugs and infusion liquids intraosseously.

As a result of the implementation of the education programme in the field of intraosseous medicine administration to an injured person in situations of sudden health risk a nurse should:

enumerate the methods of administering medicines in situations of sudden health risk, discuss the aims of pharmacotherapy and fluid therapy in situations of sudden health risk, enumerate and describe indications for performing intraosseous access, discuss contraindications for performing intraosseous access, describe the rules of preparation and administration of medicines and fluids via intraosseously, enumerate medicines and fluids administered intraosseously, identify places of intraosseous access in children and adults, taking into consideration the injured person's state, present the technique of performing intraosseous access, perform intraosseous access according to binding standards, administer medicines and fluids intraosseously according to the procedure, monitor the patient's state during the procedure of performing intraosseous access and administering medicines and infusion fluids; also via intraosseously, discuss and identify symptoms of complications likely to occur during the performance of intraosseous access and intraosseous administration of medicines, discuss the rules of caring for intraosseous access.

MD Specialist in anaesthesiology and intensive care, Nurse with a Master's Degree in nursing and/or with a specialist title in rescue or anaesthetic nursing and intensive care, Paramedic with completed university studies in the field of Medical Emergency.

## **Conclusions**

Professional care of patients in states of sudden health risk can be provided only by nurses who have high qualifications in specialist nurse and licences to perform medical emergency operations. Because the medical emergency system is undergoing changes, there have appeared new needs related to the specialist training of specialist nurses, which aim to prepare qualified nursing staff to perform high-quality health-related services. The scope of diagnostic and therapeutic services, for the performance of which the nurse will be authorised in connection with independent performance of services, forming part of medical emergency operations, which will enable the regaining and maintaining of the vital functions of patients in situations of sudden health risk.

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