

ISSN 2710-3056

# Grail of Science

Periodical scientific journal

No 10

November  
2021

## The issue of journal contains

Proceedings of the II Correspondence  
International Scientific and Practical Conference

### **SCIENCE OF POST-INDUSTRIAL SOCIETY: GLOBALIZATION AND TRANSFORMATION PROCESSES**

held on November 19<sup>th</sup>, 2021 by

NGO European Scientific Platform (Vinnytsia, Ukraine)

LLC International Centre Corporative Management (Vienna, Austria)



**OU CI**  
Open Ukrainian Citation Index




Euro Science Certificate № 22338 dated 16.10.2021

UKRISTEI (Ukraine) Certificate № 865 dated 22.10.2021

INDEX  COPERNICUS  
INTERNATIONAL

INTERNATIONAL SCIENTIFIC JOURNAL

# GRAIL OF SCIENCE

№ 10  November, 2021  
with the proceedings of the:

II Correspondence International Scientific and Practical Conference

## MODERN SCIENCE: CONCEPTS, THEORIES AND METHODS OF BASIC AND APPLIED RESEARCH

held on November 19<sup>th</sup>, 2021 by

NGO European Scientific Platform (Vinnytsia, Ukraine)

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EUROPEAN  
SCIENTIFIC  
PLATFORM



International Centre  
Corporate Management

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Міжнародний науковий журнал «Грааль науки»

№ 10 (листопад, 2021) : за матеріалами II Міжнародної науково-практичної конференції «Modern science: concepts, theories and methods of basic and applied research», що проводилася 19 листопада 2021 року ГО «Європейська наукова платформа» (Вінниця, Україна) та ТОВ «International Centre Corporate Management» (Відень, Австрія).



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*Conference proceedings are indexed in ICI (World of Papers), CrossRef, OUCI, Google Scholar, ResearchGate, ORCID and OpenAIRE.*

Свідоцтво про державну  
реєстрацію друкованого ЗМІ:  
КВ 24638-14578ПР, від 04.11.2020

Certificate of state  
registration of mass media:  
КВ 24638-14578ПР of 04.11.2020



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DOI 10.36074/grail-of-science.19.11.2021.093


## EMERGENCY CONDITIONS AS SIMULATION MEDICAL SCENARIOS FOR APPLICANTS OF EDUCATION

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**Summary.** *Emergency conditions are very life-threatening situations and require fast actions and immediate intervention from medical staff. For young doctors without extensive experience in the treatment of these important diseases, it is very crucial to know and timely apply modern treatment algorithms. Simulation medical scenarios are a good approach and can help to improve knowledge and practical skills. Authors provide frequent trainings for students and interns for emergency medical conditions according to world standards and University syllabus. The main idea is to create new and improve old practical skills and competencies for students and interns.*

**Keywords:** *simulation, medicine, seizures, emergency, training, scenario, students.*

Medical emergencies are life-threatening conditions which need immediate intervention. The way medicals react during these medical emergencies can make a big difference between life and death of the patient. Emergency conditions are the most critical for the patient's vital health care. It is required for emergency departments to find out fast solutions in case of issues. Thus, simulation scenarios are an effective method to improve policies on operational, tactical and strategic decisions about emergency conditions for patients [1]. At the same time patient safety is a common reason simulation is a preferred teaching method. Moreover,

research has demonstrated that appropriately conducted learning objectives and simulation scenarios are as effective, and in many cases, more effective than traditional teaching methods used in the education of healthcare providers [2, 3]. Medical simulation as an educational approach allows students to use their previously received knowledge and skills in solving clinical problems of complex situations to experience critical thinking [4, 5].

The most common emergency conditions we are currently considering as the most life-threatening are:

- 1) Heart attack;
- 2) Stroke;
- 3) Seizures (Convulsions);
- 4) Head trauma;
- 5) Burns.

All of them have their own features such as pathological processes [6] and big differences in treatment and medical management [7].

In 2021, with the help of leading specialists from clinical departments at Odessa National Medical University, to improve the quality of practical training, the cycle "Simulation and virtual technologies in medicine" was improved and the cycle "Medical ethics, deontology and professional communication" was created. Their creation has helped to improve practical skills and increase the ability of students to provide emergency care. These cycles are interdisciplinary, joint work is underway with leading clinical departments to improve student learning algorithms.

The directions of training in the cycles "Simulation and virtual technologies in medicine" and "Medical ethics, deontology and professional communication" include both practical stations (practical skills from leading disciplines are developed according to modern emergency care protocols, using high-quality mannequins with feedback) and full practice of simulation scenarios for emergencies. In addition to the above-mentioned the most common emergency conditions, scenarios are also carried out for such urgent conditions as: anaphylactic shock in adults and children, hypo/hyperglycemia in adults and children, pulmonary edema, severe attack of bronchial asthma, acute coronary syndrome and all scenarios according to BLS, ACLS, PBLIS, PALS [8]. From the practical skills related to emergency conditions during cycles, students can practice the following practical skills: needle decompression during tension pneumothorax, cricothyroidotomy, puncture of the pericardium, working out the algorithm first person on a scene during Trauma scenario.

Typical scenario execution includes:

- Briefing (brief explanation of goals and objectives, dummy capabilities and expected results)
  - Scenario (a group of students (interns) of 5-6 people on their own without the presence of a teacher, cope with a clinical task on high-fidelity mannequins)
  - Debriefing (analysis of the scenario based on video recording, conclusions)
- [9].

A separate point is the broadcast of the scenario for teachers and other students, who can assess the situation during the scenario in real time.

All scenarios are passed by students of the last courses (6th year of study) within the training cycle, as well as by interns of all specialties. Separately, it should be noted the importance of passing scenarios for emergencies by interns specializing in Emergency Medicine, Traumatology and Orthopedics, Anesthesiology and Reanimatology, Cardiology and General Practice - Family Medicine.

The authors of the article consider the implementation of such scenarios and the development of practical skills as an important key point in acquiring competencies for future, and a separate point is the question of regularly undergoing trainings for practicing doctors in order to improve their qualifications and constantly update relevant modern knowledge and skills at a competent level.

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*The scientific periodical*

## **GRAIL OF SCIENCE** **№ 10 (November, 2021)**

with the proceedings of the II Correspondence International Scientific and Practical Conference « Globalization of scientific knowledge: international cooperation and integration of sciences» held on November 19<sup>th</sup>, 2021 by NGO European Scientific Platform (Vinnytsia, Ukraine) and LLC International Centre Corporative Management (Vienna, Austria).

*Journal's frequency: monthly*

*All materials are reviewed. The editorial office did not always agree with the position of authors. Authors are responsible for the accuracy of the material.*

### **Contacts of the editorial offices:**

1. 21037, Ukraine, Vinnytsia, Zodchykh str. 18, office 81; NGO «European Scientific Platform» **[Owner of the journal]**  
Tel.: +38 098 1948380; +38 098 1956755  
E-mail: info@ukrlogos.in.ua  
Certificate of the subject of the publishing business: ДК № 7172 of 21.10.2020.
2. 1110, Österreich, Wien, Simmeringer Hauptstraße 24; LLC «International Centre Corporative Management»  
E-mail: rachael.a@iccm.org

Signed for publication 19.11.2021.

Format 60×84/16. Offset paper.

Arial & Open Sans typefaces.

Digital printing. Circulation of 100 copies.

Conventionally printed sheets 38,01.

*Order № 25345.*

*Printed from the finished original layout.*

Publisher [printed copies]:

Sole proprietorship - Gulyaeva V.M.

08700, Ukraine, Obuhiv, Malyska str. 5.

E-mail: 5894939@gmail.com

Certificate of the subject of the publishing

business: ДК № 6205 of 30.05.2018.

*Наукове періодичне видання*

## **ГРААЛЬ НАУКИ** **№ 10 (листопад, 2021)**

за матеріалами II Міжнародної науково-практичної конференції «Globalization of scientific knowledge: international cooperation and integration of sciences», що проходила 19 листопада 2021 року ГО «Європейська наукова платформа» (Вінниця, Україна) та ТОВ «International Centre Corporative Management» (Відень, Австрія).

*Щомісячне видання*

*Всі матеріали пройшли рецензування. Редакція не завжди поділяє позицію авторів. За точність викладеного матеріалу відповідальність несуть автори.*

### **Контактна інформація редакції:**

1. 21037, Україна, м. Вінниця, вул. Зодчих, 18/81; ГО «Європейська наукова платформа» **[власник журналу]**  
Тел.: +38 098 1948380; +38 098 1956755  
E-mail: info@ukrlogos.in.ua  
Свідоцтво суб'єкта видавничої справи: ДК № 7172 від 21.10.2020.
2. 1110, Österreich, Wien, Simmeringer Hauptstraße 24; LLC «International Centre Corporative Management»  
E-mail: rachael.a@iccm.org

Підписано до друку 19.11.2021.

Формат 60×84/16. Папір офсетний.

Гарнітура Arial & Open Sans.

Цифровий друк. Тираж: 100 примірників.

Умовно-друк. арк. 38,01.

*Замовлення № 25345.*

*Віддруковано з готового оригінал-макету.*

Виготовлювач [друкованої продукції]:

Друкарня ФОП Гуляєва В.М.

08700, Україна, м. Обухів, вул. Малишка, 5.

E-mail: 5894939@gmail.com

Свідоцтво суб'єкта видавничої

справи: ДК № 6205 of 30.05.2018.