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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 stuff. 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 trainigs 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, PBLS, 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.

References:

[1] Muhammet Gul, Ali Fuat Guneri (2015). A comprehensive review of emergency department simulation applications for normal and disaster conditions. Computers & Industrial Engineering, Volume 83, Pages 327-344, ISSN 0360-8352, https://doi.org/10.1016/j.cie.2015.02.018.

[2] Davis D, Warrington SJ. (2021) Simulation Training and Skill Assessment in Emergency Medicine. [Updated 2021 May 9]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2021 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK557695/

[3] Pandian, V., Leeper, W. R., Jones, C., Pugh, K., Yenokyan, G., Bowyer, M., & Haut, E. R. (2020). Comparison of surgical cricothyroidotomy training: a randomized controlled trial of a swine model versus an animated robotic manikin model. Trauma surgery & acute care open, 5(1), e000431. https://doi.org/10.1136/tsaco-2019-000431

[4] Ae Ri Jang, In Kyoung Lee & Hang Nan Cho | Piotr Mikiewicz (Reviewing editor) (2019) Simulation scenarios in Korea according to the learning objectives of adult health nursing: A literature review, Cogent Education, 6:1, DOI: 10.1080/2331186X.2019.1678795

[5] Lee, J. M., So, H. S., Kim, Y. K., Kim, J. E., & An, M. J. (2014). The effects of high fidelity simulation-based education on clinical competence and confidence in nursing students: A systematic review. The Journal of the Korean Contents Association, 14(10), 850–861. doi:10.5392/JKCA2014.14.10.850

[6] Kandaswamy, E., & Zuo, L. (2018). Recent Advances in Treatment of Coronary Artery Disease: Role of Science and Technology. International journal of molecular sciences, 19(2), 424. https://doi.org/10.3390/ijms19020424

[7] Godlevsky L.S., Shandra O.O., Pervak M.P., Shandra A.A. (2020) Diazepam and electrical stimulation of paleocerebellar cortex inhibits seizures in pentylenetetrazol-kindled rats - Acta Neurobiol Exp 2020, 80 DOI: 10.21307/ane-2020-028 : 322–330

[8] Artyomenko V.V., Nosenko V.M. (2017) Anesthesiologists` simulation training during emergencies in obstetrics. Romanian Journal of Anaesthesia and Intensive Care, 2017 Vol 24 No 1, 37-40. doi: http://dx.doi.org/10.21454/rjaic.7518.241.dym

[9] Dan Sebastian Dirzu (2017) Medical simulation - a costly but essential teaching tool // Romanian Journal of Anaesthesia and Intensive Care, 2017 Vol 24 No 1, 5-6 DOI: http://dx.doi.org/10.21454/rjaic.7518.241.drz

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