

Modern Principles of Simulation Training in Medicine

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Abstract: The article provides data on the study of the subject of simulation training in surgery, gynecology, dentistry, and also focuses on the repeatability of medical skills in SB on various mannequins, simulators, which makes it possible to carry out various practical skills in surgery, therapy, obstetrics-gynecology, and also paw roscopic placement in various organs of the abdominal cavity to the point of automatism. Such mastery of the technique and practical skills allows you to accurately perform all medical procedures during surgery and examinations

Key words: Simulation training, simulators, dummies.

Simulation training (ST) in medicine is a mandatory component in professional training, using a model of professional activity in order to provide each student with the opportunity to perform a professional activity or its element in accordance with professional standards and rules for the provision of medical care. In our Republic, simulation training appeared at the end of the twentieth century, although our scientists began to study simulation in the 50s of the last century when training pilot specialists in cosmonaut training centers and high-flying pilots within Russia. When training these specialists, all the features and dangers of working in this area were taken into account. Any mistake made in these specialties was exactly the death of these people, so they had to master the skills of the specialty to the end and bring the implementation of these skills to automatism in conditions close to the natural work of these specialists. In medicine, also, for an error in work, the life of another person may suffer, and therefore advanced teachings of doctors proposed this principle of work in medicine.

Mac Gagli (1999) describes a simulation as “a person, device, or set of conditions that allows an authentic recreation of an actual problem. The student or trainee must react to the situation as he would in real life.” David Gaba (2004) of Stanford University has proposed a more detailed definition of this term, according to which simulation is “a technique (not a technology) that allows the practical experience of the learner to be replaced or enriched by an artificially created situation that reflects and reproduces problems occurring in the real world in a fully interactive manner.

Doctors Nicolas Marant and Ronnie Glavin (2003) from the Scottish Clinical Simulation Center described simulation as an educational technique that provides an interactive activity, an immersive experience, by recreating a real-life clinical picture in whole or in part, without the associated risk to the patient.”[6,7,8,11,12,14,16,17,22].Simulation training should be conducted by specially trained full-time instructors (teachers-trainers, training masters), who, together with practicing specialists (experts), will create and accumulate various scenarios, conduct methodological work, and also, together with technical workers (technicians and engineers), develop and maintain training tools (software, computers, simulators, simulators, phantoms, models and professional equipment) in working and safe condition based on a system of engineering maintenance and supply of consumables [1,2,3,5,6, 11, 15,17,19,21,23].

The purpose of this work is to provide an explanation of the proper functioning of simulation training in the healthcare system in the form of a simulation module.

The objectives of this work were:

- give the concept of proper operation of the system;
- compliance with the principles of effective CO technology;
- studying the standards of simulation training modules.

If simulation training functions correctly, all health care participants will achieve their own goals: State (Ministry of Health) - improving the quality of training of young specialists, monitoring the quality of work of practicing specialists.

In addition, the state has the right to expect savings in funds spent on training specialists due to a reduction in training time, as well as savings due to improved quality of medical care.

Employers – reducing the number of professional errors, reducing the risk of liability for the actions of their employees, increasing the authority of their institution.

Medical workers - quick entry into the profession, meeting the requirements of employers. Simulation training in medicine can be called a simulation center, since by recreating a real clinical picture in whole or in part, a place for providing care to the patient is created without any associated risk for the patient. Carrying out manipulations, providing various types of assistance before carrying out specific operations on various organs and systems can be brought to automation by analyzing and repeating every movement of the person providing medical care many times, again without any associated risk for the patient. For the correct functioning of simulation training, it is necessary to adhere to the principles of effective teaching technology and the following organizational principles:

1. Integration of simulation training into the current system of vocational education at all levels.
2. The presence of a legislative framework that contains the norm for admission to work (training) with patients, as well as a list of mandatory competencies in specialties that require the priority organization of simulation training. As a result, it should become the norm to exclude (exclude) persons from training (working) with patients who have not been certified with the help of For the correct functioning of simulation training, it is necessary to adhere to the principles of effective teaching technology and the following organizational principles:

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- 3.Intensive organization of the educational process, modular construction of the simulation training program and opportunities for simultaneous training of different categories of medical personnel (by type and specialty).

- 4.Objectivity of certification based on approved standards (rules), for compliance with criteria and with documentation and video recording of the process and results of pedagogical control, during which the influence of the examiner's personality should tend to zero.

- 5.The presence of independent experts and observers during state certification procedures is mandatory from among employers (professional communities), as well as two members of societies associated with the protection of patients' rights (changing each time).

- 6.A unified system for assessing the results of simulation training (for all organizers using these simulation techniques).

- 7.Availability of a system of state registration of the results of completion of the relevant modules of simulation training by specialists (registry of specialists).

- 8.Availability of a personnel training system (teachers, instructors) providing simulation training. A standard training module or a standard simulation module (SIM) is a unit of the educational process of simulation training equal to five hours of working time of the Training Center, allocated for direct interaction of students with learning tools (practical training), accompanied by pedagogical supervision[1,4,6,7,11,12,15,19.]. Each such unit has a formulated final result of preparation and a certain cost. The presence of such a unit of the educational process will make it possible to calculate the needs for training specialists. The presence of such a unit of the educational process will make it possible to calculate the needs for training specialists. SIM is necessary for organizing the educational process, and each of them includes a list of practical skills that will be developed (monitored) in students during this time. The list of skills in the SIM should be combined according to thematic principle, according to the equipment involved and according to the achievability of learning goals in five hours. In addition to clinical SIM, it is necessary to develop a SIM

for training new employees of simulation training centers - teacher-trainers, training masters and experts involved in this [8,10,18,20].

Standard simulation training modules can be delivered as stand-alone training sessions and be part of a larger simulation training program. This training is based on a practical lesson. To conduct a lesson on one topic, several modules can be implemented in a row. Each SIM carried out in the form of training must necessarily have the following parts:

1. control of the level of preparedness, instruction, setting goals and objectives of the training;
2. completing a learning task;
3. debriefing, discussion of ways to complete tasks;
4. final completion of tasks.

At least 60-70% of the time should be allocated to the second and third parts, and depending on the type of competencies, the distribution between them can range from 60:10 for individual skills to 30:40 for professional activities as a whole. The annotation for each SIM should indicate, in addition to the list of competencies, the maximum number of trainees in the group [14].

The training is based on performing an action, in the process of specially organized interactive communication with the teacher (trainer-expert) and other students, searching for “new” knowledge and eliminating one’s own mistakes. There are trainings for professional competencies and personal growth. Trainings in the implementation of traditional curricula can be carried out within the framework of the organizational form - a practical lesson. One of the common techniques when conducting training is a type of simulation training - an educational (business) game. The widespread use of professional competency training in the healthcare sector has become possible with the advent of special training tools: virtual simulators and robotic patient simulators. When teaching at the bedside, the priority is still the treatment of the patient, not the education of the student. In addition, the second condition – responsibility for one’s actions – will not work during the learning process. In a simulation lesson, the priority is the educational task, during which a negative outcome of medical care is allowed, so that the student feels the full extent of his responsibility.

Conclusions:

1. With the correct functioning of simulation training, highly qualified medical specialists are trained;
2. Subject to the principles of effective CO technology, innovative methods of treating patients are being introduced into medicine more widely;
3. With proper study of the standards of simulation training modules, a higher level of specialist preparedness is achieved.

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